CORONER'S COURT OF THE AUSTRALIAN CAPITAL TERRITORY

Matter Title:	**Inquest into the death of Rozalia Spadafora**
Citation:	**[2024] ACTCD 8**
Decision Date:	6 December 2024
Before:	Coroner Archer
Findings:	See [274]-[275], [278], [279]-[308]
Catchwords:	**CORONIAL LAW** – manner and cause of death – myocarditis – delayed diagnosis – gaps in paediatric care at the Canberra Hospital – inconsistent handovers – lack of a cohesive clinical care framework – unrecognised ECG abnormalities – delayed troponin test results – Clinical Initiatives Nurse (CIN) – infrastructure for paediatric care – Influenza vaccination
Legislation Cited:	*Coroners Act 1997* (ACT) ss 3BA, 13, 34, 39, 39A, 52, 55, 57
Case Cited:	*R v Doogan; Ex parte Lucas-Smith* [2005] ACTSC 74
Representation:	**Counsel Assisting the Coroner** M Fordham SC (with S Richards as Solicitor Assisting the Coroner) **Counsel for the Family** D Shillington (instructed by BAL Lawyers) **Counsel for the Australian Capital Territory** M Gerace SC & E Aitken (instructed by ACT Government Solicitor) **Counsel for Dr Anne Mitchell** J Sandford (instructed by MDA National) **Counsel for Dr Khaleda Yesmin and Dr Kirsty Dunn** J Nottle (instructed by MinterEllison) **Solicitor for Dr Mitchell Wilcox, Dr Aidan Watters, and Dr Conan Hall** H McCay (Avant) **Counsel for Dr Jade Stewart** T Berberian (instructed by MDA National) **Counsel for RN Lucinda Reumer** K Musgrove (instructed by Snedden Hall & Gallop Lawyers) **Counsel for Dr Abinesh Dhital and RN Sarah Retford** K Pattenden (instructed by Moray & Agnew)
File Number:	CD 187 of 2022

EXECUTIVE SUMMARY

Rozalia Spadafora died in the Canberra Hospital at 2252 hours on 5 July 2022. She died the day after her fifth birthday. Her death was caused by myocarditis, which is rapid onset inflammation of the heart muscle brought on, in this case, by influenza A. Myocarditis is a rare condition.

Rozalia was brought to the Emergency Department (ED) at the Canberra Hospital ("TCH") at approximately 1900 hours on 4 July 2022, having been unwell in the preceding days.

Evidence given by treating clinicians and independent experts indicated that while appropriate testing was eventually undertaken, the diagnosis of myocarditis, which eventually occurred at 1220 hours on 5 July 2022, was unreasonably delayed for the following reasons:

(a) After presentation at the ED at TCH, Rozalia was not seen by a doctor until 0016 hours on 5 July 2022. According to her triage category, Rozalia should have been seen within 30 minutes;
(b) Safety net processes that existed to ensure patients were seen within triaged timeframes were absent, apparently because of staffing and resource issues;
(c) An ECG indicating cardiac abnormality was misread in the morning of 5 July 2022;
(d) Symptomology consistent with myocarditis was not appropriately assessed;
(e) A blood result for troponin was not produced in an acceptable timeframe, and when it was, it was not acted upon; and
(f) There was a lack of a cohesive and co-ordinated process of care as between clinicians from different areas of TCH.

There was sufficient information by around 0740 hours on 5 July 2022 for a diagnosis of myocarditis to be made.

The delay in diagnosing myocarditis meant that by the time it was determined that Rozalia required transfer to Sydney for intensive care treatment, she was unable to be stabilised sufficiently for the journey.

The following matters of public safety arose from the evidence given in the inquest:

(a) A lack of timeliness in Rozalia being reviewed by a doctor in the Emergency Department and a lack of staffing resources to ensure that risks associated with a delayed review by a doctor were mitigated by a process of ongoing observation and review by a Clinical Initiatives Nurse (CIN);

(b) Inadequate levels of paediatric specialisation at TCH in the ED and Intensive Care Unit that would have allowed appropriate care to be provided to seriously unwell children such as Rozalia;

(c) A lack of clarity about roles and responsibility for management of Rozalia's care, including the existence of internally contradictory day sheets indicating allocation of beds to doctors; and

(d) Vulnerabilities and a lack of timeliness in the system for processing, reporting and notifying urgent and add-on pathology results.

I make the following recommendations:

(a) That Canberra Health Services ("CHS") adopts a staffing model that ensures the position of Clinical Initiatives Nurse (CIN) is filled on a 24-hour basis and quarantines the position from the staffing demands of the ED;

(b) That those involved in the implementation of the new ICU and the Paediatric ED, as well as the planning of the paediatric Close Observation Unit, consider the evidence in this inquest and these findings;

(c) That CHS review the functionality of the Digital Health Records system in respect of handover processes, in light of the evidence given in this inquest; and

(d) That CHS and ACT Health actively promote influenza vaccinations amongst children aged between 6 months and 5 years old.

CORONER ARCHER:

PART 1 – INTRODUCTION

1. Rozalia's death is a tragedy for her family and many friends.

2. Many members of Rozalia's family and family friends were present at the hearing.

3. During the investigation of Rozalia's death, I received descriptions of her during her tragically shortened life. Katrina, Rozalia's mother, was the first witness called at the hearing, and she spoke of her daughter movingly to a full courtroom. Her emotional pain filled the courtroom. I respectfully reproduce some of what Katrina said:

> Could you just tell his Honour a little bit about your daughter?---Rozalia was a beautiful, bright, bubbly spark of light. She was the first girl granddaughter in our family so she was the apple of everyone's eye. She was – had everyone wrapped around her little finger. She was an empathetic little person. She loved young and old alike. We could say that she was everyone's favourite just because it's just the way her personality was. She was always singing, dancing, just trying to make everyone happy. She was just the ray of sunshine in our lives. There was never a day that would go by with – you know, without her coming to call me her best friend and, 'Mummy, I love you so much' and she – she just would be with us all – me all the time in particular but, yes, me and my mum and just always wanted to be around family and just loved – loved life, loved her brothers, loved – brother, her little cousins, her older cousins. She just loved everyone. She was just a spark.

4. Video footage of Rozalia interacting with family and friends was played by the family. That footage was released to the media, and the grief of Rozalia's family was undoubtedly shared by everyone who viewed it. Before it was played, Katrina spoke further:

> Yes. She was the type of girl that if you had an interest in something she would make sure that her interest would align with your interest so she could get to know that person better. I know that sounds strange with her being only four but it was just the way she was. She – she would make an effort with everyone, everyone. She was a special little girl.

5. During the hearing, I expressed my sincere condolences to Rozalia's family and friends. I say again that I am sorry for the loss of their beautiful child, grandchild, family member, and friend.

6. The Australian Capital Territory ("the Territory"), through witnesses and in submissions, acknowledged that the care afforded to Rozalia by the Canberra Health Services ("CHS") fell short of acceptable standards. The Territory apologised to the family and committed itself to addressing the causes of the shortfalls that were evident in Rozalia's diagnosis and care.

7. I acknowledge the anger felt by the family in respect of CHS and, more generally, the ACT healthcare system. I also acknowledge their view that individual practitioners had failed to save their daughter and refused to take responsibility for failings in the standard of care they provided.

8. I must, however, proceed according to the law and the evidence before me, and make the findings I am required to make pursuant to the *Coroners Act 1997* (ACT) ("the Act"). As I said in opening the hearing, my role was and is not to vilify individual medical practitioners. Rather, I had an obligation to ensure that the evidence of witnesses was appropriately tested and, through these reasons, provide an explanation as to why Rozalia's diagnosis was delayed.

9. The role played by individual clinicians is considered as part of an assessment of the quality of care Rozalia received during her admission. The inadequacy of the care provided to Rozalia has been conceded by CHS. Clearly mistakes were made. However, my impression of the witnesses who were called at the hearing was that they were competent clinicians who cared deeply for the patients under their care. Their approach to the diagnostic puzzle that confronted them was sound in that a cardiac cause of Rozalia symptoms was considered and tested for. However, the diagnostic process was unreasonably delayed due to those acknowledged mistakes but also because of systemic factors that, in some instances, were outside their control. I acknowledge that the coronial process was confronting for them.

10. I observe that it was obvious to me that those responsible for Rozalia's care before and after her admission to the Canberra Hospital ('TCH") and those who gave evidence at the hearing felt the tragedy of her death in a heartfelt way.

PART 2 – THE COURSE OF THE INQUEST

JURISDICTION

11. The ability of a coroner to exercise jurisdiction in relation to a death is not at large. Most deaths that occur in the community are accounted for outside the coronial process. A coroner can only investigate when the legislation gives them the power to do so.

12. The death of a child in a hospital setting does not automatically result in a referral to the Coroner's Court. In each case, a determination is made by a clinician as to whether a medical certificate should be issued to certify the cause of death, or whether the death is otherwise of a type that attracts the operation of s 13 of the Act – for example, that the death may be the result of an operation or procedure.

13. In this case, the Australian Federal Police ("AFP") were informed by staff members at TCH that the doctors responsible for Rozalia's care were not prepared to issue a medical certificate to certify the cause of her death. The reasons for that reluctance were recorded by one of the treating clinicians as including:

    (a) their concerns as to the potential discordance between the working diagnosis of post-viral myocarditis and the rapidity of Rozalia's progression into cardiac arrest; and

    (b) the concerns expressed by Rozalia's parents as to whether Rozalia had a condition that pre-disposed her to myocarditis, and whether there were any opportunities to intervene earlier and to prevent the chain of events that led to her death.

14. There was a discretion vested in senior clinicians to refer Rozalia's death to the Coroner (by not writing a medical certificate). Given the circumstances, that discretion was exercised thoughtfully and correctly. The advocacy of Katrina's parents was influential in that decision to refer Rozalia's death to the Coroner.

15. In the absence of a medical certificate, Rozalia's death fell within the terms of s 13(1)(e) of the Act. As the relevant Coroner,[1] I am required to hold an inquest into the manner and cause of her death.

REQUIRED FINDINGS

16. Section 52 of the Act sets out the findings I am required to make. Relevantly, that section of the Act provides:

> **52 Coroner's findings**
>
> (1) A coroner holding an inquest must find, if possible—
>
> (a) the identity of the deceased; and
>
> (b) when and where the death happened; and
>
> (c) the manner and cause of death; and
>
> (d) in the case of the suspected death of a person—that the person has died.
>
> --
>
> (4) The coroner, in the coroner's findings—
>
> (a) must—
>
> (i) state whether a matter of public safety is found to arise in connection with the inquest or inquiry; and
>
> (ii) if a matter of public safety is found to arise—comment on the matter.

[1] Under the Act, a magistrate is a coroner for the Territory. The concept of a "dedicated coroner' is not reflected in the terms of the Act. The concept is given expression by an allocation decision made by the Chief Magistrate to give one Magistrate primary responsibility to exercise the functions of a coroner, as set out in the Act.

17. To find a "cause" of death in any given case, a coroner is required to consider what physiologically produced that result. Separately, a finding as to the "manner" of death involves a consideration of the circumstances in which the death took place. How broadly a coroner can, within jurisdiction, consider those circumstances is to be determined according to the relevant principles and the facts of each case.[2] Issues concerning the scope of this inquest are addressed below.

THE INVESTIGATION

18. For the purposes of the Act, an "inquest" means, in the first instance, an investigation.

The Autopsy

19. At my direction, Professor Johan Duflou, forensic pathologist, conducted a post-mortem examination. His opinion was that Rozalia died of myocarditis. The signs of the disease were not pronounced. The clinical manifestations of the condition were more severe than the apparent histologic changes in the heart. Histological samples were tested overseas in Hong Kong. Positive results for influenza A were obtained from samples taken from the throat, but not from the heart.

20. In his post-mortem report, Professor Duflou expressed his opinions in these terms:

> The clinical changes in the patient in the time leading up to death appear to be highly indicative of myocarditis, and a positive nasal swab influenza A PCR test provides support for a diagnosis of influenza A myocarditis. However, it is also the case that influenza A was not detected using both PCR testing and immunostaining on heart tissue sampled at postmortem, and the microscopic changes in the heart were similarly not typical of fulminant myocarditis.
>
> Given the conflicting virology results, the causative agent for the myocarditis has not been identified with certainty. Very likely, the myocarditis is viral or post-viral in aetiology, and it remains possible that the aetiological agent is the influenza A virus. On that basis, I give the cause of death as myocarditis.

Evidence from Treating Clinicians and the Relevant Medical Records

21. Relevant medical records were obtained by the Court, as well as statements from the practitioners involved in Rozalia's care. Statements from the clinicians who treated Rozalia at TCH were obtained either through the ACT Government Solicitor ("ACTGS") or the solicitors engaged by particular clinicians.

Expert Evidence

22. Expert opinions were sought to assess:

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[2] See generally *R v Doogan; Ex parte Lucas-Smith* [2005] ACTSC 74.

(a) the course of Rozalia's treatment (before and during her admission); and

(b) the adequacy of the care provided to her at TCH.

23. The experts who provided opinions were:

(a) Dr Robert Day, Senior Staff Specialist in Emergency Medicine, who practises at Royal North Shore Hospital in Sydney;

(b) Associate Professor Mike Starr, Consultant Paediatrician, Infectious Diseases Physician and Consultant in Emergency Medicine at the Royal Children's Hospital Melbourne, and Honorary Clinical Associate Professor at the University of Melbourne; and

(c) Dr Marino Festa, Paediatric Intensive Care Physician, Medical Co-Director at the Paediatric Intensive Care Unit at the Westmead Children's Hospital.

24. The opinions obtained from these experts informed the scope of the coronial investigation. The experts gave their evidence at the hearing concurrently. They presented their opinions as to the course of Rozalia's care in an insightful and accessible way. For that reason, their opinions are quoted at length in the passages that follow.

The Appointment of Counsel Assisting

25. In inquests that do not involve deaths in care or custody, section 39 of the Act grants a coroner the discretion to appoint a lawyer to assist them in the inquest. As s 39A(1) of the Act provides, the role of counsel assisting is to provide assistance to the coroner in the inquest and to appear at the hearing. On 6 February 2023, I appointed Mr Michael Fordham SC as counsel assisting.

THE HEARING

26. As s 34 of the Act provides, in the ACT, a coroner conducting an inquest may conduct a hearing. In Rozalia's case, it was my view that the evidence available to me in the form of statements and medical records did not fully address the manner and cause of her death, and that it was in the public interest that the evidence going to those issues be explored in a public hearing.

27. Nine days of hearing were conducted between 25 and 31 October 2023, and 4 and 7 December 2023.

The Scope of the Hearing

28. In addition to making the findings required by s 52 of the Act, I am also required by s 3BA(2)(a)(i) of the Act to carry out the objects of the Act in a way that recognises that the family and friends of the deceased person have an interest in having all reasonable

questions about the circumstances of the person's death answered. That responsibility, however, does not set aside the limitations s 52 of the Act places on my power to investigate.

29. On 11 August 2023, the Court sent an "issues list" to the interested parties. The purpose of that list was not to bind the Court as to the findings that should be made in light of the totality of the evidence, but to outline the focus of the matters to be explored at the hearing. I determined that those issues fell within an appropriate consideration of the manner and cause of Rozalia's death and canvassed any public safety issues arising from that consideration. Those issues were:

    (1) The chronology of Rozalia's presentation, condition, and deterioration.

    (2) The medical examinations, investigations, and treatment of Rozalia, including:
        (a) when examinations, investigations, and treatments were performed or provided;
        (b) the results of the examinations and investigations, and the effects of the treatments;
        (c) whether earlier or different investigation and/or treatments were indicated;
        (d) whether earlier transfer was indicated; and
        (e) what effect would earlier and/or different treatment and/or transfer have had?

    (3) The systems for:
        (a) the reporting of pathology results in the emergency department, paediatric emergency department and resuscitation areas; and
        (b) the allocation and handover of patients/beds/areas between responsible clinicians and nurses in the emergency department, paediatric emergency department and resuscitation areas.

    (4) The availability of paediatric services in the emergency department and paediatric emergency department at the Canberra Hospital, including paediatric cardiac and intensive care services.

    (5) The outcome of any reviews into paediatric services at the Canberra Hospital, so far as they related to the emergency department, paediatric emergency department, paediatric cardiac and paediatric intensive care services, and the implementation of any recommendations arising from those reviews.

    (6) Changes, if any, implemented at The Canberra Hospital since Rozalia's death to:

(a) systems for reporting pathology results in the emergency department, paediatric emergency department and resuscitation areas;

(b) systems for patient/bed handover/allocation in the emergency department, paediatric emergency department and resuscitation areas;

(c) the provision of paediatric services in the emergency department and paediatric emergency department at the Canberra Hospital including paediatric cardiac and intensive care services.

The Parties

30. Leave was granted to a number of persons, who, in my view, had a sufficient interest in the present inquest, to be represented by a lawyer at the hearing and to examine or cross-examine witnesses. Pursuant to that leave,

- Mr Dan Shillington appeared for Rozalia's family;
- Ms Maria Gerace SC and Ms Emily Aitken appeared for the Australian Capital Territory and the Canberra Health Services;
- Ms Jackie Sandford appeared on behalf of Dr Anne Mitchell;
- Mr Joshua Nottle appeared on behalf of Dr Khaleda Yesmin and Dr Kirsty Dunn;
- Mr Harry McCay (solicitor) appeared on behalf of Dr Mitchell Wilcox, Dr Aidan Watters, and Dr Conan Hall;
- Ms Teni Berberian appeared on behalf of Dr Jade Stewart;
- Ms Katrina Musgrove appeared on behalf of RN Lucinda Reumer; and
- Mr Karl Pattenden on behalf of RN Sarah Retford and Dr Abinesh Dhital.

PART 3 – ROZALIA'S GENERAL HEALTH

31. The course of Rozalia's treatment at TCH must be placed in the context of her health history.

32. Counsel Assisting asked Katrina some questions about Rozalia's health history:

> [I am going] to ask you a couple of questions about Rozalia's health, so how was her health in the years leading up to 2022?---She was perfect – perfectly healthy little girl. Had the odd – I think she had gastro probably once or twice. Other than that she would get little ear infections from time to time. On the last occasion she did get her last – second last ear infection the doctor noticed that her tonsils were rather large so he wrote up a referral letter to see Dr Makeham to see if we needed to get those removed. I did get a second opinion with my normal GP, Dr Serafim, and he confirmed that that, you know, would be a good recommendation. So, I went ahead and made that appointment but other than that, she was a normal, healthy young girl.
>
> Were all her immunisations up to date?---Yes, they were.
>
> You may have heard me say something in the opening about Fluvax?---M'mm.

