CORONER'S COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Caitlin Cruz
Hearing dates:	31 August 2020 to 4 September 2020; 25, 27, 28 January 2021
Date of findings:	9 November 2021
Place of findings:	Coroner's Court of New South Wales at Lidcombe
Findings of:	Magistrate Derek Lee, Deputy State Coroner
Catchwords:	CORONIAL LAW – cause and manner of death, information transfer from a pre-hospital setting to hospital setting, referral letter to hospital, senior clinician review, pericarditis, patient handover, triage, Ambulance Electronic Medical Record, documentation, neurological observations, consultant review, delay in performance of electrocardiogram, Wireless Acquisition Module battery, interpretation of electrocardiogram, Influenza B viral infection, The Children's Hospital at Westmead, Health Care Complaints Commission
File number:	2016/316614

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	Ms P Robertson, NSW Nurses & Midwives Association, for Registered Nurses L Brown, M Chang & C Daniels
	Mr P Rooney, instructed by Hicksons Lawyers, for the Sydney Children's Hospitals Network and New South Wales Ambulance
Findings:	Caitlin Cruz died on 23 October 2016 at The Children's Hospital at Westmead, Westmead NSW 2145. The cause of Caitlin's death was complications of Influenza B viral infection. Caitlin died of natural causes, in circumstances where a number of critical factors contributed to the tragic outcome. These factors include the inaccurate and unreliable transfer of information from a pre-hospital setting to a hospital setting, the inability to perform an electrocardiogram in a timely manner, the absence of adequate documentation and the absence of appropriate escalation of Caitlin's care for review. This in turn led to missed opportunities for further investigations to be performed, more timely recognition of Caitlin's deterioration and specific supporting therapies being instituted to manage Caitlin's condition that may have altered the eventual clinical course.
Recommendations:	See Appendix A

Table of Contents

1. Introduction

1.1 On 21 October 2016 Mitch Cruz took his three-year-old daughter, Caitlin, to a medical centre after she had been unwell for the previous few days. Caitlin was thought to have a viral illness of some kind. After returning home, Caitlin's condition worsened in the early hours of the following morning and her parents made arrangements to return to the medical centre later that day.

1.2 Shortly after presenting to the medical centre, and whilst waiting to be seen by a doctor, Caitlin suffered a collapse. Her vital signs were noted to be concerning and arrangements were made to convey Caitlin to The Children's Hospital at Westmead by ambulance.

1.3 Whilst at hospital, a number of investigations were performed. However at around 3:00pm on 22 October 2016 Caitlin suffered a second collapse and experienced a seizure-like episode. After Caitlin's condition was stabilised, she was later admitted to a ward overnight for further observations.

1.4 Following review on the morning of 23 October 2016, Caitlin experienced a sudden deterioration and became unresponsive. Resuscitation measures were initiated, however Caitlin could not be revived and was tragically pronounced life extinct at 11:15am, approximately 48 hours after she had first presented to the medical centre.

2. Why was an inquest held?

2.1 Under the *Coroners Act 2009* (**the Act**) a Coroner has the responsibility to investigate all reportable deaths. This investigation is conducted primarily so that a Coroner can answer questions that they are required to answer pursuant to the Act, namely: the identity of the person who died, when and where they died, and the cause and the manner of that person's death.

2.2 Certain deaths are reportable to a Coroner. Some examples of reportable deaths are where the cause of a person's death is not due to natural causes, or where the cause or manner of a person's death may not immediately be known. In Caitlin's case, the cause of her sudden deterioration on 23 October 2016, and eventual death, was initially not known. In addition, the events leading up to Caitlin's admission to The Children's Hospital at Westmead, and certain events during the course of her admission were also not entirely clear. For all of these reasons, an inquest was required to be held.

2.3 In this context it should be recognised at the outset that the operation of the Act, and the coronial process in general, represents an intrusion by the State into what is usually one of the most traumatic events in the lives of family members who have lost a loved one. At such times, it is reasonably expected that families will want to grieve and attempt to cope with their enormous loss in private. That grieving and loss does not diminish significantly over time. Therefore, it should be acknowledged that the coronial process and an inquest by their very nature unfortunately compels a family to re-live distressing memories several years after the trauma experienced as a result of a

death, and to do so in a public forum. This is an entirely uncommon, and usually foreign, experience for families who have lost a loved one.

2.4 It should also be recognised that for deaths which result in an inquest being held, the coronial process is often a lengthy one. The impact that such a process has on family members who have many unanswered questions regarding the circumstances in which a loved one has died cannot be overstated.

2.5 In this regard it should also be recognised that the impact of the COVID-19 pandemic, and the resultant public heath orders in 2021, precluded the inquest from being finalised in a more timely manner. This further delay can only have exacerbated the trauma experienced by Caitlin's parents. Despite these challenges, Caitlin's parents have demonstrated extraordinary patience, dignity and resolve.

2.6 Inquests have a forward-thinking, preventative focus. At the end of many inquests Coroners often exercise a power, provided for by section 82 of the Act, to make recommendations. These recommendations are made to organisations and individuals in order to draw attention to systemic issues that are identified during a coronial investigation, and examined during the course of an inquest. Recommendations in relation to any matter connected with a person's death may be made if a Coroner considers them to be necessary or desirable. Where an inquest is able to identify issues that may potentially adversely impact upon the safety and well-being of the wider community, recommendations are made in the hope that, if implemented after careful consideration, they will reduce the likelihood of other adverse or life-threatening outcomes.

3. Recognition of Caitlin's life

3.1 Inquests and the coronial process are as much about life as they are about death. A coronial system exists because we, as a community, recognise the fragility of human life and value enormously the preciousness of it. Recognising the impact that a death of a person has, and continues to have, on the family and loved ones of that person can only serve to strengthen the resolve we share as a community to strive to reduce the risk of preventable deaths in the future.

3.2 Understanding the impact that the death of a person has had on their family only comes from knowing something of that person's life and how the loss of that life has affected those who loved that person the most. Therefore it is extremely important to recognise and acknowledge Caitlin's life in a brief, but hopefully meaningful, way.

3.3 Caitlin was born on 5 January 2013 to Mitch and Marie Cruz. Caitlin's parents describe her as a blessing and there is no doubt that Caitlin brought enormous love and joy to her parents from the moment she was born. Caitlin's sister, Chloe, was born in February 2016 and she too adored her big sister. It is heartbreaking to know that Chloe was only eight months old at the time of Caitlin's passing, and that she will now only know her sister through treasured memories.

3.4 Caitlin was also known to be a fighter, even before she was born, and to have a resilience that surprised even her parents. They have described the challenges associated with bringing Caitlin into the world being reflected in her inner strength, and the fact that she loved every moment of life. Certainly, Caitlin's family surrounded Caitlin with love and the void that has been left by her passing is immeasurable.

3.5 Outside of her immediate family, it is equally clear that Caitlin brought much joy to others. Her zest for life meant that she left a lasting impression on her family and friends, and those who came to know what a wonderful, beautiful and special little girl she was. Caitlin's parents recall being contacted shortly before the inquest by the parent of one of Caitlin's friends from day care who recounted how much her daughter missed Caitlin, and how sad she was that she could not see Caitlin again. Given Caitlin's many positive and endearing qualities, it is unsurprising how both Caitlin's life, and her tragic passing, have so deeply affected those that knew her.

3.6 At the conclusion of the evidence in the inquest, Caitlin's parents honoured those present in court by sharing some brief words about Caitlin, and by playing a montage of private family memories captured in photos and videos. It was clearly evident to all those who had the privilege of watching these memories that Caitlin was a beautiful, intelligent, loving little girl, full of life and with a wonderful spirit. Whilst the video was immensely painful to watch, it was also apparent that the memories of Caitlin, and her enduring spirit, continue to still shine bright.

4. Factual summary and overview

4.1 As the events of 22 and 23 October 2016 will be discussed in greater detail later in these findings, and because there are factual disputes on the evidence regarding aspects of these events, it is intended here to provide only a brief factual overview.

Caitlin's previous medical history

4.2 On 18 October 2016 Caitlin and her younger sister, Chloe, came home from day care with high temperatures of around 39 degrees. The girls were given ibuprofen approximately every eight hours. Caitlin was also given an oral rehydration solution (Hydralyte) in her water, which was her parents' common practice when she had a fever.

4.3 The following day, 19 October 2016, both girls stayed at home to rest, and ibuprofen was given to them every eight hours.

4.4 On 20 October 2016 both girls stayed at home again and were noted to be recovering well. Caitlin was given ibuprofen during the day due to her slightly elevated temperature.