> And by no means of criticism, but had she had a Fluvax?---No, she hadn't.

33. As with many young children, Rozalia had instances of an ear infection. She was otherwise a healthy child. Her parents were conscientious about her medical care when she became ill. She was fully immunised, though not vaccinated for influenza.

PART 4 – MYOCARDITIS (FULMINANT MYOCARDITIS)

PREVALENCE

34. To understand the course of Rozalia's treatment, it is necessary to understand what myocarditis is. Myocarditis is rare. Associate Professor Starr gave this explanation of myocarditis, which was adopted by the other experts:

> Myocarditis… is inflammation of the muscle of the heart and that can occur by various mechanisms, and I guess the most common is what we call idiopathic. We don't exactly know what the cause is but we assume in many cases that it's caused by a virus. There's also concept of post infectious myocarditis which is where an infection such as influenza sets up an immune response and there's an immune mediated inflammation in the heart muscles. One way or another, it's inflammation of the heart muscle.

35. As to its relationship with influenza A, he added:

> So myocarditis can be caused… directly by influenza, so just as – and people will be aware of having the flu and you – there's inflammation of various tissues in the body and that can include the heart and by direct infection by influenza of the heart muscle. But what is thought to be more common is that in the context of having had flu just at the time or recently, that the – there is an immune response set up in the body and that includes the heart and the heart – the muscle of the heart becomes inflamed as a post infectious immune response. We see that with a number of other infections.

36. Without dissent from his colleagues, Dr Day also noted that myocarditis is a very rare complication of influenza and is rarely seen by clinicians, except for those who work in an ED setting. Associate Professor Starr's opinion was that many adult physicians and paediatricians "would go through their careers without seeing it".[3]

37. Dr Festa noted that the severity of myocarditis is variable.[4] In Rozalia's case, the experts agreed that the myocarditis seen was "fulminant", which is a form of myocarditis that is "progressive and rapidly life-threatening", and it is even rarer than general myocarditis.[5] Associate Professor Starr added that influenza is one of the causes of severe fulminant myocarditis and is more common amongst young children.[6] He added that given heart

[3] A/Prof Starr, T528.23.
[4] Dr Festa, T528.27.
[5] Dr Festa, T528. 29.
[6] A/Prof Starr, T528.44.

failure is more common in adults than children, the list of diagnoses that will cause heart failure in children is “much smaller”, and “a viral cause will be higher on the list”.[7]

DIAGNOSIS

38. As to the diagnosis of myocarditis, the experts painted this picture:

> Probably the most salient sign is rapid heart rate, particularly if the heartbeat is not regular or there's something in terms of an arrhythmia, an abnormality of the heart rhythm. Congestion of the circulation with low blood pressure… The congestion aspect is an increase in the pressure in the veins returning blood to the heart, which manifests in different ways and can be quite subtle and difficult to pick up in children more so than in adults, who tend to be very compliant with clinical examination… One of the signs we do see is engorgement of the liver, which then is able to be felt outside of the rib cage and into the abdomen on examination, on direct palpation. It's not to say, however, that every cause of an enlarged liver is due to heart failure or cardiogenic shock, because it's definitely not.[8]

39. If the heart failure was seated on the left side, it is likely to manifest in breathlessness. If seated on the right-side, swelling of the liver or legs will be apparent, because of “the impaired venous circulation back to the heart”. If the failure is general, then both presentations will be manifested.[9]

40. According to the experts, the diagnosis starts with a carefully taken history and an assessment of physical presentation:

> [Diagnosis], starts with a careful history, and you might look and ask specifically about, if you're suspicious of myocarditis – about any palpitations or feeling of butterflies in the chest, for example. The history of lethargy and not having energy is important. Often there's a loss of appetite, and sometimes there's some gastrointestinal symptoms like vomiting or cramping or pain in the abdomen, because the gut is deprived of blood flow. …
>
> There are signs. We have mentioned the rapid heart rate. <u>We might pick up an irregular pulse. We might feel an engorged liver.</u> We might feel the quality of the pulses in the wrist or even the feet is – very difficult to feel the pulse, and they're termed as thready. <u>The patient will often look pale and they might feel clammy</u>. The blood pressure itself is often diminished in terms of the two components of the blood pressure. The systolic is often low, but one thing that we do see if we're carefully looking is that the difference between the top number and the bottom number, which we term the pulse pressure, is also somewhat narrowed in the worst cases, when there's significant left ventricular dysfunction in particular. So there are a number of signs.[10]

[7] A/Prof Starr, T529-530.
[8] Dr Festa, T530.8-22.
[9] Dr Day, T530.25-35.
[10] Dr Festa, T532.20-40.

41. The fact that influenza A is present is a diagnostic indicator of itself, but it is only a starting point.[11]

42. As to diagnostic tests, the "gold standard" is a myocardial biopsy, which is rarely done because it is very invasive.[12]

43. An ECG is an essential and routine part of the early investigative process for anyone with a suspected heart problem.[13] As Associate Professor Starr explained, an ECG is a test of the electrical pulse through the heart. That electrical pulse can be affected by various things, including a lack of oxygen to the heart and an inflammation of the heart muscle or the lining of the heart (pericarditis).

44. A troponin test was also identified as an important diagnostic tool. Elevated troponin levels can be an indicator of damage to the muscles of the heart. Dr Day explained that in this way:

> So troponin is a protein that's released by damaged heart muscle cells and it's – the most common time we'd see it in an emergency department is in adults who had a heart attack, that – so it's something that's very commonly measured in the emergency department, and doctors working in a mixed emergency department seeing adults are very familiar with the – with ordering troponins and interpretation of troponins. It's much less frequently ordered in the paediatric age group, but occasionally, as in this case, there are indications for it. [The troponin level] varies depending on the – on the test, but – and each laboratory will have its own particular range, but often the – a normal troponin, for instance, would be less than 14. So a troponin of 1,600 or thereabouts is a – is definitely abnormal troponin.
>
> Mr Fordham SC: In this case, it was 1,295. I take it that remains definitely abnormal.
>
> Dr Day: Yes.[14]

45. Associate Professor Starr explained the aggregation of those diagnostic factors in the following terms:

> For all of the thousands of cases we see, we rarely see myocarditis. But if you've got a positive influenza test and you've got an engorged liver and low blood pressure, and then an abnormal ECG, you think to do a troponin, that test of the protein from the heart, and if that was elevated, you've got your diagnosis confirmed.

TREATMENT

46. As to the treatment of myocarditis, Dr Festa gave a summary that was accepted by the other experts:

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[11] A/Prof Starr, T532.12-19.
[12] A/Prof Starr, T531.45.
[13] Dr Day, T531.20.
[14] A/Prof Starr, T533-534.

So initially, the treatment is mainly supportive… to help the heart pump as efficiently as it can to reduce the amount of work the heart muscle has to do. If you think of it like a muscle that's getting – is inflamed and injured and, therefore, not able to pump and maintain the effort in the normal way of doing the work of pushing the blood around the body, then, you know, we have to nurse a fatigued, injured heart through the phase to recovery. And so many of the things we do just enable the heart to squeeze as well as it can, make sure that the heart is full enough with blood but not too full, and allow the blood to move forward into circulation that accepts the flow.

And we control heart rhythm. We use drugs that we call inotropes which are directly affecting the squeezing potential and the capability and the strength of the squeeze of the heart muscle to assist the heart to pump adequately, but we don't force too much work onto the heart because it's already fatigued and can't take too much work. So just enough flow around the body to maintain adequate delivery of oxygen to all the parts of the body that need it, and we judge that carefully in the intensive care unit.

There are some direct therapies that are used for which there is a limited evidence base… steroids and immunoglobulins are definitely used to try and modulate the immune response, particularly in infectious causes of myocarditis. But as I think we've illustrated, the diagnosis is made carefully but the absolute cause isn't always apparent. A lot of the case(s) are idiopathic, like, we don't know the cause. So it's very difficult to know with certainty how best to address the underlying pathology or problem that the body's having that's causing the inflammation.

The final thing is, in patients that have the more fulminant course that we described earlier, a rapidly deteriorating course, unresponsive to treatments like inotropes and support with a ventilator… then we have the option in some cases to utilise mechanical support to take over the work of the heart,[15] and pump the blood around the body for the patient rather than relying on the heart to do that work, and that buys us a window for recovery or potential recovery.

None of these therapies guarantee a recovery. I think that's an important point. It really depends on the – the natural course of that particular person's illness and the direction that will take, and the degree of injury to the heart itself, and to other parts of the body that may or may not have been deprived of blood flow as to what final outcome we'd get, even with the extra corporeal membrane oxygenation support we might be able to use in some cases.

Mr Fordham SC: Is that otherwise known as ECMO?

Dr Festa: It is, yes.[16] [Emphasis added]

47. As to the administration of fluids when myocarditis is suspected, Associate Professor Starr summarised the view of the experts:

> Well, the administration of fluid is always indicated. Children need to have fluid, obviously, and if they are sick, they are often dehydrated so they need some fluid, but

[15] In these reasons, this is referred to as ECMO (extracorporeal membrane oxygenation) which is a modified prolonged cardiopulmonary bypass to support gas exchange, which allows the lungs to rest and recover (Oxford Concise Medical Dictionary). At the time of Rozalia's death, ECMO was available at Westmead Children's Hospital in Sydney. There was ad hoc availability of mobile ECMO outside of Sydney, including at Canberra Hospital. See Dr Festa, T592.39-43.
[16] Dr Festa, T534.14-535.15.

> fluid needs to be given with caution because the heart pump isn't… working. If you put fluid in, it can't be pumped around, and so… we need to give fluid [and] inotropes, medicines that help the heart pump instead of giving fluid, as well as giving smaller amounts of fluid.
>
> So you certainly give fluid. In fact, when a child's very sick, we might give what we call a bolus of fluid. You give a large amount of fluid to try to support the blood – the circulation as done with – in this case, and was appropriate initially, but you can't keep doing that if the heart's not pumping properly. You need to stop giving a whole lot of fluid and you need to give something to help the pump.[17]

PART 5 – THE STRUCTURE OF ROZALIA'S CARE ARRANGEMENTS AT TCH

48. The question of who had overall responsibility for Rozalia's care after she presented at TCH and whether clinical staff responsible for her care were appropriately qualified in paediatric medicine were issues central at the hearing.

49. Whilst witnesses spoke of Rozalia's care as being shared across clinicians and departments within TCH, as the analysis below highlights, that process did not always operate in a way that optimised clinical and diagnostic outcomes.

ED AND PAEDIATRIC ED

50. Whilst waiting to be assessed in the Emergency Department (ED), Rozalia was not formally admitted to the hospital. However, she was in the care of the ED. There were clinicians in the ED who were assigned responsibility for paediatric cases, and paediatric cases were generally accommodated in a separate area of the ED. Whilst the ED's paediatric space was not operational on all shifts, it was operational during Rozalia's admission. Clinicians attached to the care of paediatric cases in the ED did not necessarily have paediatric specialisation in their training.

51. It was open for a paediatric patient being assessed and treated in the ED to be admitted under the care of a paediatrician consultant if a doctor considered a longer stay in hospital was needed. This occurred in Rozalia's case, when she was admitted to TCH Paediatrics under the care of Dr Anne Mitchell, the on-call Paediatric Consultant. This occurred at around 0530 hours on 5 July 2022.

52. Two ED doctors were to play central roles in the early stages of Rozalia's care after her presentation to the ED.

[17] A/Prof Starr, T535-536.

Dr Tze Hao Wong

53. At the time of Rozalia's presentation, Dr Wong was working as an Emergency Registrar in the ED. He had been in that role for approximately one year. He had been working at TCH for close to 5 years as a Senior Resident Medical Officer, Resident Medical Officer, and Intern. He was working the night shift in the Paediatric ED and started work at 2230 hours on 4 July 2022. At the time, although Dr Wong was assigned to the Paediatric ED, he had no specific training in paediatrics.[18] Dr Wong's CV does not refer to paediatric experience of any kind. In evidence, he indicated that he had not received any paediatric training in his education as a doctor.[19]

54. On 5 July 2022, Dr Wong was the only doctor on duty overnight in the Paediatric ED. Whilst he received a handover for the patients in the Paediatric ED, he was not handed over information about Rozalia, as she had not been seen by a doctor by that point.

Dr Kate Watson

55. At the time of Rozalia's presentation, Dr Watson was employed by CHS as a Senior Registrar in the ED. She had a background by training and experience in Emergency Medicine and had been a Senior Registrar at TCH since February 2018. Dr Watson did not have specific paediatric training or experience.

56. On 4 July 2022, she commenced her shift at 2230 hours. As the Night Shift Registrar, Dr Watson's role was to oversee staff and patients in the whole of the ED, including the Paediatric ED. She described the primary focus of her role was to review patients in the acute (resuscitation) area of the ED, to attend (as requested) to care issues arising in relation to other ED patients, and to provide guidance to other ED doctors.[20]

PAEDIATRICS

57. There was also a general paediatric ward at TCH, which was physically separate to the ED. Children could be admitted to that ward through different channels, including from other areas within TCH (such as the ED or the ICU). Staff members of the general paediatric ward provided care directly to the children in the paediatric ward. Paediatric patients could also be admitted under the care of paediatric consultants, but remain physically located in other areas of TCH (such as the ED or the ICU). Paediatrics staff

[18] T70.5-9.
[19] T70.8.
[20] Statement of Dr Watson, Exhibit 1, 504.

also provided expertise which could be drawn on by other areas of the hospital (such as the ED or the ICU).

58. Rozalia remained physically in the ED, rather than being transferred to the general paediatric ward, because a bed in the general ward was not available[21], and, in any event, the acuity of her condition justified a level of care appropriately delivered in an ED setting, and diagnostic issues were thought to be better addressed in an ED setting.

59. In Rozalia's case, it was not always clear where the ultimate responsibility for clinical decision-making lay. The *Australasian College for Emergency Medicine* provides this guidance:

> At the point where an admission decision is made, handover of primary responsibility for care to another specialty service will occur, and a patient will depart the ED. Where a patient remains in ED pending transfer to an inpatient bed, the responsibility for clinical care is shared with the other specialty service (the 'admitting team'). The non-EM specialty service is responsible for ongoing definitive management plans, full medication review and reconciliation, specialist care and planning of non-ED procedures and investigations.
>
> While ED teams will assist in co-ordination where possible, the ED remains responsible only for primary management (assessment, commencement of initial therapies, documentation of interim medication, fluid, and clinical management orders so that a patient will receive appropriate care until inpatient team review) and ongoing immediate response to unanticipated sudden deterioration, where the ED team will provide immediate stabilization until the inpatient team can respond.[22]

60. Dr Day analysed care arrangements where paediatric cases were admitted to an ED in the following terms:

> Yes. So it's an extremely common occurrence in emergency departments, and it's probably more the rule than not that patients, after they have been admitted under a specialty, remain in the emergency department, and sometimes for many hours, and so every hospital has to have a system as to who is actually responsible for that patient. It's always going to be a shared care model because they're in the emergency department, but they're admitted, in this case, under a paediatrician. So both teams have some responsibility, but it's – at a hospital level, it needs to be decided who is responsible for what, and I agree with Associate Professor Starr that the patient is in the emergency department, so the emergency department still has primary responsibility for the patient, and that means that a doctor is actually allocated to that patient, including if there's a handover and one – the doctor who was initially looking after that patient leaves; another doctor has to have – be responsible for the patient in the emergency department. That said, the paediatric team also has responsibility for the patient, and often that is to do with their sort of major management decisions and ongoing care, and certainly it would be essential that if there's a change in condition of

[21] Statement of Dr Mitchell, Exhibit 1, 585[20].
[22] Australasian College for Emergency Medicine, *Responsibility for care in emergency departments* (Policy Guideline, March 2024) 4-5.

> a patient in the emergency department, who is admitted under a team, that that team is informed so that they can review the patient.[23]

61. Two paediatric doctors were central to the chronology of Rozalia's care in the early times of her care at TCH.

Dr Callum Jarvis

62. Dr Jarvis was working the night shift at TCH, commencing at 2130 hours on 4 July 2022 and finishing at 0830 hours the next morning. He was working at TCH as a locum General Paediatric Registrar. At the time of completing his statement on 30 March 2023, he was a second-year Royal Australian College of Physicians Advanced Trainee in general paediatrics, having worked in paediatric roles since 2017. At the time of Rozalia's admission to the ED, Dr Jarvis' role included caring for all children currently admitted to the paediatric wards at TCH (excluding Women's Health, Special Care Nursery and Neonatal Intensive Care Unit). He was asked initially to review Rozalia in the ED by Dr Wong, the ED doctor on duty at the time.

Dr Anne Mitchell

63. Dr Mitchell was a Senior Specialist Paediatrician. Dr Mitchell graduated with a Bachelor of Medicine and Bachelor of Surgery in the United Kingdom in 1986 and obtained her fellowship of the Royal Australian College of Physicians in 1999. She worked at TCH from 2014 to 2022.

64. On 4 July 2022, Dr Mitchell was the on-call paediatrician. Her on-call shift commenced at 0800 hours on 4 July 2022 and ended at 1200 hours on 9 July 2022. She was available to provide advice to the most senior doctors on duty.[24]

65. Rozalia was formally admitted under Dr Mitchell's care, under what Dr Mitchell called her "bed card".

INTENSIVE CARE UNIT ("ICU")

66. The ICU provides critical care at TCH, including life support and advice to other clinicians, who are, for example, considering transferring a patient to the ICU or who may be assisted by the specialised knowledge of an ICU clinician.

67. There was no paediatric ICU at TCH at the time of Rozalia's admission.

68. Two ICU doctors were important in the early phases of Rozalia's care.

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[23] Dr Day, T553-554
[24] Statement of Dr Mitchell, Exhibit 1, 583[6].