First presentation to the Myhealth Rhodes Medical Centre

4.5 On the morning of 21 October 2016 Caitlin was noted to be active and her usual self. Caitlin was taken to see a general practitioner (**GP**), Dr Tracey Ong, at the Myhealth Rhodes Medical Centre (**the Medical Centre**) at about 10:30am. Caitlin's parents told Dr Ong that Caitlin had a temperature of about 38.6 degrees the previous evening and had a slightly swollen left eye overnight which had subsequently improved. Caitlin's parents also reported that Caitlin had been more lethargic the previous day, and needed more naps than usual.

4.6 On examination, Dr Ong found that Caitlin had a runny nose, cough and a tender abdomen. No abnormalities were found in Caitlin's ears, nose or throat. Her chest appeared to be clear and her temperature was measured at 36.3 degrees. Dr Ong diagnosed Caitlin with a viral illness and recommended symptomatic relief, advising Caitlin's parents to bring her back for further review if her condition persisted or worsened.

4.7 After returning home, Caitlin was noted to be lethargic in the late afternoon, complaining that she was tired and sleepy. She slept for a couple of hours on the couch and needed to be woken for dinner. That night Caitlin only had a small amount of dinner, and a pouch of yoghurt later before bedtime. She was later put to bed as usual.

4.8 Shortly after midnight on 22 October 2016 Caitlin woke complaining of a stomach ache. She was found to be sweating slightly, but with no temperature. While sitting up in bed Caitlin began to dry retch several times before her father took her to the bathroom, where she tried to go to the toilet but complained of pain in her upper stomach area. After her parents provided Caitlin with a glass of water, she began to faint and was noted to be pale in appearance with her eyes slightly sunken. Caitlin was placed back to bed and later went to sleep. Caitlin's parents agreed that they should

take Caitlin back to the Medical Centre and made a booking for the first available appointment with a GP.

Second presentation to the Myhealth Rhodes Medical Centre

4.9 On the morning of 22 October 2016 Caitlin woke up and asked to play downstairs. However she later went to lie back down and showed no interest in moving. With the help of her father, Caitlin made her way downstairs but lay down on the living room couch and watched her iPad. Caitlin was given some yogurt and Hydralyte diluted in water. She later fell asleep and declined to eat most of her breakfast.

4.10 Caitlin's father later took her to the Medical Centre at around 12:00pm. On the way Caitlin remained alert and was able to engage in minor conversation with her father. Upon arriving at the Medical Centre, Caitlin and her father were asked to wait in the reception area. Caitlin sat on her father's lap and initially appeared to be talkative. However when Mr Cruz asked Caitlin to sit up, she threw up a small amount of brown liquid onto her shirt, and appeared to pass out and lose consciousness. Mr Cruz immediately alerted the Medical Centre receptionist and asked for help. The receptionist alerted two of the general practitioners at the medical centre, Dr Sumeena Qidwai and Dr Faisal Qidwai.

4.11 Dr Sumeena Qidwai and Dr Faisal Qidwai immediately attended Caitlin and found her to be unresponsive and displaying cyanosis in her lips. Caitlin was moved to a treatment room where Dr Sumeena Qidwai was unable to detect a pulse or heart rate, and noted that Caitlin's respiratory rate was very slow. Dr Faisal Qidwai also found no peripheral or carotid pulse, and observed no signs of Caitlin's chest rising. Dr Faisal Qidwai asked Dr Sumeena Qidwai to call the registrars at the Medical Centre for assistance, considering it likely that resuscitation would be needed.

4.12 Dr Faisal Qidwai began managing Caitlin's airway, lifting her chin and applying a paediatric mask with high flow oxygen, whilst at the same time applying gentle intermittent pressure on Caitlin's chest and rubbing her arm, in an attempt stimulate a response. Within a short time Caitlin began moving and by the time the registrars arrived resuscitation was no longer required. Although Caitlin was moving Dr Faisal Qidwai noted that her blood pressure still could not be detected and that her blood sugar level was low. Upon her return, Dr Sumeena Qidwai attempted to engage Caitlin in conversation and noted that she appeared coherent. Dr Sumeena Qidwai also cannulated Caitlin's right arm, which she tolerated easily and without distress, 20mls whilst intravenous fluids were being prepared.

4.13 Dr Sumeena Qidwai instructed the Medical Centre receptionist to call for an ambulance for a Category 1 situation with an unresponsive patient, and to arrive with lights and sirens. The call to Triple Zero was made at 1:14pm, with the Triple Zero operator advised that Caitlin was unresponsive and required oxygen, with a low heart rate and her lips cyanosed. The receptionist also conveyed Dr Sumeena Qidwai's request for the matter to be treated as a Category 1 priority with an ambulance to arrive immediately.

Attendance of New South Wales Ambulance paramedics at the Medical Centre

4.14 Paramedics Julia Hickman and David Lilly were allocated the job at 1:24pm and arrived at the Medical Centre at 1:28pm. Caitlin was noted to be awake and pale, and Dr Sumeena Qidwai provided a handover to the attending paramedics. Hartmann's solution was commenced intravenously and oxygen therapy was continued.

Events at the Children's Hospital at Westmead Emergency Department

4.15 The paramedics departed the Medical Centre at about 1:56pm, with Caitlin in the ambulance and Mr Cruz travelling separately in his own vehicle. The ambulance arrived at the Emergency Department at the Children's Hospital at Westmead (**the CHW**) at approximately 2:37pm. Caitlin was transferred from the ambulance to an observation bay where she was triaged by Registered Nurse (**RN**) Kim Chang. Caitlin was noted to be fully alert, with her chest clear, no abdominal pain and no breathing difficulties. Caitlin was triaged as a Category 4 patient, with an admitting diagnosis of lethargy/malaise. Mr Cruz arrived at the Hospital a short time later and joined Caitlin in the observation bay, where they remained to be seen by a medical officer.

4.16 The Emergency Department registrar (Dr Tacita Powell) reviewed Caitlin at around 2:56pm and took a brief history from Mr Cruz.

4.17 At around 3:00pm Mr Cruz attempted to take Caitlin to the bathroom when she suddenly became limp and unresponsive. Mr Cruz immediately alerted hospital staff. Oxygen therapy was provided to Caitlin and electronic vital sign monitoring was commenced. Caitlin was observed to be displaying seizure-like activity and was taken to a resuscitation bay for further assessment and monitoring. Caitlin was noted to be drowsy and afebrile following the cessation of the seizure-like activity after two or three minutes. Blood samples were taken for testing and another cannula was inserted.

4.18 At around 4:00pm Caitlin was noted to be fully alert and to be responding appropriately to questions. Caitlin remained in the resuscitation bay for approximately 90 minutes for further observations, before being moved back to an observation bay.

4.19 At around 4:30pm an electrocardiogram (**ECG**) was ordered and leads were applied to Caitlin in preparation for the ECG to be performed. However, it was subsequently discovered that the ECG in the Emergency Department was not functioning and no ECG was performed. A decision was made to admit Caitlin to the Hunter Baillie Ward (**the ward**), a general medical ward, for 24 hours of observation and administration of intravenous fluids. It was also decided that the ECG would be performed once Caitlin had been admitted to the ward. Mrs Cruz later arrived at the CHW at around 5:00pm.

Admission to the Hunter Baillie Ward

4.20 At around 6:30pm Caitlin was transferred to the ward. A handover was provided, and Caitlin was noted to be alert and responding appropriately. Further, Caitlin's observations on a Standard Paediatric Observation Chart (**SPOC**) were noted to be within normal limits.

4.21 Following Caitlin's admission to the ward an ECG was eventually performed at around 8:39pm. At the time, Caitlin's observations were again noted to be within normal limits. The ECG was later reviewed by a medical officer (Dr Megan Sheppard) at around 10:00pm who interpreted and documented the ECG as showing no abnormalities.

4.22 Caitlin remained in the ward overnight with electronic monitoring of her pulse rate and oxygen saturation. According to the SPOC, Caitlin's observations were documented as being within normal limits at 12:00am, 3:00am and 5:00am.

Events of 23 October 2016

4.23 At around 7:00am on 23 October 2016 the night shift nurse on the ward (RN Lindie Brown) performed a set of observations and noted that a number of Caitlin's vital signs were in the Yellow Zone on the SPOC, with her respiratory and heart rate elevated and trending upwards. Medical review was sought and Caitlin was subsequently reviewed by the night shift resident (Dr Joel Bedford) who noted that whilst Caitlin's observations were within normal limits, she was lethargic and unable to sit up by herself. Mrs Cruz also advised Dr Bedford that Caitlin needed to be carried to the toilet three times during the night due to weakness. Dr Bedford escalated these concerns to the general medical team which was due to commence the morning ward round at 8:00am.