Dr Conan Hall

69. At the time of Rozalia's admission, Dr Hall was a doctor in the ICU. He was in his fourth year post graduation. In that period, he had specialised in Critical Care. He indicated in his statement that the ICU is primarily "an adult ICU" and "we have very few paediatric admissions and reviews".[25] Dr Hall was on shift commencing at 0730 hours on 4 July 2022 and ending at 0830 hours on 5 July 2022. He was the "Outreach Registrar", whose role involved taking referrals and reviews for potential admissions and seeing those patients to consider whether, in consultation with the Senior Registrar and ICU Consultant, they should be admitted to the ICU.[26] The Outreach Registrar also attended MET calls across the whole hospital.

Dr Abinesh Dhital

70. At the time of Rozalia's admission, Dr Dhital was a Senior Registrar in the ICU. He had been working in the ICU since 2021.[27] He qualified overseas, and his early experience included work in a surgical setting. His recent experience included working as an anaesthesiologist in NSW hospitals, and he had specialised in Emergency Medicine and Intensive Care during his time at TCH. He started his shift at 1930 hours on 4 July 2022 and was due to finish at 0830 hours the next day. On 5 July 2022, he had responsibilities for patients within the ICU and performed tasks associated with the ICU's outreach function. In his statement, he noted that there was no paediatric ICU at TCH, and that the ICU "has not usually admitted paediatric patients except in limited circumstances". He also stated, "I am not fully trained to look after very sick children in the ICU, as it is a separate sub-speciality of intensive care training". He went on to say, "whenever children are admitted to the ICU at TCH, their diagnosis and their treatment is managed (overseen) by the admitting specialist (paediatrics) from outside the ICU".[28]

ACCESS TO SPECIALISED PAEDIATRIC SERVICES IN NSW

71. In the later stages of Rozalia's care at TCH, treating clinicians were able to draw on the advice of specialised paediatric clinicians from the Westmead Children's Hospital in Sydney and to plan her transfer to Westmead. The Newborn and Paediatric Emergency Transport Service ("NETS") is an emergency service for sick or injured babies, infants, and children needing a transfer to one of the two specialist perinatal or paediatric hospitals in Sydney or John Hunter Hospital in Newcastle.

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[25] Statement of Dr Hall, Exhibit 11.6, 1.
[26] Ibid.
[27] Statement of Dr Dhital, Exhibit 11.11, 1.
[28] Ibid 2.

72. The service operates in NSW and the ACT. It has its own medical staff and a clinical co-ordination centre that enables retrieval specialists to give advice and engage in discussions with clinicians, including those at TCH, in respect of critically ill children who may need to be transferred to Sydney. The retrieval service operated by NETS enabled critically ill children, such as Rozalia, to be taken by helicopter to facilities in Sydney, including the Sydney Children's Hospital at Randwick and Westmead Children's Hospital, which have the clinical specialisations and equipment, including ECMO, to provide appropriate treatment in any such cases.

PART 6 – TRIAGING & ONGOING ASSESSMENT IN ED

73. Triaging is a process by which patients are treated in an order that reflects the acuity of their presenting condition when that acuity is time critical. The *Guidelines on the Implementation of the Australasian Triage Scale in Emergency Departments* ("the Guidelines") provides this summary of the triaging process:

> Triage is the first point of public contact with the ED. The triage assessment generally should take no more than two to five minutes with a balanced aim of speed and thoroughness being the essence. The triage assessment involves a combination of the presenting problem and general appearance of the patient, and may be combined with pertinent physiological observations. Vital signs should only be measured at triage if required to estimate urgency, or if time permits.

74. Under the guidelines, there are triage categories number 1 to 5, the applicable response times in respect of each category, a description of each category, and various indicative clinical descriptors. The category requiring an immediate medical response is Category 1. Relevant to Rozalia's case were Categories 2 and 3.

75. Under the guidelines, Category 2 applies to patients whose condition is imminently life-threatening, or who require important time critical treatment or is in very severe pain. The indicative clinical descriptors for this category include "fever with signs of lethargy (any age)". The response to someone assessed as Category 2 is assessment and treatment within 10 minutes.

76. Category 3 applies to patients whose conditions are potentially life-threatening, where there is potential for adverse outcome if time critical treatment is not commenced within 30 minutes or where "humane practice" mandates relief of severe discomfort or distress within 30 minutes. The indicative clinical descriptors for this category include "severe hypotension", "persistent vomiting", and "dehydration". The response to someone assessed as Category 3 is assessment and treatment within 30 minutes.

77. If a patient's condition changes whilst waiting for the treatment, or if additional relevant information that impacts on the patient's urgency becomes available, the patient should be re-triaged.[29]

78. Whilst waiting in the ED, nursing staff conduct observations of those awaiting assessment. In respect of paediatric cases, those observations form part of the Paediatric Emergency Warning Scale (PEWS) patient care record. The PEWS system used at TCH is a grading system designed to identify risks for clinical deterioration in paediatric patients. PEWS is made up of eight components, which are measured on a scale of 0 to 4 to create a score. The individual components recorded include observations of respiratory rate, heart rate, blood pressure, and temperature. An individual score of 4 requires an urgent response. The overall score also dictates the process and timing of escalation.

SAFETY NET PROCESSES WHEN TRIAGE RESPONSE TIMES NOT MET

79. Evidence given at the hearing indicated that whilst the health records system in place at the time had the capacity to notify or alert staff if patients were not seen within the time specified by the triage guidelines, those working on triage were generally too busy to follow up on any such alert or notification.[30] It is assumed that if alerts were raised on the night of Rozalia's presentation at ED, staffing pressures caused them to be ignored.

80. As of 4 July 2022, TCH had the position of a Clinical Initiatives Nurse (CIN) performing the roles similar to those described by the experts as being in place at other hospitals. The evidence did not reach the level of explaining, as a matter of job description, what the position actually entailed at TCH. The position was filled on the night of 4 July 2022, but only to 2130 hours. The evidence did not explain why the failure to adhere to the 30-minute response time did not result in any follow-up actions before the CIN finished their shift.

81. It is assumed that the CIN role at TCH followed the model that is adopted in other jurisdictions. The experts gave evidence of systems for the monitoring and reassessment of patients after triage and whilst in the waiting areas of the EDs of the hospitals at which they work. They were variously described as involving a CIN to keep observations in the waiting room, to be alert to deteriorating patients, and to perform tests like ECGs and blood tests and repeating observations. Dr Day also spoke of a role for a lay person, who primarily assists with wayfinding and directions, but can be

[29] *Guidelines on the Implementation of the Australasian Triage Scale in Emergency Departments*, Exhibit 1, 2532-2539.
[30] T351.1-5; 352.1-25.

approached by patients or parents if they are concerned about deterioration. Such processes exist at the Royal North Shore Hospital (and most EDs in NSW)[31] and the Westmead Children's Hospital.[32] Associate Professor Starr gave evidence of a rapid team at the Royal Children's Hospital in Melbourne, which consists of a consultant, a Registrar or Resident, and a nurse who would commence management and reassess.[33]

PART 7 – THE STAGES OF ROZALIA'S CARE

STAGE 1 – TREATMENT OF ROZALIA'S CONDITION BEFORE PRESENTING AT TCH

82. On 28 June 2022, Rozalia went to the Kingston Foreshore Medical Centre with her mother and was seen by Dr Khaleda Yesmin. She presented with a fever and headache and was diagnosed with an ear infection. Her temperature was normal, but her eardrums were inflamed. She was prescribed antibiotics.[34] Her mother's impression was that her condition improved. She appeared to have recovered by 2 July 2022.[35]

83. On 3 July 2022, Rozalia was lethargic, not her normal self, and unable to participate fully in her birthday party.[36] She was taken by her mother to the Canberra After-Hours Locum Medical Service on the evening of 3 July 2022, where she was seen by Dr Khaleda Edib and was prescribed an oral corticosteroid for a dry cough. Dr Edib made a differential diagnosis of a viral illness.[37] Her mother was told to continue with the antibiotics and to seek further advice if her condition worsened.

84. Overnight on 3 and 4 July 2022, Rozalia developed pallor, puffiness, a poor appetite, and lethargy, which appeared to have worsened.[38] Consistent with the advice given by Dr Edib, Rozalia's mother took her back to Dr Yesmin at the Kingston Foreshore Medical Centre on 4 July 2022. She was found to have a low-grade fever and tachycardia (that is, an elevated heart rate). She was described by her mother and the doctor as being unwell and unable to stand. Dr Yesmin described Rozalia as "refusing to walk"[39] and "unwell and refused to walk due to lethargy".[40] Dr Yesmin sent Rozalia and her mother to the ED at TCH.[41] Dr Yesmin referred Rozalia to TCH not because she felt her condition

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[31] T546.36-547.7.
[32] T547.30-37.
[33] T546.23-30.
[34] Exhibit 1, 169-170. See also T51.35-40.
[35] Statement of Katrina Spadafora, Exhibit 1, 924[252].
[36] T22.23.
[37] Exhibit 1,172. See also Statement of Dr Edib, Exhibit 1, 178-179, 180-181.
[38] Katrina Spadafora, T23.
[39] Statement of Dr Yesmin, Exhibit 1, 169.
[40] Supplementary statement of Dr Yesmin, Exhibit 1, 171. See also TCH Clinical Notes - Kingston Foreshore Medical Centre, Exhibit 1, 162; and Katrina Spadafora T22.35-45.
[41] Exhibit 1, 161-162. See also Exhibit 1, 169-171.

was critical, but because she felt that Rozalia needed further testing, and it was likely that it would be done more quickly if she was in a hospital setting.[42]

85. Dr Yesmin did not provide a referral letter, nor did she phone the hospital to advise that Rozalia would be arriving. Dr Yesmin said that she could have written a letter to set out her concerns,[43] and that it would probably have been helpful to inform the hospital of what she wanted and why she wanted it done.[44] However, in the end, she thought it would not have made a difference, as Rozalia would be triaged at TCH in any event.[45] She said that she assumed Rozalia would be triaged promptly.[46]

86. Although not explored in any detail in the evidence, there was a reference to an email system known as "HealthLink",[47] which is available to community clinicians referring patients to TCH. However, Dr Yesmin indicated that she was not aware of the CHS' general advice that GPs sending letters to the ED, either in advance, or with patients, was a good idea.[48]

Expert Review of Pre-TCH care

87. The experts made no criticism of the care provided by the GPs who were consulted.

88. The failure to send an accompanying letter was unlikely to have changed the course of events. The evidence of Dr Day was that whilst a referral letter from a GP is "very useful",[49] he did not believe a letter or phone call would have changed the triage category or treatment given to Rozalia. [50] Associate Professor Starr noted that:

> not only does information from the GP or the community not replace the triage, but it doesn't replace taking a clear history for one's self and making your own assessment …[51]

STAGE 2 – ADMISSION TO TCH, TRIAGE AND TREATMENT UNTIL 0016 HOURS

89. Rozalia was taken to TCH by her mother. She arrived shortly after 1900 hours,[52] and was triaged in the ED at 1940 hours.[53]

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[42] T59.5-10. See also Katrina Spadafora T24.25-35.
[43] T57.17-18.
[44] T58.18-20.
[45] T58.2-4.
[46] T 61.20-25.
[47] T62.10-12.
[48] T60.5-10.
[49] T582.5-9.
[50] Supplementary report of Dr Day, Exhibit 4, [9].
[51] T582.24-27.
[52] Katrina Spadafora, T24.43.
[53] TCH Clinical Notes, Exhibit 1, 223.

90. Katrina's impression was that the ED did not seem very full. However, this did not reflect the reality for those working on the ground. On 4 July 2022, RN Manda De Ramos was undertaking, amongst other duties, triaging duties. Her evidence was that triage was busy on the evening of 4 July 2022,[54] and the statistical evidence provided by the Territory confirmed the accuracy of RN De Ramos' impression.

91. When spoken to by nursing staff, Katrina outlined Rozalia's medical history at some length, including that she had not been walking.[55] The nursing assessment relevantly recorded the following:

> "Child is not drinking and eating much. Child more lethargic.

92. Rozalia was triaged as a Category 3 patient, which should have had her seen by a medical officer within 30 minutes.[56] The experts regarded this triage categorisation as reasonable.

93. However, Rozalia was not seen by a doctor until about 0016 hours the next day, almost 5 hours later.[57]

94. In Rozalia's case, observations were taken at the time of triage at 1940 hours. Rozalia's temperature was recorded as 36.4°C, her pulse was 121, and her respiratory rate was 28.

95. Observations were taken again at 2155 hours. By that time, Rozalia's temperature was 37.9°C, her heart rate was 139, and her respiratory rate was 38. Those results led to an overall PEWS score of 3.

96. Rozalia's blood pressure was not taken on arrival at triage, notwithstanding the fact that blood pressure was part of the PEWS escalation matrix. At the hearing, views differed as to that practice:
    (a) RN De Ramos indicated that she seldom takes the blood pressure of a child;
    (b) Dr Jarvis was the Paediatric Registrar on duty that night. He commenced his shift several hours after Rozalia presented to the ED. He gave evidence that, in his view, a blood pressure reading should have been taken on admission, and that this is routine at a number of sites where he works;[58] and

[54] T353.45-354.5.
[55] T25-26.
[56] Expert report of Dr Day, Exhibit 1, 2523-2534, 2537.
[57] Statement of Dr Wong, Exhibit 1, 419-420[12]. See also Exhibit 1, 403.
[58] T107.11-16.

(c) The expert evidence was that it is not unusual for blood pressure not to be taken, due to the limited time available at triage and that it can be confronting and uncomfortable for a child to have blood pressure taken.[59]

97. Dr Jarvis was also of the view that blood pressure should have been taken at 2155 hours, given the change in the recorded observations.[60]

Experts Review of Blood Pressure Testing

98. Even in the context of treatment delays in busy EDs, there are opportunities for triage categories to be changed and for priorities for treatment to be recalibrated. The experts agreed that it is trends in observations that are important.[61]

99. Expert evidence suggested that blood pressure should have been taken at 2155 hours, based on the outcome of the other observations taken at the time.[62] If nothing else, it was relevant to a proper determination of the PEWS score.[63] The experts further considered that, in light of the observations recorded at 0420 hours the next day, and the fact that Rozalia's blood pressure was low when first taken at that time, her blood pressure would likely have been similarly abnormal at 2155 hours, if it had been taken at that time.

100. Had a low blood pressure been recorded at 2155 hours, that would have elevated the PEWS score to at least 4 and required notification to the Team Leader and a review by a Resident Medical Officer within 30 minutes.

101. Even without the blood pressure having been taken or factored into the PEWS assessment, the trending change in observations taken at 2155 hours and the length of time Rozalia had been waiting could reasonably have led to an escalation in the triage Category to 2, which should have had Rozalia seen by medical staff much earlier.[64]

STAGE 3 – FIRST REVIEW BY A DOCTOR AT 0016 HOURS TO HER SECOND REVIEW AT 0420 HOURS

102. Dr Wong was the first doctor to review Rozalia at 0016 hours. He had no specific training in paediatric medicine.[65]

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[59] T541.17-29.
[60] T108.15-17.
[61] T544.10-17; T545.1-7.
[62] T541.39-T542.27.
[63] T544.7-8.
[64] T544.20-37. See also expert report of Dr Day, Exhibit 1, 2524[48].
[65] Dr Wong, T70. 6-8.

103. Prior to his assessment, Dr Wong had seen Rozalia in the waiting room prior to midnight. He described Rozalia as looking tired and "virally", and that she "looked like a child who looked unwell with a viral infection".[66] He pre-emptively ordered a trial of oral fluids. [67]

104. On review at 0016 hours, Dr Wong considered that Rozalia was dehydrated. He recorded in his retrospective clinical note, written at about 0400 hours, that it was at a level of 5 to 10%.[68] He gave evidence that this was based on an assessment tool from the Royal Children's Hospital.[69] On review of the assessment tool whilst giving evidence, Dr Wong said that the estimate should actually have been 5 to 9%.[70] This was described by Dr Wong as moderate dehydration.[71]

105. Dr Wong's clinical note does not record his observations with respect to a viral infection.[72] The plan, as recorded, was simply "paed's review and bloods". Whilst Dr Wong did have regard to the triage observations, he did not look at the general observations chart for observations recorded at 2155 hours prior to reviewing Rozalia at 0016 hours.[73]

106. Dr Wong was unable to recall the content of his conversation with the paediatric doctor he spoke with at 0200 hours, who, as it later became clear, was Dr Jarvis. He was uncertain as to whether he had told Dr Jarvis that he thought Rozalia most likely had a viral illness. Similarly, Dr Wong was unable to recall whether he had told Dr Jarvis about Rozalia's vital signs.[74] Dr Jarvis did not recall having any discussions about Rozalia's vital signs.[75] Dr Wong did not draw Dr Jarvis's attention to what was recorded on the general observations chart,[76] which showed, in part, a deterioration in Rozalia's condition from triage to the time of his review.

107. Whilst he did tell Dr Jarvis that Rozalia was tachycardic and tachypneic (that is, rapid breathing), it is likely Dr Wong did not inform Dr Jarvis, the Paediatric Registrar, of his suspicion of a viral illness or Rozalia's vital signs.

108. Dr Wong did not consider taking Rozalia's blood pressure.

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[66] Statement of Dr Wong, Exhibit 1, 419[10].
[67] T77.15-20.
[68] TCH Clinical Notes, Exhibit 1, 226.
[69] T91.18.
[70] T91.26.
[71] T101.35-37.
[72] TCH Clinical Notes, Exhibit 1, page 225.
[73] T75.23-33.
[74] T83.26-27.
[75] T106.45.
[76] Exhibit 1, 286.

109. Dr Wong ordered a change to IV rehydration, because Rozalia was vomiting. Consequently, there was a danger of aspiration with a nasogastric tube in place, and because he had to take bloods anyway (and therefore could insert a cannula which could also be used for rehydration).[77] Dr Wong also engaged with the paediatric team at around 0200 hours to refer Rozalia for further review.[78]

110. Dr Wong gave evidence of the difficulty he had in obtaining blood from Rozalia,[79] and that part of the reason to rehydrate her was to assist in obtaining blood.[80]

111. Intravenous fluids were commenced at 0410 hours, following Dr Wong's review. There was an initial improvement in the acidosis and lactate levels following the delivery of fluids.[81] That did not continue.