4.24 Following handover, the general medical consultant (Dr Joanne Ging) and registrar (Dr Sunaina Nundeekasen) reviewed Caitlin around 8:30am. Caitlin was noted to be tachycardic, floppy, hypotonic and cool to touch. It was at that time that it was noted no blood pressure or neurological observations had been documented overnight. Oxygen therapy was commenced and Dr Ging reviewed the ECG, noting that it was non-reassuring. Urgent arrangements were made for a cardiology consult.

4.25 The ECG was subsequently reviewed by the cardiology fellow and an echocardiogram was called for. Arrangements were also made for a chest x-ray and a paediatric intensive care unit (**PICU**) consult. Short time later Caitlin was noted to be grey and less responsive and a rapid response call was made at 9:27am, with a team from the paediatric intensive care unit arriving within five minutes.

4.26 Caitlin was subsequently commenced on four-lead cardiac monitoring, with intravenous antibiotics and a fluid bolus of saline. She remained tachycardic, with her oxygen saturations difficult to obtain. Caitlin's blood pressure could not be recorded, and her pulse also could not be palpated or heard. Following administration of metaraminol, Caitlin's blood pressure was elevated, and she was stable enough to be transferred to the PICU at around 10:00am.

4.27 A short time later at around 10:07am, whilst Caitlin was being transferred to a PICU bed, she became unresponsive. Caitlin was found to be bradycardic and hypotensive, with poor peripheral perfusion, an unidentifiable pulse and unresponsive to stimuli. Another dose of metaraminol was administered together with atropine, and bag and mask ventilation was commenced.

4.28 Caitlin's condition continued to deteriorate and at 10:22am a cardiac arrest response was initiated with cardiac compressions and resuscitation measures commenced. This continued for the next 45 minutes during which time Caitlin was given multiple doses of adrenaline. Investigations during this period showed profound mixed acidosis with an echocardiogram showing pericardial collection.

4.29 Despite the resuscitation efforts, Caitlin's prognosis remained poor. Following discussions between the treating clinicians and Caitlin's parents at 11:06am, a decision was made to cease resuscitation measures. Tragically, Caitlin was subsequently pronounced life extinct at 11:15am.

5. Results of the postmortem examination

5.1 Caitlin was later taken to the Department of Forensic Medicine in Sydney where an autopsy was performed by Dr Kendall Bailey on 24 October 2016.

5.2 Microscopic examination revealed oedema and a dense chronic inflammatory infiltrate, with microbiology examination identifying Influenza B virus in swabs taken from the lungs. Florid inflammation in the airways was also identified, in a pattern consistent with viral infection, with additional patchy pneumonitis. Abnormal fluid collections were also identified around the heart (pericardial) and lungs (pleural), with the pericardial fluid collection considered to be infective in origin due to the presence of viral type inflammation on the surface of the heart.

5.3 In the autopsy report dated 2 June 2017 Dr Bailey opined that the cause of Caitlin's death was complications of Influenza B viral infection.

6. Investigations following Caitlin's death

6.1 Following Caitlin's death her parents expressed concerns to the CHW regarding the care and treatment provided to Caitlin during the course of her admission, prior to the resuscitation efforts on 23 October 2016. In accordance with usual procedures the CHW commenced its own investigation and analysis of matters relevant to these concerns. Following this, the CHW self-referred its investigation to the Health Care Complaints Commission (**HCCC**). Shortly afterwards, Caitlin's parents also lodged a complaint with the HCCC regarding the care and treatment provided to Caitlin at the Hospital.

6.2 Following a preliminary investigation the HCCC determined that both the self-referral made by the CHW and the complaint made by Caitlin's parents warranted further investigation. As a result, the HCCC commenced a formal investigation into the care provided to Caitlin both at an individual and organisational level.

6.3 On 28 September 2018 the HCCC provided a copy of its draft investigation report to the Chief Executive of the Sydney Children's Hospitals Network (**the Network**). The report proposed a number of comments and recommendations pursuant to section 42(1)(b) of the *Health Care Complaints Act 1993*, and provided the Network with an opportunity to make submissions in response to the matters proposed.

6.4 On 26 October 2018 the Chief Executive of the Network provided submissions responding to a number of the proposed comments and recommendations from the HCCC.

6.5 The HCCC later completed its final investigation report and made a number of formal recommendations to the Network. Following this, Dr Mary McCaskill, the Acting Director of Clinical Governance for the Network, provided two responses to the HCCC dated 1 August 2019 and 4 November 2019 regarding implementation by the Network of the recommendations.

7. What issues did the inquest examine?

7.1 Prior to the commencement of the inquest a list of issues was circulated amongst the sufficiently interested parties, identifying the scope of the inquest and the issues to be considered. That list identified the following issues:

(1) What was the cause of Caitlin's death?

(2) What occurred at the Myhealth Rhodes Medical Centre, did Caitlin collapse and what information was conveyed to the attending paramedics?

(3) Whether the care and treatment provided to Caitlin at the Children's Hospital at Westmead during her admission from 22 to 23 October 2016 was reasonable, appropriate and adequate, having regard to the following matters:

(a) The initial triage and assessment;

(b) The lack of review by a senior clinician whilst Caitlin was in the Emergency Department, including whether appropriate policies and training exist to ensure that senior medical review is sought, specialised consultations are requested, and patient care is escalated as required;

(c) Whether there was a delay in undertaking an ECG due to it being out of charge and, if so, whether there is a policy/system to ensure equipment is checked on a regular basis to ensure it is functioning;

(d) Whether there was a senior clinician review of the ECG conducted at around 8:30pm on 22 October 2016 and if not, why not, and whether earlier and appropriate senior clinician review would have led to earlier identification of heart dysfunction and other investigations and treatment that could have improved the care provided and averted the ultimate outcome;

(e) What cardiac monitoring, treatment or intervention was indicated during Caitlin's presentation to the ED or during her admission to the CHW;

(f) The transfer of Caitlin to the ward without senior clinician review and without a documented care plan; and

(g) Whether delay and/or the standard of care provided failed to identify early signs of deterioration and missed opportunities for diagnosis and treatment that would have provided Caitlin with significantly better prospects of survival and/or averted her death.

(4) Whether, and to what extent, the CHW has implemented the recommendations of the Health Care Complaints Commission following its investigation into Caitlin's death.

(5) Whether any additional recommendations are necessary or desirable arising from any matter connected with Caitlin's death, noting the extensive investigations and recommendations of the Health Care Complaints Commission.

7.2 Each of the above issues is discussed in detail below. In order to assist with consideration of some of these issues, independent expert opinion was sought from Dr Paul Brooks, consultant paediatric cardiologist, who provided two reports which were included in the brief of evidence.

8. Independent cardiologist report

8.1 Given that the performance and interpretation of an ECG on 22 October 2016 was a critical component of Caitlin's management, and was a recurrent issue during the inquest, it is convenient to begin with the available expert evidence in this regard.

8.2 As to the timing of when the ECG was ordered and when it was eventually performed, Dr Brooks expressed the following views:

(a) An ECG was appropriate in the emergency department given Caitlin's two episodes of collapse/altered consciousness on the day of admission. Before the ECG was obtained, initiating continuous ECG monitoring would have been reasonable given this history, although not mandatory.

(b) If an ECG had been performed in the emergency department it likely would have shown similar, if not identical, findings of widespread ST elevation across the ECG to those that were evident when the ECG was actually performed following Caitlin's transfer to the ward. Dr Brooks described this as the typical appearance in the early phase of acute pericarditis which lasts for hours to days.

(c) It was not appropriate that an ECG could not be performed in the resuscitation bay of a tertiary paediatric hospital emergency department when required.

(d) Had the ECG been performed in the emergency department, it would have likely led to it being reviewed by multiple medical staff (if done during normal working hours) thereby increasing the chance that the abnormal widespread ST elevation typical of acute pericarditis would have been considered as a possible diagnosis.

8.3 As to the two ECGs that were actually performed at around 8:39:15pm and 8:39:32pm on 22 October 2016, Dr Brooks considered that the only abnormality evident on both ECGs is widespread ST elevation across the anterior, lateral and inferior leads. Dr Brooks considered that these findings are "*most typical of acute pericarditis rather than the normal variant of early repolarisation (or benign early repolarisation) seen throughout life, but more commonly in children and teenagers*".

8.4 Dr Brooks noted that the only evidence that the ECGs were reviewed by medical staff is to be found in a handwritten notation on the tracing performed at 8:39:32pm which recorded "?BER". Otherwise, Dr Brooks noted that there was no evidence that other potential differential diagnoses of the widespread ST elevation on the ECG had been considered. Ultimately, Dr Brooks opined that review of the ECG by the paediatric cardiology service "*would have been appropriate as it is abnormal for a three-year-old*". Had this occurred, Dr Brooks expressed the view that the abnormal ECG consistent with acute pericarditis, together with Caitlin's two episodes of collapse/altered consciousness and her age, would have prompted the following steps in her management:

(a) a clinical review;

(b) the taking of a history;

(c) performing an echocardiogram to determine if there was significant pericardial effusion or poor left ventricular function, which could indicate involvement of the myocardium (perimyocarditis);

(d) that if an echocardiogram identified significant pericardial effusion or abnormal heart function, Caitlin's care should have been transferred to a monitored bed in the cardiology unit or paediatric intensive care unit; and

(e) further investigation conducted to identify the cause of Caitlin's likely viral illness and potentially specific therapies (such as drainage of a significant pericardial effusion, continuous invasive blood pressure monitoring and inotropic medication, early intubation to support cardiorespiratory function, intravenous immunoglobulin if acute myocarditis was diagnosed , and specific anti-viral therapy if a treatable virus was identified) depending on the findings.

8.5 Dr Brooks also expressed the view that once the abnormal ECG had been identified it was appropriate that continuous heart rate monitoring, oxygen saturation and respiratory rate monitoring remain in place. Continuous ECG monitoring would also have been appropriate pending the paediatric cardiology assessment.

8.6 Whilst it is not possible to be precise as to how large a pericardial effusion would have been present if an echocardiogram had been performed between about 5:30pm and 9:00pm on 22 October 2016, Dr Brooks opined that it would likely have been of some size (more than the normal physiological amount of pericardial fluid) given the ECG consistent with acute pericarditis, the duration of Caitlin's illness with Influenza B viral infection, and the finding of a very large pericardial effusion postmortem. Dr Brooks further opined that if the pericardial effusion had been identified then it may have led to a more rapid recognition of Caitlin's deterioration and specific therapies being commenced. This in turn may have altered the eventual clinical course if these specific therapies and supportive measures allowed Caitlin to recover from the complications of the influenza B viral infection that ultimately caused her tragic death.

9. Events at the Myhealth Rhodes Medical Centre

Caitlin's presentation

9.1 Whilst in the reception area of the Medical Centre Mr Cruz and Caitlin spoke together for a short time whilst waiting to see a doctor. Mr Cruz asked Caitlin to sit up and then describes the following events occurring: "*Shortly after [Caitlin] sat up properly she fainted. I think she lost consciousness. I got up and asked for help at reception in a panic*". Mrs Cruz recalls that her husband either called her or sent her a text message to inform her that Caitlin had thrown up on herself and then lost consciousness.

9.2 Dr Sumeena Qidwai gave evidence that when she was called to attend Caitlin, she noted the following:

(a) Caitlin appeared to be "floppy" and pale, with blue lips;

(b) Caitlin did not have a peripheral pulse or heart rate, and her blood pressure was not detectable; and

(c) Caitlin had a very low respiratory rate and "*probably took two breaths the whole time that I was just looking at her*".

9.3 In response, Dr Sumeena Qidwai instructed the receptionist to call for an ambulance and to advise that it was a Category 1 matter, and called for assistance from Dr Faisal Qidwai, describing that there was "*a collapsed girl*". The transcript of the Triple Zero call records that the receptionist advised the Triple Zero operator that a patient had become unresponsive, that her lips had turned blue, that her heart rate was "*very, very low*", that she had been placed on oxygen and that a doctor had requested a Category 1 response.

9.4 Upon attending Caitlin, Dr Faisal Qidwai gave evidence as to the following:

(a) He observed that Caitlin was lying on the bed in the treatment room, "*lifeless, not moving*", and that she was blue around the lips and her arms were pale;

(b) He was unable to identify a radial or carotid pulse;

(c) He asked Dr Sumeena Qidwai to call the registrars as Caitlin needed to be resuscitated;

(d) He maintained Caitlin's airway and applied a paediatric mask connected to high flow oxygen; and

(e) He attempted to rouse Caitlin by applying gentle pressure to her chest and peripheries.

9.5 Within a short period of time Caitlin began to breathe and move on her own and Dr Faisal Qidwai determined that it was not necessary to proceed with resuscitation measures. Despite this,

attempts were made to take Caitlin's blood pressure (most likely with a paediatric cuff) but no measurement could be recorded.

9.6 Dr Sumeena Qidwai obtained a history from Mr Cruz and was told that Caitlin had presented the previous day to Dr Ong after other family members had been sick with upper respiratory tract symptoms. Dr Sumeena Qidwai also noted that Mr Cruz reported Caitlin having a history of febrile convulsions, but none in the past week, and that Caitlin had deteriorated in the previous few hours.

9.7 Dr Sumeena Qidwai inserted a cannula into Caitlin's right arm so that fluids and other medication could be provided. In relation to this, Dr Sumeena Qidwai noted, "*I worked at Sydney Children's Hospital for a year and inserted many cannulas. I have never done a cannula where a child did not flinch. She didn't even flinch*". Dr Faisal Qidwai also considered it unusual that Caitlin showed no reaction to insertion of a cannula.

9.8 Dr Sumeena Qidwai's consultation notes, written in retrospect (**the Medical Centre notes**), record the following: "*Gradually became unresponsive over last 15 minutes. Lips/peripheries turning blue, unresponsive initially to verbal & physical stimulation…slow RR & HR. Weak faint pulse. No BP detected*".

9.9 **Conclusions:** The accounts provided by Mr Cruz, Dr Sumeena Qidwai and Dr Faisal Qidwai, together with the Medical Centre notes completed relatively contemporaneously, are all consistent in establishing that Caitlin experienced an unexpected syncopal episode in the reception area. Upon attending Caitlin, both Dr Sumeena Qidwai and Dr Faisal Qidwai noted that Caitlin was unresponsive and displaying cyanosis around the lips, that her pulse and blood pressure could not be detected and that she had a low respiratory rate. Dr Faisal Qidwai considered that immediate resuscitation efforts were to be initiated before Caitlin began to respond to the attempts made to rouse her.

Information conveyed to attending paramedics

9.10 As the GPs at the Medical Centre made critical observations regarding Caitlin's presentation, a central issue in the inquest was to what extent these observations were conveyed to the attending paramedics, and to the treating clinicians at hospital. An examination of the evidence given by those in attendance at the Medical Centre reveals that there are several areas of conflict.

9.11 Dr Sumeena Qidwai gave evidence that she:

(a) told Paramedic Hickman that Caitlin was unresponsive and that her lips were cyanosed when she first attended upon Caitlin;

(b) told Paramedic Hickman that she could not detect Caitlin's heart rate and that her breathing was very slow which led her to believe that Caitlin may have been in "*imminent cardiopulmonary arrest*", to which Paramedic Hickman replied, "*I hope she doesn't do that to us*";

(c) informed the attending paramedics of the history that had been provided by Mr Cruz;

(d) Informed the attending paramedics that there was no evidence of diarrhoea to indicate that Caitlin was suffering from a gastrointestinal complaint, and that her condition appeared to be quite serious and more than mere dehydration; and

(e) that she was very concerned about Caitlin's condition.

9.12 Dr Faisal Qidwai gave evidence that he was present during the handover provided by Dr Sumeena Qidwai, but that he made no contemporaneous note of the handover, and could not recall anything that was specifically said, other than there being reference made to a cannula having been inserted. Overall, Dr Faisal Qidwai described the interaction with the attending paramedics at the Medical Centre in this way: "*[The paramedics] weren't really too impressed and [Paramedic Hickman] was a little bit dismissive of the whole thing and, and then [Paramedic Lilly] was sort of more nicer. That's what I felt. I mean, we're only GPs. I got that feeling*".

9.13 In contrast to some of the evidence given by both Dr Sumeena Qidwai and Dr Faisal Qidwai, Paramedic Hickman gave evidence that:

(a) prior to arriving at the Medical Centre she was provided with information by the NSW Ambulance (**NSWA**) dispatcher consistent with that contained in the NSWA Incident Detail Report which noted the following: "3YOF UNRESPONSIVE LIPS BLUE PT REQUIRES STRETCHER FOR TRANSPORT HEART RATE LOW";

(b) she was aware from the above information that Caitlin was described as having a low heart rate;

(c) upon arriving at the Medical Centre, she could not recall whether Caitlin was being administered oxygen or not, but believed that she saw an oxygen mask on Caitlin's face;

(d) Dr Sumeena Qidwai informed her that Caitlin had been unresponsive with blue lips but that she had subsequently "*come up well*";

(e) if she had been told that Caitlin had no carotid or radial pulse, or that Caitlin's heart rate that was not detectable, she would have immediately escalated treatment and requested backup from intensive care paramedics; and

(f) she obtained a history from Mr Cruz, and was told that Caitlin had a history of febrile convulsions at a young age, and that she had been unwell with fevers, abdominal pain, resistance to oral intake and no bowel movements in the four days prior;

9.14 After Caitlin had been transferred to the CHW and her care handed over to hospital staff, Paramedic Hickman completed a case description entry in the Ambulance Electronic Medical Record (**the AEMR entry**), which recorded the following:

"*3 Y/O FEMALE PRESENTED TO LMO WITH FATHER POST 4/7 FEVER, ABDO PAIN, RESISTING FOOD AND FLUID AND NIL B/M LAST 4/7. FATHER STATED PT HAS ONLY HAD STRAWBERRY YOGHURT AND NUROFEN TODAY. LMO STATED THAT UPON [INITIAL] PRESENTATION PT PALE/CYANOTIC AND UNROUSEABLE. O/A CDA PT AWAKE, PALE, IVC IN SITU, DRY ORAL MUCOSA, 1 X BROWN VOMIT REMAINS ON [FRONT] OF SHIRT. PT GCS 15 BUT DROWSY EN ROUTE. FLUID BOLUS OF 140ML INITIATED WITH FURTHER 20ML EN ROUTE. PT STABLE, COMFORTABLE AND DROWSY EN ROUTE*".