Expert Review of Dr Wong's Assessment

112. The experts reviewed Dr Wong's assessment. They agreed that it was reasonable to suspect a viral illness as the cause of Rozalia's symptoms, although that suspicion was not recorded.[82] Dr Festa noted that whilst there was a level of concern and a plan to refer, due to the paucity of the notes, it was difficult to understand what Dr Wong's thought processes might have been. There could have been any number of causes for Rozalia's symptoms.[83] There was no mention of the observations done or their abnormality.[84] There was no differential diagnosis or any list of possible diagnoses;[85] "it's very much about referring into the specialist team for further assessment and doing blood tests".[86]

113. The experts agreed that blood pressure should have been taken at that point.[87] They agreed that not much had been done since the previous review at 2155 hours. A nasal swab that occurred just after 0400 hours could have been done earlier.[88]

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[77] T102.10-16.
[78] Exhibit 1, 422[22].
[79] T83.28-31.
[80] T84.9-16.
[81] In a dehydrated child, improvements in acidosis and lactate levels after IV fluids suggest that fluid replacement was helping to restore blood circulation, oxygen delivery, and blood pH balance.
[82] T548.44, 549.11, 549.17 and 549.29.
[83] A/Prof Starr, T549.35.
[84] Dr Day, T548.23.
[85] T549.17-24.
[86] Dr Festa, T549.24.
[87] T550.24-33.
[88] Dr Day, T549.40.

STAGE 4 – FIRST PAEDIATRIC REVIEW AT 0420 HOURS TO THE END OF SHIFT AT 0830 HOURS

114. A number of treatment decisions that were made in this period were central to the course of Rozalia's care.

115. Rozalia was reviewed by Dr Jarvis, the Paediatric Registrar, and Dr Kevin Tee, a Resident Medical Officer (RMO) at 0420 hours.

116. A venous blood gas result was available at 0345 hours. It revealed a lactate of 4.9,[89] which was consistent with poor perfusion.[90] Dr Jarvis took the first blood pressure measurement during his examination at 0420 hours. He recorded a blood pressure of either 71/41[91] or 71/54[92] – either reading was accepted to be low.[93] Dr Day described it as "significantly below normal".[94] Tachycardia was present. Dr Jarvis found an enlarged liver.[95] He agreed that a cardiac cause for the enlarged liver should be considered in the presence of hypotension and tachycardia,[96] and it was that consideration that led to his request for an ECG between 0545 and 0550 hours.[97] The ECG took place at 0652 hours.[98] Dr Jarvis gave evidence as to his thinking in requesting the ECG:

> Thank you. Now, you mentioned before the ECG and the troponin?---Yes.
>
> Now, I just want to deal with those in order. Firstly, which of those two was considered first? Or were they considered together?---I had been considering doing the ECG with the ongoing heart rate, and then we – when I had a discussion with the emergency doctor, she suggested and I agreed that we should do a troponin test as well.
>
> All right. I'll deal with them in order. What was your thinking around the need to perform an ECG?---So the – the main thinking around an ECG is to look for in the – in this situation, <u>things such as myocarditis or pericarditis or pericardial effusion, so the inflammation of various layers of the heart.</u>
>
> And I think you said that the ED doctor – and I take it you mean the female senior registrar - suggested the troponin?---Yes. The troponin, yes.
>
> And what is the reasoning or why would you---? ---That's similar. That is---

[89] TCH Clinical Notes, Exhibit 1, 233.
[90] Expert report of Dr Day, Exhibit 1, 2520[13].
[91] Statement of Dr Jarvis, Exhibit 1, 560[15(b)].
[92] TCH Clinical Notes, Exhibit 1, 286.
[93] T110.35-47.
[94] Expert report of Dr Day, Exhibit 1, 2520[17].
[95] T113.20-26.
[96] T113.27-30.
[97] Statement of Dr Jarvis, Exhibit 1, 561[22]-[24].
[98] TCH Clinical Notes, Exhibit 1, 283.

> Sorry. Why would you test troponin?---The main reason in this instance is looking for myocarditis.[99]

Expert Review of Dr Jarvis' Assessment

117. Dr Festa said that the examination undertaken by Dr Jarvis was "thorough",[100] and it was an "overall good and timely intervention that was required to try and understand better that Rozalia had a significant problem that needed more urgent attention than she'd previously got in the Department…" [101] However, in retrospect and knowing what Rozalia was suffering from, Dr Festa thought that the constellation of low blood pressure, rapid heart rate, and a large liver should have provoked an alternative diagnosis of a heart that was not able to work properly.[102] He did not suggest that that should have been "the first diagnosis", but it was the "beginning of a constellation of signs that might point you to that way of thinking".[103]

118. Dr Day thought the assessment was good and that reasonable first steps were taken.[104]

Dr Jarvis and Dr Tee's Second Review at 0530 Hours

119. At about 0527 hours, Rozalia was moved to Resuscitation bed 2 in the ED.[105]

120. Rozalia was seen by Dr Jarvis and Dr Tee again at 0530 hours. By that time, blood tests that were available showed, amongst other things, a white blood cells count of 4.3, neutrophils of 2.52, and lymphocytes of 1.35.

121. The lactate had reduced from 4.9 to 3.9. Whilst the downward trend was good, the result of 3.9 was still very high.[106]

122. Dr Jarvis agreed that the white blood cells count and lymphocytes were consistent with an underlying viral infection,[107] and he commenced antibiotics in an effort to address potential sepsis.[108] After consulting with Dr Mitchell, he also requested an ICU review and noted that bloods/cultures test results were to be chased and urine was to be tested.

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[99] T121.7-27.
[100] T552.19.
[101] T552.21-24.
[102] T552.37-39.
[103] T552.40-43
[104] T553.11. The differential diagnosis of a heart-related issue is consistent with Dr Jarvis' ordering of an ECG.
[105] TCH Clinical Records, Exhibit 1, 401.
[106] T555.25.
[107] T114.30. See also expert report of Dr Day, Exhibit 1, 2520[18].
[108] Statement of Dr Jarvis, Exhibit 1, 561[25].

123. Following the initial delivery of 190mL of intravenous fluids at 0400 hours, further fluid boluses of 190mL were delivered at 0430, 0520, and 0545 hours. 1000mL (at 110mL/hour) were initiated at 0640 hours. 200mL were delivered at 0730 hours.[109]

Experts Review of Dr Jarvis' Clinical Decision Making

124. Dr Day thought the plan to commence an IV broad spectrum antibiotic, to repeat a fluid bolus, and to seek ICU review was reasonable.[110] Dr Festa said that ICU needed to be asked if inotropic support was warranted.[111] Dr Festa gave evidence that, over the course of the morning of 5 July 2022, Rozalia eventually received more than 40mL/kg of fluid, which was in excess of what she required and may have caused some degree of harm.[112]

The Addition of Troponin and the First ICU Attendance

125. At 0610 hours, Rozalia's PEWS score was recorded as 6.[113]

126. Dr Kate Watson had a conversation with Dr Jarvis at approximately 0630 hours, during which she suggested the addition of troponin and creatine kinase to the blood tests that were being processed at the time.

127. Dr Watson gave evidence that she suggested the addition of a troponin test to exclude the potential of influenza myocarditis,[114] but that because it was a rare diagnosis, she was not expecting the test to come back as positive.[115] That request appeared to have been received in the TCH pathology laboratory at approximately 0644 hours.[116]

128. Dr Watson's expectation was that the result would be back within an hour, or an hour and a half.[117] Associate Professor Starr said that he would expect a troponin result within 60 minutes. Dr Day gave evidence that the benchmark was 60 minutes, and that he would expect the result within 90 minutes. Dr Festa said that he would be happy with 90 minutes.[118]

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[109] TCH Clinical Records, Exhibit 1, 336.
[110] T556.1-6.
[111] In oral evidence, Dr Festa referred to 20mL/kg of fluid as having been delivered (T557.7-1), however in his report he refers to 10mL/kg (see expert report of Dr Festa, Exhibit 1, 2635), which accords with Dr Day's expert report, Exhibit 1, 2520[16].
[112] T583.5-15. See also expert report of Dr Festa, Exhibit 1, 2636[2].
[113] TCH Clinical Records, Exhibit 1, 286.
[114] T299.12-14.
[115] T303.6-11.
[116] Exhibit 1, 393. See also T309.7-8.
[117] T307.8-11.
[118] T570.7-18.

129. Dr Tee checked the system for the blood test results at 0552, 0556, 0558, 0612, 0644, and 0736 hours.[119]

130. At the conclusion of his review at about 0530 hours, Dr Jarvis contacted Dr Mitchell, who was the Paediatric Consultant on duty. He called at about 0550 hours. His recollection of what he told Dr Mitchell was:

> So the – my – the purpose of the phone call was to relay my concerns and also to request that she review Rozalia. So the information I relayed was that she was – the history, the story that I got from the family that she was a 5-year-old girl, the story of the preceding week that I'd been given, as well as the clinical examination and then the – and investigations that I had available at the time. And I then asked that Dr Mitchell review the – review Rozalia, which she agreed to and probably did a review.

131. Amongst other things, Dr Mitchell requested that Dr Jarvis seek a review by the ICU.[120] Her reason for doing so was because although Rozalia had been administered "40mL/kg IV fluids", she remained hypotensive and potentially required inotropic supports.[121] Inotropic therapy is used to modify the contractions of the heart in a way to increase blood pressure,[122] and it can be used when the administration of fluids has not sufficiently raised blood pressure or improved perfusion. In that way, the therapy can relieve pressure on the heart.

132. According to Dr Jarvis, such review was requested. Dr Abinesh Dhital and Dr Conan Hall, the ICU Outreach Registrar, came to where Rozalia was in the ED. Dr Jarvis' recollection was that he met the two doctors outside the room. He outlined his concerns to them:

> My concerns were that Rozalia was still continuing to be at low – continue to have low blood pressure and high heart rate despite our treatment and that the next potential level of treatment that she may require would be medication to support the heart and that was why I was wanting their involvement.[123]

133. The ICU doctors in turn requested that the Consultant Paediatrician review Rozalia before they would become involved.

134. It was Dr Jarvis' impression that the ICU doctors were going to return after that had happened.[124]

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[119] Statement of Dr Tee, Exhibit 1, 575[19].
[120] T123.26-28.
[121] Statement of Dr Mitchell, Exhibit 1, 584[15].
[122] Though noting the danger associated with infusing too much fluid is that it causes hypervolemia (fluid overload) and places greater burdens on the heart to push blood around the body.
[123] T124.10-14.
[124] T124.1-7.

135. Dr Jarvis did not see an ICU doctor review or examine Rozalia.[125] Dr Jarvis said in evidence that he later informed Dr Mitchell that the ICU had not clinically reviewed Rozalia, and that they indicated they would attend to Rozalia after Dr Mitchell had reviewed her first, as that was the impression he had formed during his conversation with them.[126]

136. Dr Hall and Dr Dhital gave evidence that they attended, but did not examine, Rozalia, nor did they check the available records and results.[127] Dr Dhital said that the ICU were not actually requested to attend, but they went to see Rozalia in case she needed ICU care later.[128] They formed the impression that they were not required to do more than attending, pending a review by the Paediatric Consultant (that is, Dr Mitchell).[129]

137. Dr Hall gave evidence that a "proper review" of Rozalia by ICU clinicians would have included taking a history, an examination, and looking through the investigations and observations, as well as looking at the pathology results.[130]

138. Dr Dhital gave evidence that "admitting a paediatric sick patient into the ICU is always out of [their] comfort zone".[131] Dr Hall said he was not experienced with paediatric patients.[132]

139. Dr Mitchell, who was ultimately directing treatment, gave differing accounts as to what she was told about the ICU review or whether she was under the impression that an ICU review had occurred as requested.[133]

140. In the first of the three documents recording Dr Mitchell's version of events,[134] Dr Mitchell recorded the following:

> Dr Jarvis informed me that the ICU Registrar had reviewed Rozalia, that he had no suggestions to make with regards to further management and felt that ICU care was not required. I was told that an ICU Registrar would await my review.

141. In her second statement, Dr Mitchell added:[135]

> [I said] What do they mean by that? Are they going to take her to ICU? Did they make any suggestions about management? Dr Jarvis said ICU did not feel they had anything

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[125] T124.15-20.
[126] T125.29-32.
[127] T440.5-10.
[128] T437.30-40.
[129] T441.7-10.
[130] T425.1-14.
[131] T437.37.
[132] T423.1.
[133] T159.18-19.
[134] Exhibit 6, page 2, para 2.
[135] Statement of Dr Mitchell, Exhibit 1, 2659[10].

further to offer in terms of management and did not feel that she required admission to the ICU.

142. There was no clinical note from the ICU to inform Dr Mitchell or anyone else of what, if any, review had taken place. With the benefit of hindsight, Dr Mitchell agreed that in light of the absence of a note indicating what the ICU had thought or planned, she should have followed up with the ICU.[136] Dr Mitchell maintained in her evidence that had she been told by Dr Jarvis that the ICU doctors were awaiting her review before they would become involved, she would have contacted the ICU.[137]

The Experts Review of the ICU Consultation

143. The experts attached some significance to the ICU's failure to undertake the requested review.

144. Dr Day thought that it was unusual that the ICU doctors attended but did not review Rozalia.[138]

145. Dr Festa thought that when someone had "gone to the trouble of notifying the ICU" of a patient with low blood pressure, it is incumbent on the ICU to perform a full assessment, whether they have been asked to do so or not.[139] In his view, inotropic therapy should have been specifically discussed and documented, following a full assessment.[140] By necessary implication, Dr Festa regarded the failure by the ICU to assess Rozalia as a "missed opportunity" to have considered additional or alternative causes of the hypotension and shock, including cardiogenic shock[141].

146. Associate Professor Starr said that he would have expected a thorough assessment and a plan.[142]

147. The experts' criticisms in this context were accepted by senior clinicians and administrators at the hearing. Dr Simon Robertson, the ICU Consultant who became involved in Rozalia's care on 5 July 2022, also gave evidence that he would have expected the ICU Registrars to:

    (a) check the notes at some point;

    (b) see what, if any, pathology results were available; and

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[136] T160.36-42.
[137] T 191.5-20
[138] T559.31-36.
[139] T558.25-28.
[140] T558.43-45.
[141] Expert report of Dr Festa, Exhibit 1, 2640. These comments were directed at what he thought was an undocumented review.
[142] T559.19.

(c) examine the child "in most instances".

148. Dr Samuel Scanlan, Senior Staff Specialist in Emergency Medicine at TCH and Clinical Director for the ED at CHS, gave evidence at the hearing. He conceded that *generally* there had been "some discomfort" on the part of ICU staff becoming involved in paediatric cases.[143]

Review of the ECG

149. Dr Jarvis reviewed the ECG trace[144] at about 0655 hours.[145] At the time, he did not interpret it to disclose significant abnormalities, other than an elevated heart rate.[146] In oral evidence at the hearing, Dr Jarvis was of the view that the ECG was consistent with a diagnosis of myocarditis-pericarditis.[147]

150. Whilst the clinical notes did not refer to it,[148] Dr Mitchell gave evidence that she reviewed the ECG,[149] presumably at the time of her review at 0730 hours. Dr Mitchell said that she thought the ECG "felt to be normal".[150] Dr Mitchell gave evidence at the hearing that she had been mistaken and was now of the view that the ECG was not normal and was consistent with pericarditis.[151] Given it was consistent with pericarditis, she said it "should alert you to the fact that there may be underlying myocarditis".[152]

151. Dr Robertson, the ICU Consultant who eventually took over Rozalia's care, agreed that the ECG showed abnormalities that were suggestive of cardiac issues.[153]

Expert Review of the ECG

152. Dr Day and Associate Professor Starr agreed that the ECG trace was consistent with pericarditis.[154]

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[143] Dr Scanlan, T 618.1-7.
[144] T121.29.
[145] TCH Clinical Notes, Exhibit 1, 283.
[146] T121.36-38.
[147] T121.434-44.
[148] TCH Clinical Notes, Exhibit 1, 230-231.
[149] T162.38.
[150] Statement of Dr Mitchell, Exhibit 1, 584[17]; see also T163.1-6.
[151] T163.15-27.
[152] T163.33-34.
[153] T377.16-17.
[154] Expert report of Dr Day, Exhibit 1, 2521[21]. Supplementary report of A/Prof Starr, Exhibit 1, 2610[6.4]. See also T564.43-T565.7, T565.34-36 and 40-45.

153. Associate Professor Starr explained that “myocarditis and pericarditis occur in a continuum. Inflammation of one [the pericardium] frequently results in or includes inflammation in the other [the myocardium].”[155]

154. Dr Festa described the abnormality on the ECG as “clear when you are looking for it” and stated that the person looking at it was not experienced enough or not looking for it because it was not listed in the differential diagnoses.[156]

155. He went on to say:

> So I can imagine people coming to the bedspace and not looking for the problem that is shown on the ECG. But the ECG's been done or ordered by someone for the purpose of looking for this thing but that's – there's no continuity in the thinking. So there's a disconnect between the investigation and the primary caregivers in this case, in my opinion.[157]

Dr Mitchell’s first review at 0725 hours

156. Dr Mitchell examined Rozalia at approximately 0725 hours.[158] Her findings included an enlarged liver.

157. Dr Mitchell did not appear to have been made aware that a troponin test had been ordered,[159] nor was she aware that a positive result for influenza A was available at approximately 0734 hours, at about the time her review.[160] Dr Jarvis and Dr Mitchell did discuss outstanding test results just after her review of Rozalia.[161]

The influenza A result

158. A positive result for influenza A was available at 0734 hours.[162] Dr Jarvis was aware of the result by the time of the paediatric handover, which occurred between 0800 and 0830 hours.[163] He gave evidence that the result increased the likelihood of myocarditis.[164] Dr Jarvis and Dr Tee gave evidence that the influenza A result was handed over to the incoming day shift of Dr Mitchell and Dr Jade Stewart.[165]

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[155] Expert report of A/Prof Starr, Exhibit 1, 2610[6.4].
[156] T590.14-23.
[157] Ibid.
[158] TCH Clinical Notes, Exhibit 1, 230.
[159] T126.37-41
[160] T164.35.
[161] Exhibit 1, 2663[25].
[162] Exhibit 1, 350.
[163] T122.40.
[164] T122.41-44.
[165] T138.40, T139.5 and T143.40.