9.15 In her statement, Paramedic Hickman said the following: "*[Dr Sumeena Qidwai] did advise that [Caitlin] did have a period of unresponsive is and was cyanotic, as described in [the AEMR entry], but I do not remember her saying that Caitlin had a lack of respirations, pulse or [blood pressure] and if she did we would have escalated the treatment, including requesting intensive care paramedics to attend*".

9.16 It is evident from Paramedic Hickman's statement, her evidence at inquest and the AEMR entry itself that the AEMR entry made no explicit mention of the following significant features of Caitlin's presentation at the Medical Centre (**Caitlin's vital signs at the Medical Centre**):

(a) that she had a low heart rate;

(b) that she had a low respiratory rate;

(c) that her pulse could not be detected;

(d) that her blood pressure could not be detected; and

(e) that the GPs considered that she may have been at risk of imminent cardiopulmonary arrest prior to the arrival of the paramedics.

9.17 In evidence, Paramedic Hickman rejected the suggestion that either Dr Sumeena Qidwai or Dr Faisal Qidwai had disclosed features of Caitlin's vital signs at the Medical Centre. Paramedic Hickman sought to explain that if she had been informed that Caitlin had experienced a period without a pulse or respiratory effort then this would have been considered a paediatric arrest, which automatically required intervention by intensive care paramedics. In such circumstances, Paramedic Hickman explained that she would have requested such intervention, even if Caitlin was subsequently found to be alert and responsive upon attending the Medical Centre. The fact that Paramedic Hickman made no such request led her to reason that she had not been provided with Caitlin's vital signs at the Medical Centre.

9.18 However, later in her evidence (when questioned by senior counsel for Dr Sumeena Qidwai and Dr Faisal Qidwai) Paramedic Hickman acknowledged that even if Caitlin's vital signs at the Medical Centre had been conveyed to her, the fact that Caitlin had subsequently "*come around quickly*" influenced her eventual decision to convey Caitlin to the CHW, rather than seek intervention from intensive care paramedics. Therefore, it would appear that the decision Paramedic Hickman made to not seek intensive care paramedic intervention was based on Caitlin's improved presentation, rather than having not been told about Caitlin's vital signs at the Medical Centre. Further, Paramedic Hickman also agreed in evidence that her statement (made on 27 July 2017) about not

having been told about Caitlin's vital signs at the Medical Centre was based not on her actual recollection, but on the contents of the AEMR entry, together with her usual practice.

9.19 Despite being curious about why a child who was unresponsive, cyanosed and with a low heart rate had suddenly come up well, Paramedic Hickman agreed that she did not ask anyone at the Medical Centre whether Caitlin's pulse or blood pressure had been taken. Indeed, Paramedic Hickman explained that Caitlin's blood pressure was not taken at the Medical Centre as it was her usual practice to not take the blood pressure of a paediatric patient if she considered that it would cause distress to the child. Notwithstanding, Paramedic Hickman acknowledged that she had made an oversight in the Vital Signs Survey within the AEMR by recording Caitlin's blood pressure as "unrecordable", when in fact no attempt had been made to take Caitlin's blood pressure at all. Further, Paramedic Hickman also explained that the Vital Signs Survey also contained another oversight in that it recorded that a carotid pulse had been taken for Caitlin, when in fact her pulse had been taken radially.

9.20 Paramedic Hickman explained that, in her experience, upon arriving at the Medical Centre she expected one of the GPs to volunteer information regarding Caitlin's vital signs. However, in retrospect, Paramedic Hickman agreed that this was not a good idea and accepted that "*more probing questions [from her] were probably appropriate*", particularly in circumstances where a GP may be unaware what information a NSWA dispatcher has conveyed to an attending paramedic. Paramedic Hickman further agreed that such questions would include matters such as how long a patient had been unresponsive and whether vital signs had been taken.

9.21 Paramedic Lilly gave evidence that:

(a) the combination of Caitlin being unresponsive, cyanosed and with low heart rate would indicate a matter of some urgency;

(b) Dr Sumeena Qidwai provided a handover in which she described Caitlin having collapsed in the waiting room, but then "*responded well*" subsequently;

(c) he agreed that in dealing with a patient who has suffered some form of collapse, it is part of a paramedic's responsibility is to ask questions in order to precisely understand the nature of such a collapse;

(d) he agreed with Paramedic Hickman that they were not informed that Caitlin had no peripheral pulse and no detectable blood pressure, and that if they had been told such information the assistance of intensive care paramedics would have been sought;

(e) he surmised that Caitlin's blood pressure was not taken because there was no paediatric kit within the ambulance, but agreed that there was nothing precluding the paramedics from inquiring whether a paediatric cuff was available at the Medical Centre;

(f) he agreed, that as the driver, he generally would not have the same level of focus on the clinical information provided during a handover and observations of a patient as the treating officer who is required to complete the AEMR entry.

9.22 Paramedic Lilly ultimately accepted that it was possible that he and Paramedic Hickman had been provided with information regarding Caitlin's vital signs at the Medical Centre. Paramedic Lilly also acknowledged the possibility that, having been told this information, and the fact that Caitlin had responded quickly, it was reasonable to convey her to hospital rather than escalate her treatment by seeking the attendance of intensive care paramedics. Further, Paramedic Lilly confirmed that transfer to hospital, rather than escalation to intensive care paramedics, would have been appropriate provided that Caitlin's condition could be adequately managed by doing so.

9.23 It is most likely that Dr Sumeena Qidwai conveyed information regarding Caitlin's vital signs at the Medical Centre to Paramedic Hickman and Paramedic Lilly having regard to the following matters:

(a) Dr Sumeena Qidwai completed the Medical Centre notes relatively contemporaneously at around 1:39pm, shortly after the paramedics departed with Caitlin, in which she noted that Caitlin had a slow respiratory rate and heart rate, a weak faint pulse and undetectable blood pressure.

(b) In contrast, Paramedic Hickman made no notes when taking a history from Dr Sumeena Qidwai and only completed the AEMR entry sometime later, at around 2:37pm after Caitlin had been handed over to clinical staff at the CHW. The solicitor for Paramedic Hickman noted that Paramedic Hickman gave evidence that whilst it is her usual practice to make notes on items such as a glove or stretcher sheet, these items are usually not retained due to contamination reasons. Accordingly, it was submitted that no criticism should be made of the lack of retention in such instances. This submission is accepted but it remains the case that the only relatively contemporaneous written record that provides assistance in resolving the conflicting evidence is the one completed by Dr Sumeena Qidwai.

(c) Paramedic Hickman acknowledged that she was required to take a full set of observations but did not do so. Specifically, Paramedic Hickman accepted that there were inaccuracies with the Vital Signs Survey within the AEMR.

(d) Paramedic Hickman explained that, based on some of Caitlin's symptoms of vomiting and abdominal pain, her initial assessment of Caitlin was that she was suffering from "*some sort of gastric upset*", but acknowledged that such an assessment would not readily explain Caitlin's unresponsiveness, blue lips and low heart rate.

(e) Paramedic Hickman acknowledged that her recollection of events at the Medical Centre was based more on her usual practice rather than actual recollection.

(f) Both Paramedic Hickman and Paramedic Lilly initially sought to rely upon the absence of escalation to intensive care paramedics as the main reason why, on their versions, information about Caitlin's vital signs at the Medical Centre had not been disclosed to them. In other words, if it had been disclosed, escalation would have occurred. However, both paramedics later in their evidence conceded that even if such information had been disclosed, Caitlin's rapid response and improvement meant that transfer to hospital, rather than escalation, was

appropriate. Indeed, Paramedic Hickman explained that this is ultimately the decision that she made.