159. Dr Mitchell became aware of the result at some time between 0800 and 0830 hours.[166]

160. Dr Stewart was made aware of the result during the handover.[167]

Expert View as to the influenza A Result

161. Associate Professor Starr described this result as an "extra piece in the puzzle" to try and work out what was going on.[168]

162. Dr Day suggested the result explained the pattern of the illness Rozalia had suffered, but it did not resolve the question of whether there were other things going on, such as a complication of influenza.[169]

163. Dr Festa referred to the result as opening up a list of potential complications of influenza that might come into play, which included myocarditis.[170]

STAGE 5 – THE HANDOVER PROCESS

164. At the end of the night shift, the night shift clinicians provided a "handover" of information relevant to the ongoing care of the patients in their care. A handover occurred in each of the Departments that were involved in Rozalia's care.

165. The passages that follow are broken into two parts. Part A deals with the handover process and the information about Rozalia that was communicated. Part B addresses what the diagnosis of Rozalia's condition should have been at the time of the handover.

Part A – the Information Handed Over

The ED

166. The evidence suggested that the information that was available at the time of the handover was siloed and not passed on in a cohesive or co-ordinated way.

167. According to Dr Wong, he handed over to Dr Kirsty Dunn.[171] The plan at that point was to treat Rozalia for dehydration. A differential diagnosis of myocarditis was not mentioned.[172] Dr Wong was not aware of the outstanding troponin test,[173] or the

[166] T164.25.
[167] T483.17-18.
[168] T564.12-14.
[169] T564.27.
[170] T564.34-37.
[171] T92.25-28.
[172] T92.33-40.
[173] T92.41-43.

influenza A result by the time of the ED handover.[174] In his view, there was a joint responsibility for Rozalia's care as between the ED and the paediatric team.[175]

168. Dr Watson said she handed over to Dr Amy Ting and Dr Dunn.[176]

169. Dr Watson said that she handed over patients in general, rather than specific patients to specific doctors.[177] At the time of handover, Dr Watson was unaware of the influenza A result.[178]

170. Dr Watson's evidence was that her handover included information that Dr Jarvis had managed to rehydrate Rozalia, that Rozalia had appeared to improve, and that she had requested troponin and creatine kinase add-ons to the usual blood tests. She also stated at the handover that Dr Mitchell had seen Rozalia, and that the ICU were involved.[179]

171. Dr Watson considered Rozalia to be the responsibility of both the ED and the paediatric team, referring to a "shared care model" with escalation in care to either herself in charge of "Acute and Resus" in the ED,[180] or Dr Jarvis from the paediatric department.[181]

172. In oral evidence, Dr Watson qualified her description of "shared care" and suggested that, in her view, Dr Jarvis was primarily looking after Rozalia overnight, despite the fact that she was located in the ED, as he was there nearly every time Dr Watson went through Resus. She considered that someone would notify her to assist Dr Jarvis if Rozalia became acutely more unwell.[182]

173. Dr Watson said that under a shared care model, she would have expected that an increase in the PEWS score to 6, as first occurred at 0610 hours,[183] would have been escalated to either the ED or paediatric clinicians, depending on who was available.[184]

174. It was not clear from her evidence who was to follow up on the troponin results.

175. According to Dr Ting, Dr Watson handed over that Rozalia had a suspected infection, was quite unwell, received multiple boluses of IV fluids, had been reviewed by the ICU

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[174] T86.35.
[175] T90.35-40.
[176] Statement of Dr Watson, Exhibit 1, 506[15]. See also T299.41-43.
[177] T299.45 – T300.1.
[178] T300.42-43.
[179] Statement of Dr Watson, Exhibit 1, 506[15].
[180] The "Acute and Resus" area is a specialised section for patients requiring immediate and intensive care. The Acute section handles individuals with serious but not immediately life-threatening conditions, whilst the Resus area is reserved for critically ill or injured patients who require urgent life-saving interventions.
[181] T301.32-38.
[182] T302.4-15. See also statement of Dr Watson, Exhibit 1, 506[18].
[183] Exhibit 1, 286.
[184] T301.40-44.

(but was unaware of what had occurred during that review), [185] that the paediatric team was waiting for Rozalia to go to the paediatric ward, and that troponin testing had been requested.[186]

176. Dr Dunn confirmed that Dr Watson handed over the patients from the night to the day shift, including Rozalia, but had no memory of what was said.[187]

177. Dr Dunn confirmed that patients were handed over to "us all, and then when we think it's our patient, we take that hand – receive that handover".[188]

178. Dr Dunn had no recollection of hearing any discussion about troponin at handover.[189] She did, however, have a recollection of hearing about Rozalia's blood pressure and the administration of fluids from Dr Wong.[190]

179. Dr Dunn did not think she received any information about blood tests, but that a differential diagnosis of bacterial sepsis was discussed.[191]

180. Dr Dunn recalled Dr Wong saying that Rozalia was the sickest child he had looked after,[192] and that "she'd been hypertensive (sic) and tachycardic in the middle of the night and that he'd treated her with fluids and antibiotics, but she had picked up and paeds were there, I think ICU were there and that she'd turned a corner and things were, in [his] mind, responding".[193]

The ED – the Allocation of Patient Care Day Sheet

181. The ED maintained a "day sheet", which was a one-page document indicating the allocation of doctors to locations and beds within the ED for any given day and evening shifts. It was kept at what was called the "flight deck" in the ED. The ED day sheet for 4 and 5 July 2022 was provided to the Court as an annexure to the statement of Dr Ting.[194]

182. The day sheet indicating the allocation of beds and areas to particular doctors was internally inconsistent. It was evident on the face of the document that "Resus beds 1+2" were listed against both the "A-South Leader", noted in the table at the top of the page, who, on the relevant day, was Dr Ting, and also against the "A-North Consultant" by

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[185] T202.39.
[186] Statement of Dr Ting, Exhibit 1, 513[13]. See also T202.24-29.
[187] T318.26-32.
[188] T319.1-6.
[189] T319.43-46.
[190] T320.1-10.
[191] T320.17-27.
[192] T320.35-36.
[193] T320.37-41.
[194] TCH Clinical Records, Exhibit 1, 521-522.

virtue of that set out in bold text at the bottom of the page, who, on the relevant day, was Dr Dunn.

183. Dr Ting said that because Rozalia was in Resus bed 2, which was in geographic area North, Dr Dunn was responsible for Rozalia's care.[195] Dr Ting assumed her responsibilities were consistent with what appeared in bold at the bottom of the page.[196] In Dr Ting's view, the "true allocation is based on what's written on the bottom of the page" and that what was noted at the top of the page is incorrect.[197]

184. Dr Dunn understood that she was responsible for the North and West pods and, therefore, Resus beds 3, 4, and 5, and that Dr Ting was responsible for Resus beds 1 and 2.[198] Dr Dunn did not understand Resus beds 1 and 2 to be her responsibility[199]. Dr Dunn described the allocation of Resus beds as "in flux"[200] and that it had been changing.[201]

185. Dr Dunn gave evidence that the day sheet, in the form in which it appeared in the brief of evidence, was still in use as at 31 October 2023.[202] At the time he gave evidence in December 2023, Dr Scanlan confirmed that the day sheet was corrected "about a month ago", which appeared to be just after the first hearing block.[203]

186. The result of the confusion in the day sheet was that no doctor considered themselves to be directly responsible for Rozalia when she was in Resus bed 2, from the time of the handover to when she was moved into the Paediatric ED at around 1007 hours.

Paediatrics

187. Although Rozalia was not physically present in the Paediatric ward, paediatric doctors had an ongoing role in her care. A similar "handover" process occurred in respect of Rozalia.

188. By the time of the paediatric handover, Dr Tee had checked for blood results at 0552, 0556, 0558, 0612, 0644, and 0736 hours.[204] That task did not appear to have been

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[195] Statement of Dr Ting, Exhibit 1, 513[14]. See also T204.31-34; T205.10-14.
[196] T203.45 – T.204.5.
[197] T204.10-26.
[198] T325.1-7.
[199] T323.30-34, T325.30-31; see also T326.15-16.
[200] T326.35-38.
[201] T326.42-43.
[202] T317.40-42.
[203] T621.15.
[204] Statement of Dr Tee, Exhibit 1, 575[19].

performed by anybody following the handover. According to Dr Jarvis, it was the responsibility of the incoming day team to follow up on pending results.[205]

189. Dr Jarvis handed over to the day shift, which included Dr Mitchell and Dr Stewart. An apparent improvement in Rozalia's appearance was discussed, in addition to the investigations and vital signs.[206] Dr Jarvis gave evidence that Rozalia's vital signs had "transiently improved, yes, but overall, they were fairly similar to where she was at the start of the night." He agreed that Rozalia's appearance was inconsistent with what was available to be seen in the observations and vital signs.[207]

190. Dr Jarvis believed that he had told Dr Mitchell that the ICU team wanted input from the Paediatric Consultant before they would become involved.[208]

191. Dr Jarvis was aware of the positive influenza A result at the time of handover.[209] He thought that another doctor raised the possibility of myocarditis.[210] Dr Jarvis did not have a recollection of an issue with the liver being specifically discussed at the handover, but, given the ultrasound of the abdomen had been ordered, he suspected it was. The positive influenza A result was discussed.[211]

192. Dr Stewart suspected a cardiac issue. The influenza A result and the enlarged liver were two factors that contributed to this concern.[212] She was sufficiently concerned to raise cardiac failure at the handover. Others present did not agree. [213] Dr Jarvis' rationale for thinking that myocarditis was not highly likely at the handover included his interpretation of the ECG, which, as it transpired, he had misinterpreted.[214]

193. Dr Mitchell stated that myocarditis was raised at the handover as a potential differential diagnosis.[215] She was aware of the influenza A result at the time of the handover.[216] She was aware that there were outstanding troponin and creatine kinase results.[217] Those results were not followed up on.

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[205] T127.37-41.
[206] T127.5-11.
[207] T128.9-10.
[208] T136.6-11.
[209] T138.30-34.
[210] Statement of Dr Jarvis, Exhibit 1, 563[38]. See also T138.35-37.
[211] T139.1-5.
[212] 48325-32.
[213] T483.39-40; T484.33-36. See also the second statement of Dr Stewart, Exhibit 11.10, 2[11]-[12].
[214] T139.16-20.
[215] T165.1-4.
[216] T164.25.
[217] T165.5-25.

The ICU

194. Dr Hall appeared to have handed over to Dr Mitchell Wilcox.[218] Dr Wilcox stated that in respect of Rozalia, there was no note available. He believed that nothing in the handover had told him what had or had not been done as part of the review by the night team.[219]

195. Dr Hall prepared a contemporaneous email, dated 8 July 2022, in which he said he handed over to the Outreach Consultant and Day Registrar, and that "MW" (Dr Wilcox) was to "head down" to review Rozalia. His email recorded that Dr Wilcox went down just after the handover and reported verbally on his return that "TCH ICU involvement not required, would take to paeds high care". In his statement, he said that he handed over a summary of "our assessment of the position, namely, that Rozalia was in the emergency resuscitation area, that she appeared to be suffering from dehydration, that she had been give fluids and was improving, and that a paediatric consultant was about to assess her at which time further communications would occur." [220]

196. Dr Hall's oral evidence on this issue was less certain and, on several occasions, he was not able to remember the specifics of what he said.[221]

Part B – What the Diagnosis Should Have Been at the time of the handover

197. The evidence suggested that even in the absence of the blood results, at the time of the handover, there was sufficient information available to suspect a cardiac cause of Rozalia's symptoms.

Enlarged Liver

198. At the hearing, Dr Mitchell agreed that she was concerned about the possibility of fluids overload.[222] She stated that the significance of the enlarged liver was not recognised,[223] and that with hindsight *"it was due to right-sided heart failure with venous congestion …"*.[224] She agreed that the enlarged liver was consistent with the eventual diagnosis of myocarditis.[225] Whether or not Dr Jarvis reported the enlarged liver to her specifically, Dr

[218] T429.1-15.
[219] T464.24-30.
[220] Exhibit 11.6, [12] and annexure A.
[221] T430.6-31.
[222] T156.40-41.
[223] T157.37-41.
[224] T157.43-45.
[225] T158.1-2.

Mitchell was aware of it from her examination.[226] Dr Mitchell thought that Rozalia had been reviewed by ICU.[227]

Abnormal ECG

199. Dr Mitchell reviewed the ECG herself.[228] Dr Mitchell no longer believed that the ECG was normal,[229] and agreed that it was consistent with pericarditis.[230] She agreed that the white blood cells count and low lymphocyte count were consistent with an underlying viral infection.[231]

Influenza A

200. Dr Mitchell was aware of the influenza A result at some time between 0800 and 0830 hours.[232]

201. Dr Mitchell agreed that there was sufficient information by the time of the handover at 0800 hours to act on the potential for myocarditis and reduced fluids.[233] Dr Robertson agreed that that the ECG showed abnormalities that were suggestive of cardiac issues, and that the ECG, combined with the influenza A result, should have raised a suspicion of myocarditis.[234]

Expert Review of the Diagnosis

202. The experts agreed that by the time the ECG was done and seen prior to 0700 hours, there was enough information to suspect myocarditis as the most likely diagnosis and to change the treatment plan accordingly. Their conclusions reflected their descriptions of how myocarditis should be diagnosed.

203. The return of the influenza A result at 0734 hours confirmed the diagnosis. A properly interpreted ECG, the influenza A result, along with the enlarged liver, tachycardia, and low blood pressure, should have seen a diagnosis of what the experts called “influenza myocarditis” by the time of the handover. The troponin result received later that morning was described as “the icing on the cake”, in terms of confirming that already available diagnosis.[235]

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[226] T158.4-10. See also TCH Clinical Notes, Exhibit 1, 230.
[227] T159.17-19.
[228] T162.38.
[229] T163.15.
[230] T163.26-27.
[231] T164.13-14.
[232] T164.25-26.
[233] T165. 30-34.
[234] T377.15-378.15.
[235] T584.32 – 585.40

204. The experts gave evidence on this issue: [236]

> A/PROF STARR: Myocarditis should have been suspected when the ECG was done – at 6.52, I think was when it was done – and the paediatric registrar has seen it. Whenever it was – after the ECG was done and seen.
>
> MR FORDHAM SC: Dr Festa?
>
> DR FESTA: I think at that time point, when the ECG is available, that myocarditis should have been elevated to the most likely diagnosis.
>
> MR FORDHAM SC: Dr Day?
>
> DR DAY: I agree with that; and then when the influenza swab came back at 7.30, that's a diagnosis of influenza myocarditis.
>
> MR FORDHAM SC: Dr Day has just added something. Do the other two of you agree with that? Dr Festa?
>
> DR FESTA: Yes, agree.
>
> MR FORDHAM SC: Professor Starr?
>
> A/PROF STARR: Yes, agreed. I mean, the ECG was abnormal, as we've said, so that it was consistent with myocarditis already. Influenza gave a cause and, again, the two together then, it's sort of almost – you have got your diagnosis and – yes, and the troponin is the final thing that absolutely confirms it.
>
> DR FESTA: I think the ECG and the low blood pressure, the liver that's palpable and the increasing heart rate is enough to refer to the heart specialists, intensivists, at Children's Westmead.
>
> MR FORDHAM SC: Yes, well, that was – what I am actually interested in knowing is, you've got the ECG, you've got the diagnosis of influenza A, but you've just dealt with it. What I was interested in knowing is, if you add to that the liver, are there any other findings that one would add in to suspect myocarditis?
>
> DR DAY: Well, the tachy, the fast heart rate, and the hypotension, so the evidence of cardiogenic shock.
>
> A/PROF STARR: And the lactate and the – so the - - -
>
> DR DAY: Yes.
>
> MR FORDHAM SC: So it didn't need the troponin, I take it you're telling me.
>
> A/PROF STARR: It didn't, but that is the – that's right. It didn't need the troponin, but that's the icing on the cake, as it were.
>
> MR FORDHAM SC: Do you agree with that, Dr Day?
>
> DR DAY: I do.
>
> MR FORDHAM SC: Dr Festa.

[236] T584.32 - 585.40

DR FESTA: Yes.

STAGE 6 – HANDOVERS UNTIL THE DIAGNOSIS OF MYOCARDITIS AT 1220 HOURS

ICU Involvement

205. At 0800 hours on 5 July 2022, Dr Wilcox attended Resus bed 2 to see Rozalia for what he described as a "baseline review". The review was intended to get an understanding of her condition at that time, in the event that ICU input was later required, and to see if Dr Mitchell had decided whether Rozalia was to be admitted to the paediatric ward and required ongoing intensive care review.[237]

206. Dr Wilcox did not physically examine Rozalia. He limited himself to what he described as an "end of bedogram".[238] At that time, the pathology results, influenza A result, the ECG, and nursing observations were available, which, as noted by the experts, provided a sufficient basis for a diagnosis of myocarditis.

207. Dr Wilcox believed that he had access to the influenza A result, but he did not recall it being available when he was down in the ED. He was aware that it was returned at some stage shortly after.[239]

Further review by Dr Mitchell at 0945 hours

208. Rozalia was reviewed again by Dr Mitchell at approximately 0945 hours. It is not clear if the observations recorded on the PEWS at 0953 hours were taken by the nurse during or after Dr Mitchell's review.

209. Rozalia's blood pressure had improved to 81/56, but she remained tachycardic at 140 beats per minute.[240] The enlarged liver was noted. The impression recorded in the notes is of slow ongoing improvement.[241] The plan was to continue fluids and to carry out a liver ultrasound.

210. Given the acceptable timeframes in which a troponin result should be delivered, Dr Mitchell should have sought out those results at her review at 0945 hours or thereafter, until it was made available to her. However, there is no evidence to suggest that Dr Mitchell sought or followed up on the troponin result at her review at 0945 hours, or subsequent to that review, or that she tasked anyone else to do so.

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[237] T455.5-30.
[238] T459.30-46.
[239] T463.15-20.
[240] Statement of Dr Mitchell, Exhibit 1, 585[22].
[241] Exhibit 1, 231.

211. Dr Mitchell stated that she was not made aware of the change in PEWS score from 4 to 6 at approximately 0953 hours, and that if she had been, she would have reviewed Rozalia again (noting that she had just done so at 0945 hours).[242] That would have included considering the results of investigations, including troponin, which became available at 0956 hours.

212. Dr Mitchell indicated in her evidence that had the troponin result been known to her, she would have acted on it shortly after the review.[243]

213. There is no evidence that Dr Mitchell checked the observations chart during her review.

The Transfer of Rozalia from Resus Bed 2 to Bed 41

214. RN Annalise Vartiainen, the nurse navigator in the ED, gave evidence that Dr Dunn had said that Rozalia did not need to be in a Resus bed shortly after the ED handover.[244]

215. Dr Dunn accepted that it was likely that she had said something to the effect that Rozalia did not need to be in Resus.[245]

216. At 1000 hours, only one Resus bed was occupied.[246]

217. RN Vartiainen stated that the decision to move Rozalia was not due to a lack of space in the Resus area,[247] but that it involved a consideration of what resources were available to care for or monitor Rozalia, in light of what was known about other patients who would be coming into the Resus beds. She said that Rozalia may have received less care and attention had she remained in Resus, because of the needs of the patients who were arriving, and that it would be more likely that someone would be monitoring Rozalia more frequently in another area.[248]

218. RN Vartiainen accepted that when the time came to move Rozalia, she did not consult Dr Dunn about moving Rozalia.[249]

219. Dr Dunn stated that had she been consulted, she would have reviewed Rozalia before deciding whether to support her being moved out from the Resus bed.[250] That review

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[242] Statement of Dr Mitchell, Exhibit 1, 2665[40]. See also T191.7-23.
[243] T191.23-34.
[244] Statement of RN Vartiainen, Exhibit 1, 489[10].
[245] T329.24-28.
[246] Statement of Dr Scanlan, Exhibit 11.8, 7.
[247] T246.6-15.
[248] T247.5-22.
[249] T248.10-17.
[250] T329.33-34.

would have included an interrogation of the Clinical Information System, which included blood results and a review of the PEWS and EDIS.[251]

The Troponin Result

220. The troponin result was made available by Pathology at 0955 hours.

221. As noted above, there is no evidence that the task of checking for the troponin result was specifically allocated to anybody following the handover, and it was not performed by anyone in the day teams in the ED, Paediatric ED, or Paediatrics until 1025 hours.

222. The means by which the test result was notified to a relevant clinician underscores the lack of cohesion, apparent in the diagnostic processes relevant to Rozalia's care.

223. RN Sarah Retford was working in the Paediatric ED in the morning of 5 July 2022, when RN Vartiainen requested to transfer Rozalia from Resus bed 2 into the Paediatric ED. That request was made at just after 1000 hours.

224. RN Retford took a handover from RN Sarah Morgan when she retrieved Rozalia. That handover included that Rozalia had been quite unwell overnight and required a lot of fluids to maintain her blood pressure, that she had been seen by the ICU team, but that at that stage they had determined she was stable to go to the ward, and that before she went to the ward, they wanted her to go for a liver ultrasound.[252]

225. RN Retford saw a post-it note with the troponin result written on it,[253] stuck on top of Rozalia's documents on the scribe table at the foot of Rozalia's bed. According to RN Retford, it was easily seen when you approached the scribe table.[254]

226. It was RN Retford's expectation that the troponin result would have been notified to a medical practitioner. [255]

227. RN Retford gave evidence that RN Morgan was unaware of the troponin result,[256] and it was her assumption that it had been placed there by a clerical staff who was not aware of the significance of the result. They likely could not find the doctor and simply placed it there.[257]

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[251] T329.35-45.
[252] T268.8-13.
[253] T268.16-24.
[254] T271.12-13.
[255] T271.15-17.
[256] T271.25-31.
[257] T271.39-42.

228. RN Retford also told RN Vartiainen about the note she had seen.[258] RN Vartiainen confirmed that she became aware of the troponin result at or about 1000 hours,[259] and there is some evidence that she knew about the result prior to being informed by RN Retford.[260] She said that she expected that someone was aware of the troponin result and that it was a significant finding for Rozalia.[261] RN Retford said that she then spoke to Dr Aidan Watters at or around 1021 hours and notified him of the troponin result, in the presence of Dr Stewart.[262]

229. Dr Stewart denied being present for any conversation in which RN Retford referred to the high troponin result of 1295.[263] Dr Watters did not recall having that conversation.[264]

230. Dr Stewart's evidence was that she became aware of a high troponin result after overhearing nurses talking about it at about 1130 hours.[265] She assumed that Dr Mitchell had been informed,[266] and that formal critical result processes had taken place.[267] She said that she became aware of the actual result at 1204 hours, when she accessed the CIS records.[268]

231. Dr Stewart said that she informed Dr Mitchell of the troponin result after 1204 hours,[269] and that Dr Mitchell was unaware of Rozalia's troponin results before that time.[270]

232. Dr Watters gave evidence that Dr Stewart was present in the Paediatric ED for a large portion of his shift, but he could not remember when she first appeared and felt that it was soon after he first became aware of Rozalia.[271]

233. In the audit list on the CIS record showing Rozalia's blood results, including the troponin result, it appeared that someone accessed the record at 1025 hours. Dr Watters accepted that it was probably him.[272] He had a memory of Dr Stewart sitting next to him, having some difficulty in opening the results, so he opened them to show her.[273] It is not

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[258] T272.14.
[259] T249.30-36.
[260] Presumed by reference to Exhibit 1, 389 ("the CIS document").
[261] T250.20-25.
[262] T275. See also statement of RN Retford, Exhibit 1, 481-482.
[263] T477.35–37; T478.1-2.
[264] T509.34-40.
[265] Statement of Dr Stewart, Exhibit 1, 602[8]. See also T.480.1-2.
[266] Statement of Dr Stewart, Exhibit 1, 603[8].
[267] T480.39-40.
[268] T479.43-44.
[269] See supplementary statement of Dr Stewart, Exhibit 11.10, 4[19]. See also T487.37-38.
[270] See supplementary statement of Dr Stewart, Exhibit 11.10, 4[19].
[271] T508.19-34.
[272] T508.44-45. See also Exhibit 1, 389.
[273] T509.1-5 and 12-13.

clear whether he knew if other practitioners responsible for Rozalia's care were aware of the result.

234. RN Lucinda Reumer reviewed observations taken at 1021 hours, at which time the PEWS score was determined to be 6. When asked about whether she arranged for a review within 30 minutes, in accordance with the PEWS escalation guidance,[274] RN Reumer said that she spoke to a female paediatric doctor, who stated that a consultant was going to come and have a look at Rozalia.

235. During this conversation with the paediatric doctor, RN Reumer recalled saying "Are we still continuing fluids? Is there anything else? Because she's got raised troponin". She gave evidence that the doctor replied to continue fluids, as she was waiting to speak to the consultant about the high troponin.[275] If it did occur, that conversation would have taken place at about 1037 hours,[276] when Rozalia arrived in Paediatrics.[277]

236. RN Samantha Sherd thought that she became aware of the troponin result at around 1100 to 1130 hours, when she overheard someone talking about it.[278]

237. Dr Mitchell said that she was informed of the troponin result by Dr Stewart "closer to midday",[279]as opposed to her earlier estimate of about 1230 hours.[280]

238. On Dr Mitchell's evidence, had that troponin result been brought to her attention earlier, she would have ceased or moderated the fluids given to Rozalia,[281] which would have decreased the load on her heart.[282]

239. Dr Mitchell said that the delay in informing her of the troponin result was unacceptable.[283]

STAGE 7 – FROM DIAGNOSIS AT 1220 HOURS TO NETS ARRIVAL AT 1859 HOURS

Dr Mitchell's review at 1220 hours

240. A review was conducted by Dr Mitchell at 1220 hours. At paragraph 42 of her first statement, Dr Mitchell noted that the catalyst for that review was her being told that Rozalia's blood pressure had dropped to 75/62.[284] Dr Mitchell believed that she was

[274] T263.1-5.
[275] Statement of RN Reumer, Exhibit 1, 496[12]-[13]. See also T264.23-25.
[276] T265.10-23.
[277] T264.31.
[278] T366.23-24.
[279]Statement of Dr Mitchell, Exhibit 1, 2665[42].
[280]Statement of Dr Mitchell, Exhibit 1, 585[24]. See also T166.19-20.
[281] T168.43-45.
[282] T168.47.
[283] T169.25-28.
[284] Exhibit 1, 585[24].

contacted by Dr Stewart "closer to midday".[285] Dr Mitchell attended Rozalia and became aware of the troponin result on review of the bloods.[286] Dr Stewart said that she informed Dr Mitchell of the troponin result after 1204 hours,[287] and that Dr Mitchell was unaware of Rozalia's troponin results before being informed by her.[288]

241. That result led to a clear diagnosis of influenza A myocarditis and required an alteration in treatment, including a reduction of fluids.[289] Clearly, by that time, Rozalia was very unwell and required transport to a specialist children's hospital for intensive care.

242. Fluids were decreased to one-third maintenance,[290] and a dose of Oseltamivir (known as Tamiflu) was charted, to be delivered orally.[291] RN Sherd did not administer Tamiflu, because she was not actually looking after Rozalia, did not know the doctor or the medication, did not see the medication order, and, in any case, formed the view that Rozalia was not in a condition to swallow a tablet.[292]

243. According to Dr Mitchell, she telephoned the NETS team at 1242 hours and spoke with an ICU Consultant.[293] Dr Kathryn Carmo, Deputy Director of NETS, referred to a phone call occurring at 1224 hours, in which Dr Mitchell spoke with Dr Swapnill Shah, Neonatologist and General Paediatrician, and Dr Andrea Christoff from the Paediatric Intensive Care Unit ("pICU") at the Westmead Children's Hospital.[294]

244. Dr Christoff recommended anaesthetic support for the insertion of a larger cannula in case inotropes were required and that CPAP be considered to remove the strain on Rozalia's heart muscle. Dr Christoff considered that myocardial support would be needed with low doses of adrenaline and milrinone. [295] Dr Mitchell was to obtain further information and call back, and Dr Shah was to arrange retrieval.[296]

Expert Review as to Treatment Options

245. Associate Professor Starr said that if it was possible to apply, CPAP would have assisted.[297] He explained that it was a question of balancing upsetting Rozalia and

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[285] Statement of Dr Mitchell, Exhibit 1, 2665[42].
[286] Statement of Dr Mitchell, Exhibit 1, 585[25].
[287] Supplementary statement of Dr Stewart, Exhibit 11.10, 4[19]. See also T487.37-38.
[288] Supplementary statement of Dr Stewart, Exhibit 11.10, 4[19].
[289] Statement of Dr Mitchell, Exhibit 1, 2265[42].
[290] Statement of Dr Mitchell, Exhibit 1, 585[27].
[291] Ibid.
[292] T.368.27-34. See also statement of RN Sherd, Exhibit 1, 473[24].
[293] Statement of Dr Mitchell, Exhibit 1, 2666[45].
[294] Statement Dr Carmo, Exhibit 11.1, 2[8]-[9].
[295] Ibid [9].
[296] Ibid [10].
[297] T575.33-34.

making things worse against what the benefit might be.[298] He stated that he would have tried CPAP and that if there had been a lot of fight, "one could have considered sedation, but that would have been done with discussion with colleagues with intensive care…".[299]

246. Dr Festa gave evidence that CPAP was worth trying. With clear explanations and a gentle and progressive lifting of the pressure,[300] children can often relax into it.[301] He agreed that sedation could be hazardous and that, if CPAP could not be done and would create more problems by distressing the child, then the safest thing to do would be to intubate, which would require advice from paediatric intensive care.[302]

247. Dr Day agreed with Associate Professor Starr and Dr Festa. He noted that it was a difficult scenario and that none of the answers were easy for the medical staff looking after Rozalia at that stage, but that it was "a situation where advice from skilled colleagues was needed."[303]

Attempts at Stabilising Rozalia prior to NETS Arrival

248. CPAP was not discussed in the later calls in which Dr Robertson took part. Dr Robertson did not consider using it, because he did not believe it would have been safe in his hands.[304] He explained that whilst Rozalia was in forward failure,[305] CPAP could in a person with forward and backward failure impair blood flow back to the heart and create more shock. He was also concerned about Rozalia accepting the use of a facemask and the possible need to sedate her.[306]

249. Dr Robertson did not believe he could safely achieve CPAP for Rozalia and did not think it was a safe therapy to use in a retrieval environment.[307]

250. In discussion between Dr Mitchell and Dr Ting, noradrenaline was charted. That was either not started, or stopped quickly, at the suggestion of NETS.[308]

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[298] T575.45-47.
[299] T576.11-14.
[300] T576.19-24.
[301] T576.29-30.
[302] T576.34-40.
[303] T576.45-577.1.
[304] T393.45-394.2.
[305] "Forward failure" describes a process by which the right ventricle of the heart fails to produce an adequate cardiac output meaning an insufficient amount of blood is forced into circulation.
[306] T394.34-44.
[307] T394.45-395.2.
[308] T171.43-46. See also statement of Dr Mitchell, Exhibit 1, 2666[46]; T.209.5-26; and statement of Dr Ting, Exhibit 1, 514[18],[20].

251. At approximately 1300 hours, Dr Wilcox was called. He attended and performed a bedside echocardiogram.[309] Recordings of the echocardiogram were forwarded to NETS.[310]

252. The echocardiogram results were consistent with cardiogenic shock[311].

253. Dr Mitchell had a second conference call with NETS, with Dr Pratusha Babu, pICU fellow, and Dr Gary Sholler, Paediatric Cardiologist, at about 1340 hours.[312]

254. Dr Robertson attended Rozalia two to three minutes after being contacted by Dr Tina Xu, Outreach Consultant, after Dr Xu had become aware of the ultrasound (echocardiogram) results.[313] Dr Mitchell was involved in a conference call with NETS at the time of Dr Robertson's arrival.[314]

255. Dr Robertson became involved in the NETS call at 1340 hours and received advice in relation to the choice of inotropes. He was requested to administer adrenaline.[315] Concerns were raised by Anaesthetics at TCH about the ability to insert a central line without significant sedation. There was also a risk posed by intubation if a central line was inserted.[316]

256. Dr Robertson moved Rozalia to the ICU at about 1430 hours,[317] whilst awaiting NETS and inserted venous and arterial lines.[318] Those were inserted at or about 1600 hours under sedation.[319]

257. A third call took place between Dr Carmo and Dr Sholler of NETS and Dr Robertson at about 1449 hours. Dr Robertson updated NETS and discussed the adrenaline dosage.[320] Dr Carmo involved Dr Sholler because of the fear of cardiac arrest and was concerned as to whether it was appropriate for Rozalia to be transferred, given the observations described by Dr Robertson, which included Rozalia being sleepy, hypoperfused, and shut down with a capillary refill of about 4 seconds.[321]

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[309] Statement of Dr Wilcox, Exhibit 1, 647[13]-[14].
[310] Statement of Dr Costa, Exhibit 1, 656[6]-[7].
[311] Statement of Dr Wilcox, Exhibit 1, 647[14]. See also statement of Dr Costa, Exhibit 1, 647[9].
[312] Statement of Dr Mitchell, Exhibit 1, 2666[48]. See also statement of Dr Carmo, Exhibit 11.1, 2[11].
[313] Statement of Dr Robertson, Exhibit 1, 690[6]-[8].
[314] Ibid [9].
[315] Ibid 690-691[9]-[10].
[316] Statement of Dr Carmo, Exhibit 11.1, 2[11].
[317] Statement of Dr Robertson, Exhibit 1, 692[16].
[318] Ibid 691[12].
[319] Ibid [19].
[320] Ibid [20].
[321] Statement of Dr Carmo, Exhibit 11.1, 3[12].

258. Following that call and an improvement in lactate, adrenaline was maintained. Fluids ceased and were replaced with potassium.[322]

259. Dr Robertson saw Rozalia at around 1800 hours,[323] he thereafter finished his shift and left the hospital at about 1830 hours.[324]

260. NETS arrived at the hospital at about 1859 hours and first saw Rozalia at 1915 hours.[325] The evidence suggested that there may have been some delay in the arrival of NETS due to operational issues concerning the ability of NETS staff to readily access the NETS helicopter. That issue was not explored in detail at the hearing. I do not find that any delay was consequential.

261. Dr Festa's evidence was that records showed that between 1500 and 1800 hours, Rozalia became more breathless. Her respiratory rate went up and her heart rate increased.[326]

Expert Review of the Decision Not to Transfer

262. Dr Festa stated that Rozalia "could not be transported unless she was intubated for transfer and other methods to support her circulation were introduced…" and that even if that were done, "we don't know if she could have stabilised for transfer, that there was insufficient time to stabilise her and she deteriorated further. It may have been that only an artificial way of pushing blood around the body would have sustained her life longer and that would have needed ECMO to have been initiated, and the window at this point between 7.00, 7.15, and the time of cardiac arrest is very short."[327]

STAGE 8 – TREATMENT AFTER NETS ARRIVAL AND ROZALIA'S DEATH

The Handover to NETS

263. Handover to NETS took place at about 1915 hours.[328] By 1915 hours, when NETS arrived, Rozalia was "unwell and grey".

Expert Review of Rozalia's Condition at the Time of NETS Arrival

264. Dr Festa thought that Rozalia's peripheral pulses were "very low volume".[329] He described "the myocardium [was] failing and fatiguing, and getting more and more tired

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[322] Statement of Dr Robertson, Exhibit 1, 693[20]-[21].
[323] T384.14.
[324] Statement of Dr Robertson, Exhibit 1, 694[26].
[325] NETS Mission Time Record, Exhibit 1, 2685. See also statement RN Nougher, Exhibit 1, 2615[14d].
[326] T578.5-12.
[327] T579.45-580.6.
[328] Statement of RN Nougher, Exhibit 1, 2615[d]. See also NETS records, Exhibit 1, 808.
[329] T579.16-18.

and unable to sustain the effort despite the push of adrenaline to work harder and harder and the heart starts to no longer be able to sustain the effort…" and that "we start to see a reduction in heart rate because the heart cannot sustain the rapid rate and the rapid effort its being asked to do".[330]

265. Dr Festa thought that the observations between 1900 and 2141 hours were consistent with a terminal decline in heart functions, with a decrease in heart rate and an increase in respiratory rate:[331]

> So the observations between 1900, or 7.00 pm, and 21.44, I thought were consistent with a turn of (sic – terminal) decline in the heart function. The heart rate had been increasing steadily and then it turns – starts coming down. Similarly, the respiratory rate had increased up to 40 breaths per minute. And then I think this time, based on the first look at 7.15 by the NETS doctor, Rozalia was looking very unwell. She's described as 'grey and unwell' at 7.15. I think her peripherally palpated pulses are a very low volume, consistent with an inability to trace the blood pressure well on the arterial line.
>
> I think what we know about the myocardium failing and fatiguing, and getting more and more tired and unable to sustain the effort, despite the push of adrenaline to work harder and harder, is that at some point, the heart starts to no longer be able to sustain the effort, and one of the things that we start to see is a reduction in heart rate because the heart cannot sustain the rapid rate and the rapid effort of the work it's being asked to do."