(g) Paramedic Lilly's evidence leaves open the possibility that he and paramedic Hickman were in fact provided with information regarding Caitlin's vital signs at the Medical Centre.

9.24 **Conclusions:** Having regard to the above evidence, it is most likely that the attending paramedics were provided with information about Caitlin's vital signs at the Medical Centre; specifically that she had a low respiratory rate, that her pulse and blood pressure could not be detected, and that she had been at risk of imminent cardiopulmonary arrest. This critical information was subsequently omitted from the AEMR entry. Whilst at the Medical Centre, more probing questions were not asked by the attending paramedics in order to understand the precise nature of Caitlin's syncopal episode.

Referral letter

9.25 There is no dispute on the evidence that a referral letter from one of the GPs at the Medical Centre did not accompany Caitlin on her transfer to the CHW. Dr Sumeena Qidwai gave evidence that she asked Paramedic Hickman if she would like for a referral letter to be written and that this offer was declined. Notwithstanding, both Dr Sumeena Qidwai and Paramedic Hickman agreed in evidence that it would have been inappropriate to delay Caitlin's transfer to hospital in order to wait for a referral letter to be written. However, whilst there is agreement in the evidence about the need for a referral letter, there is disagreement about whether there was any discussion at the Medical Centre as to which hospital Caitlin was to be transferred to.

9.26 Dr Sumeena Qidwai gave evidence that she asked the paramedics to take Caitlin to the CHW, but was told by Paramedic Hickman that the paramedics did not know which hospital Caitlin would ultimately be transferred to. Therefore, Dr Sumeena Qidwai said that at the time that the paramedics departed the Medical Centre with Caitlin she was unaware where Caitlin was being taken. As a result, Dr Sumeena Qidwai said that she attempted to hand Dr Ong's business card to Paramedic Hickman, intending for it to be passed on to the admitting officer at the hospital where Caitlin was to be taken so that the admitting officer could contact the Medical Centre. Dr Sumeena Qidwai explained that, following the departure of the paramedics, she anticipated being at the Medical Centre for a least another one to two hours, and could have easily written a referral letter had she been contacted by an admitting officer. However, Dr Sumeena Qidwai gave evidence that Paramedic Hickman declined to take the business card (which Dr Sumeena Qidwai described as being "quite unusual"), and that Dr Sumeena Qidwai instead gave the business card to Paramedic Lilly. Notwithstanding, Dr Sumeena Qidwai acknowledged that in hindsight she could have called the CHW to confirm whether Caitlin had been in fact been taken there, so that she could provide a handover to the admitting officer.

9.27 In the Medical Centre notes, Dr Sumeena Qidwai recorded the following entry: "sent to ?WCH". In evidence, Dr Sumeena Qidwai refuted the suggestion (made by the solicitor for Paramedic Hickman and Paramedic Lilly) that the entry meant that the paramedics told her that Caitlin would

be transferred to the CHW. Instead, Dr Sumeena Qidwai explained that the entry was consistent with her request to Paramedic Hickman that Caitlin be taken to the CHW.

9.28 In contrast to the above, Paramedic Hickman gave evidence that she discussed with Paramedic Lilly which hospital Caitlin should be transferred to. They eventually decided to transfer Caitlin to the CHW after eliminating Concord Hospital (because it did not accept paediatric patients via ambulance transfer), and Canterbury Hospital and Auburn Hospital as possible options. Paramedic Hickman explained that the CHW was decided upon because Caitlin "*needed to go to a tertiary level hospital*" and that "[the paramedics] had a high degree of suspicion and a higher level of treatment [sic]". Paramedic Hickman gave evidence that the decision to take Caitlin to the CHW was made in the treatment room at the Medical Centre, and refuted the suggestion that there might have been some uncertainty about Caitlin's eventual destination as she recalled giving Mr Cruz specific directions as to how to get to Westmead. However, in evidence Paramedic Hickman expressed some uncertainty about whether Dr Sumeena Qidwai was still in the treatment room when the decision was made, being only "*fairly sure*" that Dr Sumeena Qidwai was still present.

9.29 In his statement, Mr Cruz said that he recalled being told by the paramedics that Caitlin would be taken to the CHW, and that a decision was made for him to follow the ambulance in his car to Westmead. In her statement, Mrs Cruz said that she was contacted by her husband and informed that the ambulance would take Caitlin to the CHW and that her husband would follow in his car.

9.30 Paramedic Hickman gave evidence that she could not recall Dr Sumeena Qidwai offering her a business card and that, in her professional experience, she had never previously been offered a card in similar circumstances. Paramedic Hickman explained that if she had been offered a card, she most likely would have passed it on to an appropriate person at the CHW. Paramedic Lilly's evidence was as follows: "*So I don't specifically recall receiving the card but I am aware that I was given a card and then I gave the card to Caitlin's father… I think it would make sense for Caitlin's father to take the card because that's the information for the medical centre that the clerical state [sic] at the hospital were going to ask for when they do all the paperwork*". However, Paramedic Lilly went on to explain that provision of the business card was unnecessary in any event because he already had the contact details for the Medical Centre.

9.31 Given the consistency between the evidence given by Paramedic Hickman and Mr and Mrs Cruz, it is most likely that a decision was made by the paramedics, whilst still at the Medical Centre, to transfer Caitlin to the CHW. It is also most likely that this decision was either made in the absence of Dr Sumeena Qidwai, or that she was not explicitly told of this decision. This is consistent with the entry made by Dr Sumeena Qidwai in the Medical Centre notes which appears to query whether the CHW was the ultimate intended destination hospital for Caitlin. It is also consistent with Dr Sumeena Qidwai's attempt to pass the business card to, initially, Paramedic Hickman. Whilst Paramedic Hickman could not definitively recall being offered the card, the evidence in any event establishes that it was taken by Paramedic Lilly.

9.32 What ultimately happened to the card is unclear on the available evidence. However, there are two significant matters to note. First, it does not appear that the contact details for the Medical Centre, despite already being known to the paramedics, were conveyed to any clinician at the CHW following Caitlin's arrival. Second, and more importantly, the nursing and medical staff at the CHW

did not receive any information directly from any of the GPs from the Medical Centre regarding Caitlin's syncopal episode or Caitlin's vital signs at the medical centre.

9.33 The absence of this information was a critical factor in the course of Caitlin's management at the CHW. Relevantly, Dr Nundeekasen explained that if the information contained in the Medical Centre notes had been contained in a referral letter (or provided in a telephone handover by Dr Sumeena Qidwai), then potentially she would not have been involved in Caitlin's care. Rather, Caitlin's admission to the CHW would have been triaged differently. Given there was reference in the Medical Centre notes to what Dr Nundeekasen described as "*peri-arrest*", it is likely that Caitlin would have been admitted directly to the resuscitation area and that an emergency call would have been made to a consultant to direct Caitlin's management.

9.34 **Conclusions:** The evidence relating to the decision-making process involved in conveying Caitlin to the CHW highlighted a number of challenges associated with the accurate transfer of information from a pre-hospital setting to a hospital setting. The information that was available to be transferred in Caitlin's case was of high quality given that Caitlin's syncopal episode, and her subsequent recovery, had been witnessed by the GPs at the Medical Centre. Therefore, they were in an excellent position to impart relevant and important clinical information to the admitting officer, or consultant under whose care Caitlin would be admitted, at the CHW. Most regrettably, this imparting of information did not occur.

9.35 It would appear that the imparting of such information, in cases where a patient is transferred by ambulance from the medical centre to a hospital, relies upon a number of factors. First, the existence of reliable, accurate information of good quality. Second, details of the destination hospital that a patient is being transferred to being available to a medical practitioner who is able to impart such information. Third, clinicians at the destination hospital being informed that a medical practitioner has important information to impart, and details being provided about how that medical practitioner may be contacted. Fourth, recognition by persons able to facilitate the transfer of such information, such as attending paramedics, of the importance in ensuring that the communication between the pre-hospital setting and hospital setting is established. Having regard to each of these critical matters, it is necessary to make the following recommendation.

9.36 **Recommendation 1:** I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the Chief Executive Officer, Royal Australian College of General Practitioners (**RACGP**), inviting the RACGP to consider providing a reminder to general practitioners, in circumstances where a patient is transferred by ambulance directly from a general practice/medical centre to hospital, of the need: (a) to identify the hospital where the patient is to be transferred; (b) for a referral letter to be sent to that hospital expeditiously; and (c) to communicate with the receiving hospital via phone expeditiously.

9.37 Counsel for Caitlin's parents has, in written submissions, given thoughtful consideration to the issues surrounding the need for accurate transfer of information from a pre-hospital setting to a hospital setting. Clearly, this is understandably a matter of particular concern for Caitlin's parents, and a matter that was central to Caitlin's management following her arrival at the CHW, and to the issues which the inquest examined. In submissions, counsel for Caitlin's parents proposed a further recommendation to NSW Health, NSWA and the RACGP for each organisation to explore the feasibility of developing a single electronic system (accessible by general practitioners, paramedics and hospitals) to facilitate accurate transfer of patient information and handover of care.

9.38 The goal of achieving such a universal electronic platform that would allow for the sharing of patient information in a timely and accurate manner is not, and should not be, purely aspirational. So much is clear from the evidence (discussed further below) given by a senior consultant involved in Caitlin's care and the Acting Director of Clinical Governance at the CHW. That evidence also makes clear that work has already been, and is in the process of being, undertaken to consolidate and integrate electronic medical records across different Local Health Districts. The feasibility of the ultimate goal necessarily involves appropriate consideration being given to certain practical issues and complexities (such as patient privacy issues and compatible technology limitations) of which the inquest received no evidence. However, this does not preclude such consideration being given by the relevant organisations that are best placed to do so. Therefore, given the centrality and importance of this matter to the issues which the inquest examined, it is desirable to make the following recommendation.

9.39 **Recommendation 2:** I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the Chief Executive Officer, Royal Australian College of General Practitioners (**RACGP**); Chief Executive, NSW Ambulance; and Secretary, NSW Health to inform consideration of whether the feasibility of a consolidated electronic platform to (a) facilitate the accurate and timely transfer of clinical information; and (b) enhance patient safety during clinical handover; from a pre-hospital setting to a hospital setting, ought to be explored by these organisations in collaboration.

10. Initial triage and handover at The Children's Hospital at Westmead

10.1 The next issue focuses on what information was available to clinical staff at the CHW upon Caitlin's arrival and handover, and how this information was used to triage Caitlin and guide the initial, and later, steps of her management.

10.2 RN Bradley Toole was rostered to work as the resuscitation nurse in the emergency department at the CHW on 22 October 2016. Part of his role was to triage patients transferred to the CHW by ambulance. However, as RN Toole could not be located when Caitlin was brought in, RN Kim Chang (who was rostered to work in the Short Stay ward in the emergency department) stepped in to commence triaging Caitlin. RN Chang had previously worked as the resuscitation nurse and triaged other patients.

10.3 Paramedic Hickman said that she provided a history to RN Chang which included that Caitlin had experienced a period of unresponsiveness and central cyanosis at the Medical Centre, and that she required oxygen support. Paramedic Hickman also said that it was possible that she informed RN Chang that Caitlin had been given a Hartmann's bolus of 140mls as that was consistent with the AEMR entry. Overall, Paramedic Hickman explained that the handover that she provided to RN Chang would contained the same information that would ultimately be recorded in the AEMR entry, namely "*the reason for presentation, what's going on with the patient today, signs and symptoms, any injuries, treatment"*.

10.4 Paramedic Lilly gave evidence that he was present with Paramedic Hickman and RN Chang at the handover, "*having a conversation about what's [sic] happened*" but otherwise had no specific recollection about what was discussed.

10.5 RN Chang gave evidence that it was Paramedic Lilly who provided the handover and that as he did so, she wrote down what information she was told. According to RN Chang, she was informed that Caitlin had a fever between 38 to 40 degrees, had vomited once, had not opened her bowels for four days, and that she had been given pethidine and a 140ml bolus of Hartmann's solution en route to the CHW. Further, RN Chang said that she was told that the ambulance had been called to the Medical Centre due to a concern that Caitlin "*was flat, not engaged to talk [sic]*". RN Chang said that she did not know, and did not ask, whether Caitlin had been brought in by lights and sirens. RN Chang stated definitively that the paramedics made no mention of the information contained in the AEMR entry that Caitlin has been "*pale/cyanotic and unrouseable*".

10.6 Following this, RN Chang briefly interacted with Caitlin and checked her pulse and capillary return. After forming the view that Caitlin's presentation did not fit with the history that she had just been provided by the paramedics, RN Chang went to consult the Nursing Unit Manager (**NUM**), Celeste Daniels, to seek a second opinion.

10.7 When NUM Daniels attended Caitlin's bedside, RN Chang read her notes of the handover that had been provided by the paramedics. After conducting a brief examination, NUM Daniels initially indicated that Caitlin was to be taken to the general waiting area for non-urgent patients. However, after noting that Caitlin had a cannula in her arm, NUM Daniels instead directed Caitlin

towards the Short Stay ward. As a result, RN Chang instructed the paramedics to transfer Caitlin to Bed 2 in the Short Stay ward.

10.8 Following this, RN Chang checked Caitlin's temperature and respiratory rate, listened to her chest, and then returned to a desk in order to type up her triage notes and Caitlin's vital signs. RN Chang's triage notes recorded the following:

"*hx from ambo officer:*
sick with fever since Thursday temp was 38-40. 0, no
fevers today vomited 1x this am, BNO 4 days
saw GP today, ambo called as GP concerned child "was
flat, not engage talking"
hartman bolus 140ml given by ambo
well normally"

10.9 RN Chang gave evidence that the reference to "*was flat, not engage talking*" in quotation marks within the triage notes was intended to convey the exact words used by the paramedics during handover. Ultimately, RN Chang triaged Caitlin as a Category 4 patient, meaning that she was to be reviewed by a medical officer within 60 minutes.

10.10 When taken to the AEMR entry in her evidence RN Chang described its contents as disclosing a "*significant history*". Importantly, RN Chang gave evidence that if she had been informed by the paramedics that Caitlin had a history of being pale/cyanotic and unrouseable then she would have triaged Caitlin as a higher acuity patient. After completing her triage, RN Chang returned to attend to the other three patients in the Short Stay ward.

10.11 **Conclusions:** Given the preceding events at the Medical Centre it was critical for clinical staff at the CHW to understand the seriousness of Caitlin's presentation. In particular, accurate information was required as to whether Caitlin had experienced a syncopal episode, whether any of her vital signs could not be taken, and whether she had been at risk of immediate cardiac arrest or in imminent need of cardiopulmonary resuscitation.

10.12 It is not in dispute that RN Chang did not see the AEMR entry at any time on 22 October 2016. At the time of handover Paramedic Hickman had not yet completed the AEMR entry. If information contained within the AEMR entry (in particular, that Caitlin had a recent history of being pale/cyanotic and unrouseable) had been available to RN Chang this would have resulted in Caitlin being triaged as a higher acuity patient. The evidence given by the paramedics as to what information was conveyed during handover was either lacking in detail or limited to a general assertion that it was the same as the information that would later be recorded in the AEMR entry.

10.13 In contrast, RN Chang gave evidence that she took handwritten notes as the handover occurred, and then typed up these notes as her triage notes. Given this contemporaneity, it is most likely that the information recorded in the triage notes is the information that the paramedics provided to RN Chang at handover. Regrettably, this meant that the significance of events at the Medical Centre was not clearly or properly understood. This paucity of information in turn adversely affected Caitlin's subsequent clinical course and management, leading to a lack of appreciation regarding the extent of her pathology.

The NSW Ambulance Electronic Medical Record

10.14 Paramedic Hickman gave evidence that, following the handover, after completing the AEMR entry she printed it out and delivered it to Caitlin's bedside. At the time, Paramedic Hickman said that there were two female hospital staff members by the bedside and that she handed the AEMR entry to one of them.

10.15 RN Chang gave evidence that in her experience the AEMR case description for a patient is generally completed by paramedics after a patient has been offloaded following handover, and then printed out and given to the ward clerk in the emergency department. RN Chang explained that the ward clerk occasionally provides this AEMR printout to a triage nurse. However, RN Chang, RN Toole and NUM Daniels all gave evidence to the effect that it was their experience that the usual practice is for the ward clerk to electronically record the NSWA number in a patient's corresponding hospital record, and for the AEMR printout to be placed in a pigeonhole matching the bed for the particular patient. Dr Jason Hort was the senior staff specialist in the emergency department for the afternoon shift on 20 October 2016. He gave evidence to a similar effect regarding his experience with the AEMR printout. Indeed NUM Daniels gave evidence that in her experience an AEMR printout is always given to the ward clerk.

10.16 RN Chang explained that, when triaging a patient, it is not her usual practice to seek the printed case description completed by a paramedic. However, RN Chang acknowledged that it would have been open to her on 22 October 2016 to ask the ward clerk for the AEMR entry (if it had in fact been received by the ward clerk), but that she did not do so. RN Chang explained that on this occasion there was nothing about her triage of Caitlin that caused any alarm, as she had noted that Caitlin was alert, well perfused and had answered RN Chang's questions appropriately. In any event, RN Chang gave evidence that, following Caitlin's death, the ward clerks from both the emergency department and intensive care unit attempted to locate the printed AEMR entry, without success. NUM Daniels gave evidence that after 22 October 2016 she also searched for the AEMR entry and was unable to locate it.