266. Associate Professor Starr stated that a reduction in heart rate was a pre-terminal sign and that "we anticipate the patient is going to have a cardiac arrest."[332] He thought that the time for transfer was before 1900 hours.[333]

Final Deterioration and Resuscitation

267. NETS had difficulty with obtaining oxygen saturations on their monitors.[334]

268. In her statement, Dr Carmo referred to an untimed fifth conference call between Dr Gemma Curry, who was the retrieval doctor, and Dr Chong Tien Goh from the pICU at the Westmead Children's Hospital.[335] Dr Goh considered Rozalia to be on the verge of cardiac collapse. He was doubtful that Rozalia could be transferred, as she required intubation for transfer. Dr Goh opined that the only thing that could save Rozalia was ECMO, which was not available to her in Canberra.[336]

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[330] T579.21-26.
[331] T579.11-15, noting the transcript is inaccurate where it refers to "turn of decline".
[332] T579.34-35.
[333] T580.10-11.
[334] Statement of RN Nougher, Exhibit 1, 267[15]. See also NETS Mission Time Record, Exhibit 1, 2685.
[335] The fourth was an internal NETS handover. See statement of Dr Carmo, Exhibit 11.1, 3[13].
[336] Statement of Dr Carmo, Exhibit 11.1, 3[14]-[15].

269. At around 2115 hours, Dr Robertson was called back to the hospital and was requested to intubate Rozalia to enable transfer. Her clinical peripheral blood perfusion had worsened, and recent arterial blood gases showed worsening lactate.[337]

270. On arrival at Rozalia's bed, Dr Robertson noticed that Rozalia had obviously deteriorated and had a narrow pulse pressure, mottling of the arms and was very drowsy.[338]

271. Rozalia went into cardiac arrest at about 2144 hours. Dr Robertson commenced ventilation, followed by full resuscitation measures.[339]

272. Intensive resuscitation attempts were made, which included intubation at 2149 hours,[340] with 21 doses of adrenaline.[341]

273. At 2252 hours, resuscitation ceased, and Rozalia was pronounced deceased.[342]

PART 8 – MANNER AND CAUSE OF DEATH FINDINGS

274. As required by s 52 of the Act, I make the following finding as to the cause of Rozalia's death:

> That Rozalia Spadafora died at 2252 hours on 5 July 2022 at the Canberra Hospital, Garran, in the Australian Capital Territory, as a result of myocarditis.

275. As to the manner of Rozalia's death, I make the following findings:

(a) It is not possible to know precisely when myocarditis had developed as a complication of the influenza A Rozalia had contracted before her attendance at TCH, and why Rozalia suffered that complication.

(b) GPs who were consulted by Katrina took the appropriate steps to diagnose Rozalia's condition, noting that myocarditis is rare and difficult to diagnose outside of a hospital setting.

(c) Dr Yesmin acted appropriately by advising Katrina that Rozalia should re-present to a GP if her condition became worse. Dr Yesmin's decision to refer Rozalia to the ED of TCH was correct. The decision reflected her belief that the

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[337] Statement of Dr Robertson, Exhibit 1, 694[28].
[338] Ibid [30].
[339] Ibid [32]-[49].
[340] Ibid 695[34].
[341] Expert report of Dr Festa, Exhibit 1, 2642.
[342] Statement of Dr Robertson, Exhibit 1, 698[49], noting the time was incorrectly noted as 2242 hours. See also NETS Notes, Exhibit 1, 814.

testing Rozalia required would be undertaken more quickly if she went to the ED.

(d) Dr Yesmin's failure to send an accompanying letter would not have affected the triage category that was determined at the ED.

(e) Rozalia arrived at TCH at about 1900 hours. She was triaged in the ED at about 1940 hours. The triage category assigned to Rozalia – Category 3 – was appropriate.

(f) That category should have seen Rozalia reviewed by a doctor within 30 minutes.

(g) Rozalia was not reviewed by a doctor until 0016 hours, over 5 hours after she presented at TCH, and around 4.5 hours after she was triaged. Rozalia's best chance of survival was to be transferred to a children's hospital in Sydney as quickly as possible for specialised interventions including, if necessary, ECMO. That delay in the ED may have been significant in the clinical course that followed.

(h) Observations were continued in the ED after the triage process. Rozalia's condition deteriorated. Her blood pressure should have been taken at 2155 hours. If, as was likely, her blood pressure was low, it would have prompted a medical review at around 2155 hours. If that had occurred, it would have likely led to a change in her triage category. There is no evidence that re-triage was considered, despite the changes in her observations. Rozalia was not seen by a doctor within 30 minutes, in accordance with triage guidelines.

(i) The evidence does not explain why the failure to adhere to the 30-minute review time in Rozalia's case did not result in any follow up by a CIN. It is most likely the designated CIN performed general duties in the undoubtedly busy ED throughout the time Rozalia was waiting to be seen by a doctor. The safety net function of the CIN effectively lapsed during that period. There was not a CIN rostered overnight.[343] The CIN process failed to achieve its intended outcomes.

(j) Rozalia was first reviewed at 0016 hours by Dr Wong, who was assigned to the paediatric area in the ED. Dr Wong had no specific training in paediatrics, reflecting a lack of paediatric capacity in the ED. His assessment that Rozalia's condition was attributable to a viral illness was reasonable. Dr Wong did not

[343] This information was provided by the Territory after the hearing.

measure Rozalia's blood pressure and did not have regard to the observations made after triage, which indicated a deterioration of her condition.

(k) It is likely that Dr Wong did not tell Dr Jarvis, the Paediatric Registrar, of his suspicion of a viral illness.

(l) The notes made of the 0016 hours review were described by the experts as lacking detail. There was no list of differential diagnoses and no treatment or diagnostic plan, other than to refer to a specialist team and to take bloods.

(m) The review conducted by Dr Jarvis and Dr Tee at 0420 hours was thorough. Low blood pressure was identified, as was tachycardia. An enlarged liver was identified. Dr Jarvis correctly associated those symptoms with a possible cardiac cause, such as myocarditis or pericarditis. That resulted in the ECG being conducted at 0652 hours.

(n) The ECG was abnormal and suggestive of pericarditis. The abnormality was clear if read in light of the purposes for which the test was ordered.

(o) The ECG was reviewed by Dr Jarvis and Dr Mitchell at around 0730 hours. The ECG was misread by both Dr Jarvis and Dr Mitchell as indicating no significant abnormalities.

(p) A positive influenza A result was available at 0724 hours.

(q) By about 0740 hours, there was enough information to suspect myocarditis, even in the absence of the troponin result. That being so, the amount of fluids that was being administered to Rozalia was in excess of what was required and may have been further damaging Rozalia's heart. Given the seriousness of her condition, preparations should have commenced at that time for transfer to Sydney through NETS. Her condition at that time would have made the process of intubation and ventilation required for transfer more viable than it was to be the case over 12 hours later.

(r) The decision taken by Dr Watson to include a troponin test to exclude myocarditis was sound. Given the request was received at 0644 hours, there should have been a result by around 0815 hours. No one appeared to have been allocated the responsibility of following up on that result. The result should have been followed up by Dr Mitchell or a member of the ED team. It was not an adequate response for the clinicians involved in Rozalia's care, including Dr

Mitchell and the ED clinicians, to presume that an adverse result would have been communicated to them.[344]

(s) Dr Mitchell made a request for an ICU review at some time shortly after her conversation with Dr Jarvis at around 0530 hours. That request was made for a sound clinical purpose. That review should have taken place and should have included the taking of Rozalia's history, a physical examination, a review of the observations, and a consideration of the investigations ordered. It was an opportunity lost to have fresh eyes brought to the process of clinical assessment. The ICU's reluctance to undertake a review and the apparent deference to paediatric opinion before they would become involved was likely attributable to Dr Hall and Dr Dhital not being experienced in paediatrics. This reflects a lack of paediatric capacity in the ICU at that time.

(t) There is a divergence in the evidence as between Dr Jarvis and Dr Mitchell as to whether Dr Mitchell was told whether an ICU review had occurred. The fact that a review had *not* been undertaken was not properly documented. In the absence of notes of an ICU review, Dr Mitchell should have checked with the ICU as to what had happened or what was to happen, as far as a review was concerned.

(u) The handover processes in the ED, the ICU, and Paediatrics conducted between 0800 and 0830 hours were inadequate:

(i) Rozalia's care was discussed at the Paediatrics, the ED, and the ICU handovers. Doctors should have acted on an already available diagnosis of myocarditis.

(ii) The information available and discussed at the Paediatrics and the ED handovers was both siloed and, in some respects, different.

(iii) Rozalia's enlarged liver and the potential for a cardiac cause for her condition were discussed at the Paediatrics handover, but not subsequently acted upon in a co-ordinated way.

(iv) The outstanding troponin test and a suspected infection were discussed at the ED handover.

(v) Both Paediatrics and the ED appeared to have incorrectly assumed a greater level of involvement by the ICU than was actually the case, or, at

[344] See for example Dr Mitchell, T166.13-17.

least, there was an inconsistent understanding between Paediatrics and the ED regarding the level of ICU involvement.

(vi) The suggested improvement in Rozalia's presentation was not consistent with her clinical observations.

(vii) As a result of the inconsistencies within the day sheet, no doctor in the ED considered themselves to be responsible for Resus bed 2 and Rozalia between 0800 and 1007 hours.

(v) Confusion about the extent of ICU involvement continued after the handover.

(w) Fluids for dehydration continued to be administered in excess of the amount needed, placing greater strain on Rozalia's heart. Rozalia was transferred from Resus bed 2 to bed 41 in the Paediatric ED without medical review and despite her PEWS score having risen to and remained at 6.

(x) There was a delay in the troponin result being actioned. The troponin result:

(i) should have been available by about 0815 hours at the latest;

(ii) was available at 0956 hours and was delivered to Rozalia's bed on a post-it note, attached to Rozalia's records on the scribe table, at some time between 0956 and 1005 hours. That form of communicating an abnormal result was unacceptable;

(iii) was known by nursing staff shortly prior to 1005 hours;

(iv) was known, to the extent that it was positive, as opposed to the actual number, by at least Dr Watters, and probably Dr Stewart at about 1025 hours;

(v) was definitely known, to the extent that it was positive, as opposed to the actual number, by Dr Stewart at about 1130 hours;

(vi) was assumed by Dr Stewart to have been known by Dr Mitchell and to have been the subject of the formal critical result process; and

(vii) was brought to Dr Mitchell's attention just after midday and actioned, causing a change in treatment, including the reduction of fluids and the engagement of NETS.

(y) Had the troponin result been brought to Dr Mitchell's attention earlier, the treatment that commenced at about 1220 hours would have likely commenced as soon as the result was known.

(z) The discovery of the troponin result caused Dr Mitchell to diagnose myocarditis and to change the treatment plan, which included reducing fluids and engagement with NETS. Clinical decision making thereafter was informed by discussions with clinicians in Sydney:

(i) Rozalia was moved to the ICU at 1220 hours, pending the arrival of NETS;

(ii) The opportunity to attempt to transfer Rozalia to Sydney was prior to 1900 hours, and probably significantly before 1900 hours;

(iii) There was some delay in the attendance of NETS, due to operational and environmental issues concerning the teams gaining access to a helicopter. That unquantified delay was not consequential to the ultimate outcome. Rozalia was likely very unwell by the time of Dr Mitchell's assessment at around midday on 5 July 2022;

(aa) NETS first saw Rozalia at about 1915 hours. By that time, Rozalia's myocardium was failing and fatiguing.

(bb) Rozalia's observations between 1900 and 2141 hours were consistent with a terminal decline in heart functions.

(cc) Rozalia was too unstable to be transferred.

(dd) Intensive resuscitation efforts were adequately performed, but they were unsuccessful.

(ee) Rozalia died at 2252 hours on 5 July 2022.

PART 9 – SECTION 3BA OF THE ACT – CONSEQUENCES OF THE DELAY

276. During the inquest, Rozalia's mother made clear her belief that Rozalia's life could have been saved if she had been airlifted to Sydney in a timely manner. Whilst consideration of that issue will inevitably involve an element of speculation, I believe that s 3BA of the Act does oblige me to attempt to answer that question.[345]

[345] Section 3BA of the Act provides that as far as is practicable, the objects of the Act must, for an inquest into a person's death, be carried out in a way that recognises that the family and friends of a deceased person have an interest in having all reasonable questions about the circumstances of the person's death answered.

277. In this context, there are a number of factors that will have to be considered and assessed:

(a) Fulminant myocarditis is a serious condition, and it can cause death. Associate Professor Starr gave evidence that up to 50% of children with that condition die regardless of the clinical intervention.[346]

(b) After diagnosis was made, proper treatment had to be administered, including reducing the fluids being administered and considering inotropic support.[347]

(c) Rozalia's best chance of survival was then to be transferred to a hospital in Sydney to allow specialised interventions, including ECMO and, if indicated, heart transplant, to take place.

(d) To be airlifted to Sydney, Rozalia had to be stable enough to be intubated and ventilated. Doing so "would have been a challenging moment in her care and she may have had a cardiac arrest on intubation".[348]

(e) The earlier that attempt to intubate and ventilate was made, the better. As Dr Festa said, "I think the sooner you do that, in the context of… somebody whose heart is tired, fatigued, and less able to tolerate the stresses being put on it, the better, because you have to give intubating drugs, anaesthetic drugs, and every single one of those will, to some extent, weaken the power of the heart muscle to squeeze".[349]

(f) Dr Festa indicated that "earlier recognition of cardiogenic shock" would have created "a window of opportunity" for Rozalia to be transferred to Sydney. He said "that's based on earlier diagnosis and also optimised treatment choices made post-diagnosis." With earlier diagnosis and appropriate treatment, there "would have been an opportunity for her to be retrieved by NETS to a Sydney Hospital".[350] However, even if that occurred, "I'm not prepared to say there would have been a change in outcome as a result of that".[351]

(g) Once in Sydney, the success of specialised interventions was not guaranteed. Dr Festa indicated that once ECMO is initiated, survival rates are somewhere between 48% and 77%. On a statistical basis, Dr Festa chose 50% or slightly

[346] A/Prof Starr, T594.22.
[347] Dr Day, T590.35.
[348] Dr Festa, T592.3.
[349] Dr Festa, T592.5-10.
[350] Dr Festa, T591.39-45.
[351] Dr Day, T591.32.

over as the likelihood of survival. In some cases, survival occurs because of a heart transplant.[352]

278. Based on the experts' opinions, I find that the delay in Rozalia's diagnosis and the failure to provide Rozalia with appropriate treatment in a timely manner meant that any opportunity Rozalia may have had for survival was lost.

PART 10 – SECTION 52(4) OF THE ACT – PUBLIC SAFETY ISSUES

279. For the purpose of s 52(4) of the Act, I find that a number of matters of public safety arise in connection with the inquest.

AN OVERVIEW

280. Mr David Peffer, Chief Executive Officer of CHS, gave evidence at the hearing. In both his statement and his evidence, Mr Peffer made concessions as to the inadequacy of Rozalia's care, saying that "the care provided by CHS to Rozalia Spadafora and her family did not meet the standards CHS should be able to provide to our patients, their families and loved ones".[353] He identified the following matters as making up that shortfall in care, and which I find to be matters of public safety:
    (a) Rozalia, her mother, and her grandmother had to wait too long to be seen by a doctor. Once seen, systems and processes of CHS let Rozalia and her family down and were not sufficiently robust to support clinicians and staff to provide the best care to Rozalia Spadafora and her family.
    (b) There are a number of ways in which systemic issues did not support the provision of best care to Rozalia:
        (i) Overall timeliness in review of Rozalia in the ED;
        (ii) Lack of clarity about responsibility for overall management of Rozalia upon her presentation;
        (iii) Internally contradictory information in day sheets in the ED, which did not conform to the system in the ED for allocation of consultants to resuscitation beds;
        (iv) Weaknesses in the system for processing add-on pathology requests, affecting the timeliness of processing of the troponin test request and leading to a delay in the notification of the Troponin test result from Pathology; and

[352] Dr Festa, T593-594.
[353] Statement of Mr Peffer, Exhibit 11.7, [13].

(v) Vulnerability in the system for notification of urgent pathology results, which meant that the troponin result was not immediately notified to a clinician.

281. CHS, through various witnesses, provided information in the inquest and the hearing as to the extent to which these issues have been addressed since Rozalia's death.

WAIT TIMES IN THE ED – THE CIN POSITION

282. The delay Rozalia experienced in being reviewed by a doctor after her presentation at the ED was an experience shared by other paediatric patients at the time. For the period of 1 July 2022 to 30 September 2022, 26% of the paediatric triage Category 3 patients were seen on time. In respect of all paediatric patients, 41% were seen on time. Changes implemented after Rozalia's death, though not defined, saw that position improve. During the comparable period in 2023, 45% of paediatric triage Category 3 patients were seen on time and an overall of 56% of the paediatric patients were seen on time (meaning 44% were not).[354]

283. It is accepted that long wait times in EDs are a problem experienced in hospitals across Australia. Other than to observe that, as may be the case with Rozalia, delays can result in deferred treatment and poorer clinical outcomes, I make no comment about the general issue of delays experienced at the ED at TCH. It would obviously be desirable that paediatric patients are seen by a doctor in the timeframes contemplated by their triage categories.

284. However, the detrimental effect of such delays can be ameliorated to some degree. The CIN position still exists at TCH. An important aspect of the design of the position is to ensure that patients who are not being assessed in accordance with their triage category are kept under observation and re-assessed to determine whether their condition is deteriorating and to negotiate a change in ED priorities if that is appropriate.

285. As it has been noted, the Court has received no information as to why the CIN process did not operate effectively on the evening of Rozalia's presentation. Clearly, staffing and resourcing were an issue. It appeared that the person occupying the CIN position was used to meet the staffing demands within the ED, and no CIN was rostered overnight. This is likely to happen if the CIN position is regarded as a potential backup when staffing shortfalls in the ED arise.

[354] Statement of Dr Scanlan, Exhibit 11.8, [24].

Recommendation

286. The CIN position is most needed when the demands of the ED are the greatest.

287. I recommend that CHS adopts a staffing model that ensures the CIN position is filled on a 24-hour basis and quarantines the CIN position from the staffing demands of the ED.

ADD-ON REQUESTS AND NOTIFICATION OF PATHOLOGY RESULTS

288. The evidence suggested that the reporting of the troponin result was slow and the processes of bringing results to the attention of the relevant clinicians were far from robust. With the introduction of the Digital Health Record ("DHR"), add-on requests are dealt with in a more efficient way. Add-on requests now have a separate process and the "add-on basket", as it is styled, is constantly monitored.

289. Importantly, there is now an agreed list of critical results, which includes troponin, which requires notification directly to a clinician, rather than an ED Clerk.[355] Dr Scanlan gave evidence that "tier one" results on the list, which include troponin, are reported directly to the senior emergency doctor in the department, who carries the admitting officer phone. He also confirmed that the laboratory will no longer call a clerical or administrative team member to notify them of critical results, but will instead call the admitting officer.[356]

290. In light of these developments, I make no recommendation in respect of this issue.

PAEDIATRIC INTENSIVE CARE UNIT & PAEDIATRIC SPECIALISATION IN THE ED

291. The lack of an appropriate paediatric capacity within the ED and ICU was evident in Rozalia's care. As Mr Peffer noted in his statement and in evidence, there has been a debate over many years about an appropriate model of care for seriously unwell children. Historically, TCH has operated without a paediatric High Dependency Unit ("HDU") or a paediatric Intensive Care Unit ("pICU").

292. The recent and complicated history of the consideration of this issue was detailed by Mr Peffer in evidence. In short, as to the initiatives that have been implemented or soon to be progressed:

    (a) there are now four paediatric beds in a new ICU for the care of sick children who meet an agreed referral pathway;

    (b) there is a proposal to create a paediatric Close Observation Unit ("COU") in the paediatric ward, which would provide an intermediate level of care between the

[355] Statement of Mr Newton, Exhibit 11.5, 7[27].
[356] T644.35-40.

general paediatric ward and the ICU. Staff members would rotate between the COU and the ICU to improve the level of paediatric critical care; and

(c) a dedicated paediatric stream in the ED with its own triage area has been created. The aim is to ensure that the ED's paediatric functions would be given priority to ensure that the paediatric area is not closed, even at times of staff resourcing pressure.

293. These developments have the potential to generally improve the standards of paediatric care at TCH. However, in respect of Rozalia's care, issues arose in a slightly different context, which may not be directly and positively addressed by these recent developments:

(a) the paediatric function within the ED was open at the time Rozalia was being treated. However, it was obviously very busy and the rostered clinical staff did not have a high level of exposure to paediatric medicine; and

(b) the ICU Outreach staff did not have a high level of exposure to paediatric medicine and, for that reason, were hesitant in engaging in assessments associated with Rozalia's care.

294. To avoid a repetition of what happened in Rozalia's case (that is, the delays in ED assessments and the lack of paediatric expertise in the ED and the ICU), CHS should ensure that staffing levels and paediatric skill profiles in both the Paediatric ED and the ICU, including its Outreach function, are maintained at levels that will ensure that paediatric patients who present through the ED, particularly out of normal business hours, are provided with an adequate standard of care.

295. The changes that have been made or proposed in respect of the ICU paediatric unit and the Paediatric ED function should assist in building that capacity. Recent recruitment activities have also added to enhance TCH's paediatric capability.

Recommendation

296. I recommend that those involved in the implementation of the new ICU and the Paediatric ED, as well as the planning of the paediatric COU, consider the evidence in this inquest and my findings.

297. Orders will be made to facilitate access to the brief of evidence and transcripts for senior CHS and TCH staff members.

HANDOVER ISSUES

298. In November 2022, TCH introduced the Digital Health Record ("DHR") system.

299. Dr Scanlan explained that the DHR is a single unifying system that allows for the requesting of investigations, results, documentation, notes, and parts of the handover process to be in one system. Clinical and administrative records are now directly entered into the DHR by doctors, nurses, and clerks.[357]

300. There is also a module in the ED, called "ASAP", that tracks patients progress through the ED.[358]

301. DHR has functionalities that may address some of the system shortfalls as seen in the context of Rozalia's care:

    (a) Against patient names, it identifies radiology or pathology requests made, and whether those results are available.[359]

    (b) It creates automatic warnings and escalation within DHR when paediatric observations are deteriorating.[360]

    (c) In respect of handover issues, the Day Sheet process remains (now corrected to ensure consistency). However, DHR will tell staff if they have not handed over a patient to another doctor on the system. An incoming doctor cannot be allocated patients until they have signed into the DHR. They must then assign each patient to themselves. It is not clear whether the outgoing doctor has to confirm that a patient has been accepted by the incoming doctor.

    (d) The DHR incorporates a track board, which is an overarching view of the department, listing all of the patients' name, age, triage category, presenting problem, and the clinician who is looking after them.[361]

302. Subject to the reservation that follows, I find that the introduction of the DHR has the potential to improve information flow between clinicians during the handover process.

303. The evidence showed that four disparate handovers were conducted in relation to Rozalia, each one conveying different "pieces of the puzzle'' that made up Rozalia's diagnosis. No notes were made in Rozalia's records of the content of any of those handovers, and there is no suggestion that handover notes are now uploaded to the DHR. Witnesses present at the same handover recalled different information having been provided. Clinicians who would have benefited from a handover, such as those in the Paediatric ED, did not participate in one. There is no evidence that the information

[357] Statement of Dr Scanlan, Exhibit 1, 784[15].
[358] T610.15-20.
[359] T620.9-12.
[360] Statement of Mr Peffer, Exhibit 11.7, 10[41].
[361] T612.40-45.

from handovers in Rozalia's case or now is shared formally between the specialties, departments, or locations. The impression is one of siloed information.

304. The experts gave evidence of systems that require patients to be handed over before clinicians can log out of the electronic system and of interaction and the exchange of information between different disciplines or specialties/departments caring for the same patient.

Recommendation

305. I recommend that CHS reviews the functionalities of the DHR in respect of handover processes, in light of the evidence given in this inquest.

INFLUENZA VACCINATIONS

306. The evidence given by the experts was that vaccinations for children aged between 6 months to 5 years old are free. However, the majority of children are not vaccinated and are, therefore, exposed to an illness that can cause significant complications, sometimes requiring hospitalisation, including myocarditis. The experts noted that whilst the influenza A vaccine might not be the best vaccine, in the sense of providing consistent protection,[362] its use amongst young children of this age group was a good idea, and GPs should be encouraged to talk to families about getting their children vaccinated. Dr Day put it this way:

> Rates are slowly increasing again [after COVID], but certainly anything that can be done to increase that uptake is valuable and the reasons for that are that they're a big group of spreaders, not just amongst themselves but also to younger siblings under six months and to older people, such as grandparents, who may be at high risk of getting complications from influenza, and certainly things like influenza cause a great burden of disease on GPs and emergency departments in the winter months, and a higher rate of vaccination amongst the six-month to five-year-old group would be helpful to the community in many ways.[363]

307. The experts did make the point, and it should be emphasised, that even if Rozalia had been vaccinated, she may still have contracted Influenza A.[364]

Recommendation

308. I recommend that CHS and ACT Health actively promote influenza vaccinations amongst children aged between 6 months and 5 years old.

[362] A/Prof Starr, T604.25.
[363] Dr Day, T604.11-19.
[364] A/Prof Starr, T604.31.

PART 11 – SECTION 55 NOTICES

309. My proposed findings contained comments adverse to a person (the Territory) and Dr Tze Hao Wong, Dr Anne Mitchell, Dr Callum Jarvis, Dr Abinesh Dhital and Dr Conan Hall. Consistent with my obligations under s 55 of the Act, I provided the Territory and those doctors with a copy of the proposed comment, with advice consistent with that section as to how the they may respond. The section 55 process affords people who are commented upon adversely in a "finding or report" to make a submission in respect of the proposed comment or give the Coroner a statement in relation to it. If a statement is given to the Coroner, it or a fair summary of it must be included in the report if the person so requests.

310. On 22 October 2024, pursuant to s 55 of the Act, a notice was served on the Territory and the doctors referred to above [309], together with my provisional findings. Responses were received from Dr Tze Hao Wong and Dr Callum Jarvis, both in the form of a submission. Two changes were made to the wording used in my provisional findings in light of the submissions made by Dr Wong and Dr Jarvis.

311. By letter dated 6 November 2024, the Territory pointed out two typographical errors or omissions in the provisional findings and forwarded a statement from Ms Janet Zagari, the Deputy Chief Executive Officer of Canberra Health Services. A request was made to include that statement in my findings. I formed the view that the content of that statement went beyond the scope of a response to the adverse comments that had been foreshadowed. The Territory were invited to re-consider their response. By letter dated 25 November 2024, a new statement signed by Ms Zagari on 22 November 2024 was provided. As requested by the Territory, I include a copy of that statement with these findings. My findings will, for the purposes of s 57 of the Act, constitute my report to the Attorney-General of the inquest I have conducted.

I certify that the preceding three hundred and eleven [311] numbered paragraphs are a true copy of the reasons for findings of his Honour Coroner Archer.

Associate: Markus Ching

Date: 6 December 2024

IN THE CORONERS COURT)
AT CANBERRA IN THE) CD 187/2022
AUSTRALIAN CAPITAL TERRITORY)

Inquest into the death of
ROZALIA SPADAFORA

Witness Statement – Janet Zagari
Deputy Chief Executive Officer, Canberra Health Services

1. This statement made by me accurately sets out the evidence that I would be prepared, if necessary, to give in court as a witness. The statement is true to the best of my knowledge and belief and I make it knowing that, if it is tendered in evidence, I will be liable to prosecution if I have wilfully stated in it anything that I know to be false or do not believe to be true.

2. This statement is provided pursuant to section 55(1)(b) of the *Coroners Act 1997* (ACT) in response to the Provisional Findings of Coroner Archer issued on 22 October 2024 (**Provisional Findings**). For the purposes of preparing this statement, I have been provided with and have reviewed the Provisional Findings.

3. My full name is Janet Leigh Zagari. I am currently employed at Canberra Health Services as the Deputy Chief Executive Officer located at 2 Bowes Street, Woden. I have been employed at CHS since 1 July, 2022. .

4. I am authorised to make this statement on behalf of TCH and CHS.

5. I prepared this Statement from my own knowledge, information and belief and by making inquiries of relevant persons. Where I have relied upon information provided by others, I believe that information to be true and correct.

Response to proposed comments adverse to TCH and CHS

6. TCH and CHS has acknowledged there were shortcomings in the care that Rozalia received at TCH.

7. TCH and CHS is committed to improving the delivery of Emergency Department (**ED**) healthcare to all patients including children, and to a process of continual improvement to ensure those shortcomings are fully addressed.

8. TCH and CHS accept the Coroner's proposed findings, however provide the following responses to paragraphs [275(h)] and [275(j)], [275(i)], [275(x)] and [293] of the Provisional Findings.

[275(h)] and [275(j)]

9. In respect of the Coroner's proposed findings at paragraphs [275(h)] and [275(j)] of the Provisional Findings, at the time of Rozalia's presentation and admission to TCH, TCH did not require, direct or train clinicians to routinely take a child's blood pressure at triage or when taking observations in the ED. As such, any failure by clinicians to take Rozalia's blood pressure was consistent with the processes that TCH had in place at the time of Rozalia's admission and was not a breach of TCH or CHS systems or protocols. TCH and CHS otherwise accept the Coroner's finding that Rozalia's blood pressure should have been taken at 21:55 hours.

[275(i)]

10. In respect of the Coroner's proposed finding at [275(i)] of the Provisional Findings, a Clinical Initiatives Nurse (**CIN**) role was not rostered overnight at the time of Rozalia's presentation and admission to TCH, but at the time, the CIN position was not one that TCH rostered on a 24-hour basis. The fact that the CIN role was not rostered overnight did not amount to a failure to comply with the systems that were in place at TCH at that time.

[275(x)]

11. In respect of the Coroner's proposed finding at [275(x)] of the Provisional Findings, CHS has implemented improvements to the system for processing troponin results since the introduction of DHR and after the evidence received at Inquest. The changes have streamlined the testing process in pathology

and include enhanced systems and alerts for notification and monitoring of troponin results. CHS considers the improvments significantly minimise the risk of delays in processing troponin results, even when they are requested as an "add-on". The improvements to the system for processing troponin are as follows:

a. Add-on requests now bypass Specimen Reception, and are managed directly by the pathology staff working in the laboratory. This prevents any delay in the Specimen Reception area, particularly out of hours;

b. Add-on requests appear directly in a 'add-on basket' within the DHR, which is monitored by scientists in the pathology laboratory;

c. The add-on basket provides an immediate visual cue for staff that an add-on order has been placed – the add-on basket icon will flash orange until the message is opened;

d. All add-on requests for troponin default to a new priority of 'STAT Add-on' to ensure the requests are flagged as urgent;

e. All urgent add-ons remain at the top of the inbox, flagged as urgent until they are actioned even if other, routine, requests are added;

f. Additional staff members are now employed out of hours to relive scientific staff for closer monitoring of an add-on tests; and

g. Pathology labarotory response times for processing add-on troponin tests are monitored.

12. CHS is committed to further streamlining DHR processes for troponin testing and has engaged with EPIC (the third-party vendor responsible for the DHR software) and has submitted an enhancement request for software changes which will completely automate the troponin add on processing system, so that when

an add-on order is placed by the clinician in the DHR, the pathology system moves the sample from the holding unit into the test track so the testing is completed without human intervention. The scientist is only required to review and approve the publishing of the result to DHR.

[293]

13. In respect of the Coroner's proposed finding at [293] of the Provisional Findings, since the Inquest there has been improvements for medical staffing and ongoing education, including:

    a. There has been additional recruitment of two paediatric FRACP (Fellow of the Royal Australian College of Physicians) PEMS (Paediatric Emergency Medicine Specialist), working 0.5FTE and 0.875 FTE respectively. FRACP PEMS are primary Paediatricians with Paediatric Emergency Medicine training who work only in Children's ED.

    b. Retention of three FACEM (Fellow Australian College Emergency Medicine) PEMS ie Emergency Physician with specific paediatric training, working 1.0 FTE, 0.8 FTE and 0.1FTE (this time is divided across Children's and Adult Emergency Department shifts).

    c. There is allocation of an ED Staff Specialist (FACEM) or FRACP PEM to the Children's Emergency area on all weekday shifts, covering from 8am to midnight. On weekends, there is an allocated FACEM/ PEM on the evening shift from 2pm to midnight. When sufficient cover is available, there is also a dedicated staff specialist on the morning shift. When this is not possible, the Children's ED is covered by a FACEM in an adjoining Pod of ED (one of the adult ED areas). Noting that all FACEM are trained to see acutely unwell children, the increased allocation of FACEM to the Children's ED has resulted in increased exposure to unwell children and improved recency in practise for the FACEM cohort.

    d. Challenges with senior allocation can occur when there is medical unplanned leave, in which case a risk assessment is made at the time to determine rostering. There is prioritisation of the

Children's ED and there is continued senior oversight in each area of the Emergency Department at all times.

e. A Registrar level medical officer is allocated to the Children's ED on each shift, which has increased from a Senior Resident Medical Officer with Registrar oversight overnight.

f. Approximately 12 months ago, CHS added a Paediatric Registrar to the Children's ED staffing allocation.

g. There has been increased exposure of Emergency Registrars to paediatrics, as Registrars are allocated to Children's ED in one month blocks and now provide 24/7 cover; this again helps with increased exposure to children. Caring for a large number of paediatric presentations in quick succession increases confidence in the assessment and treatment of children.

h. CHS already provided ED staff with education including paediatric specific components. This has now been strengthened/enhanced for all groups with multidisciplinary and interdisciplinary education:

    i. Continuing monthly emergency paediatric education sessions are offered for Registrars. These are run by the PEM team and include general paediatrics and paediatric critical care, including teaching by experts in the field. These sessions have been added to and enhanced over the last 2 years.

    ii. Education about care of children is provided for ED interns and residents at the start of their rotation, as well as senior residents throughout the term. There is an increased focus on the unwell child, in balance with general Emergency Medicine education.

    iii. The Emergency Department organised two Canberra Advanced Paediatric Life Support (APLS) courses this year (2024), which saw 48 nursing and medical staff members from

ICU and ED attend each of the 3 day courses for APLS, with ongoing plans to repeat this in 2025 according to availability.

iv. Opportunities for Paediatric Continuing Medical Education for the ED Specialist cohort within the yearly programme.

i. Since moving to the new Emergency Department, CHS has implemented a new role of Emergency Department Deputy Clinical Director, with the specific portfolio of Paediatrics. This follows the establishment of the Clinical Lead in Paediatrics, working on structural and clinical processes for our unwell children.

j. CHS has introduced 3 to 4 monthly interdisciplinary (Emergency, Paediatrics and Intensive Care) senior review of the care provided to triage category 1 and 2 paediatric presentations, and those requiring admission to ICU or critical transfer to the Sydney Children's network.

k. Specific PEM review of cases referred to the Emergency Department Quality (Mortality and Morbidity) team is also undertaken.

14. TCH and CHS believe that these changes will assist in addressing the delays and workload issues that were apparent during Rozalia's presentation, and will assist in developing the skill and capacity of ED and ICU clinicans in treating paediatric patients.

_____ *(Signature)*

Janet Zagari

Signature witnessed by me about 10:00 on
22/11/2024 at 2 Bowes Street, Woden in the Australian Capital Territory.

_____ *(Signature)*

Kate Schorsch