10.17 The handover and triage process upon Caitlin's presentation to the emergency department again highlighted the difficulties associated with the transfer of information from an out-of-hospital setting to a hospital setting. These difficulties appeared to be a known issue in 2016 and remained a known issue in 2020, when Dr Hort gave the following evidence: "*So there is not a central place [for the NSWA records to be stored] and it remains an ongoing problem that the ambulance service records still print separately on their computer does not enter it - connect with our database or our computers*". Whilst Dr Hort described a "*deficit*" in the process by which general practitioners and paramedics transfer information in hardcopy or electronic format to the emergency department,

he noted that in practice GPs often call the emergency department admitting medical officer by phone in order notify them of an arriving patient. Dr Hort gave evidence that that system "*seems to be well known because it's well used*".

10.18 Dr Mary McCaskill, the Acting Director of Clinical Governance for the Network, gave evidence that a dedicated phone number exists within all NSW hospital emergency departments that allows a GP to call an admitting officer regarding an incoming patient. Dr McCaskill also gave evidence that when she recently (in January 2021) worked in the emergency department at the CHW she received a number of calls from GPs, leading her to opine that the dedicated phone number is "*clearly well known*".

10.19 **Conclusions:** If the AEMR entry was indeed printed out on 22 October 2016 following Caitlin's handover, it is not clear on the available evidence what happened to it, or why it was not available to medical staff to inform Caitlin's subsequent management. What is clear is that the information contained in the AEMR was not part of the triage process. Had it been available, it is likely that the discrepancy between information contained in the AEMR entry and in RN Chang's triage notes would have been identified. This in turn would likely have led to further interrogation as part of the triage process in order to understand the precise nature of Caitlin's presentation.

10.20 Whilst in October 2016 a practice existed for the manual transfer of hardcopy information between NSWA paramedics and hospital staff, it was not without some inherent difficulties. A more robust electronic system did not, and does not, exist. Rather, it appears that admitting officers within the emergency department at the CHW are largely reliant upon GPs calling the emergency department to provide a verbal handover for an incoming patient. The available evidence indicates that this practice appears to be well utilised. Of course, regrettably, it was not utilised on 22 October 2016.

11. Senior clinician review

11.1 Dr Tacita Powell was the senior resident medical officer in the emergency Department on 22 October 2016. In her progress notes which were commenced initially at 2:56pm, Dr Powell recorded the following regarding Caitlin: "*At GP - concerned that she was flat, not interactive and needed further assessment in the ED*". Dr Powell explained that these notes were based on information conveyed to her (from the triage and from taking a history from Mr Cruz) and that the use of the word "*flat*" was intended to convey that Caitlin was lethargic, not responding as she normally would, rather than that Caitlin had experienced a loss of consciousness.

11.2 After conducting an initial examination of Caitlin, Dr Powell discussed Caitlin's care with Dr Amit Hess, the emergency department fellow, and who was in charge of the acute area. After discussing Caitlin's presentation, Dr Hess reviewed Caitlin together with Dr Powell, noting the history of upper respiratory tract infections and fevers amongst Caitlin's family members. Following this, a provisional diagnosis was made that Caitlin was presenting with a viral illness, slightly upper respiratory in origin. Although the history indicated that Caitlin had been lethargic, Dr Powell noted that Caitlin did not present with lethargy at the time of review, and considered that fluid resuscitation en route to hospital had resulted in an improvement in her condition. A plan was formulated with Dr Hess for Caitlin to be placed under observation to see how she tolerated oral fluids (Hydralyte). In evidence, Dr Powell acknowledged that the consultation with Dr Hess and subsequent review was not documented in the progress notes, and that it should have been.

11.3 In his response to the HCCC, Dr Hess indicated that he assessed Caitlin himself, reviewed Caitlin's history with Mr Cruz and conducted a clinical examination of Caitlin. Dr Hess said that the provisional diagnosis which he made at the time of reviewing Caitlin (prior to her suspected seizure) was of upper respiratory infection with signs of dehydration. Dr Hess advised Dr Powell to continue observations and to continue with a trial of fluids which had already been commenced. Following Caitlin's suspected convulsive episode, Dr Hess indicated that the plan was to conduct further investigation by taking blood tests, and to admit Caitlin under the general paediatric team.

11.4 Dr Hess gave evidence that he was not aware of any protocol which existed at the CHW in 2016 that required a senior medical officer to review every paediatric patient admitted to the emergency Department. Rather, the usual practice was that the medical officer caring for a patient in the emergency department (typically the junior medical officer involved in the management of the patient) was asked to review a patient's observations prior to the patient being transferred to a ward, and to sign the patient's observation chart to confirm the patient's suitability for transfer. Dr Hess also indicated that monitoring of paediatric patients following afebrile seizures is clinically driven and dependent on their recovery from the seizure, with no specific requirement that monitoring should occur for 24 hours. However, where there is a clinical concern regarding the level of consciousness, more frequent vital signs and neurological observations will take place.

11.5 Dr Powell confirmed that the AEMR entry was not available to her in the emergency department, although it was her experience that such information would normally be with a patient or near their bedside. Dr Powell considered that in October 2016, the absence of the AEMR entry print out may have been due to a transition occurring at the CHW from hardcopy to electronic records. However, Dr Powell gave evidence that she did not specifically look for the AEMR entry. Further, Dr

Powell also gave evidence that, based on the information from triage and the history provided by Mr Cruz, no consideration was given to following up with the Medical Centre for further information regarding Caitlin's history and presentation. Dr Powell noted that whilst it was common for patients to arrive in the emergency department with a referral letter from a GP, "*at the time through the discussions we had with Dr Hess, the decision was not made to call her GP*", although Dr Powell acknowledged that she could not recall whether explicit consideration was given to this possible step. Dr Powell explained that in this regard she was guided by Dr Hess.

11.6 Dr Hort noted that upon commencing his shift at 3:30pm Caitlin was already in the resuscitation bay area following her collapse, which had occurred prior to the start of Dr Hort's shift. After Caitlin responded to treatment, and her vital signs improved, Dr Hort received a handover from Dr Powell and Dr Hess. Dr Hort was provided with information regarding the initial assessment conducted by Dr Powell and Dr Hess, and discussed the plan of management for Caitlin. Dr Hort gave evidence that he was aware that Caitlin had "*some form of collapse episode at the GP*" which was unclear, and that she had received some IV fluids and responded well to the point where Dr Powell and Dr Hess were considering her for discharge.

11.7 Dr Hort gave evidence that his discussion with Dr Powell and Dr Hess was centred around the episodes that Caitlin had experienced as they did not seem like typical febrile convulsions, and discussed possible differential diagnoses with a concern that the episodes might represent a more encephalitic-type problem. Dr Hess explained that the medical team were more concerned about cerebral causes of Caitlin's collapse as potentially more significant, and discussed a number of possible further investigations. Dr Hort explained that ultimately a plan was formulated for Caitlin to be admitted under the general medical team with routine observations to be performed, including ECG, with consideration given to other investigations and tests. Dr Hort gave evidence that following Caitlin's admission there would be further discussion between Dr Nundeekasen and Dr Ging in relation to Caitlin's ongoing management.

11.8 However, the evidence established that the reviews that were conducted by Dr Hess and Dr Hort were based on incomplete information regarding the events at the Medical Centre, and therefore Caitlin's overall clinical picture. For example, Dr Hort gave evidence that he was only aware that Caitlin had had an episode involving "*some form of collapse*" that was similar to the episode in the emergency department and that she had responded to a relatively simple intervention such as oxygen, and therefore Dr Hort was not left with the impression that any resuscitation efforts had been initiated. Dr Hort opined that the episode was not obviously cardiac and not typical for febrile convulsions.

11.9 Dr Hort acknowledged that there should have been more documentation from staff in the emergency department regarding the reviews that were conducted of Caitlin, together with her collapse in the emergency department. However, Dr Hort explained that the absence of documentation was most likely due to Dr Nundeekasen being present as the medical registrar and who had actually witnessed and described the episode. Notwithstanding, Dr Hort agreed that attending emerging department medical staff ought to have made an entry in the progress notes in relation to the event that they attended.

11.10 **CONCLUSIONS:** The evidence established that senior clinician review regarding Caitlin's presentation and management was conducted while she was in the emergency department, by both Dr Hess and Dr Hort. However, these reviews were compromised to the extent that the clinicians did not have available to them a complete picture of Caitlin's history, in particular the events at the Medical Centre. In submissions, counsel for the Network appropriately accepted that "*there was a failure by staff to provide a coherent, clear plan of care for Caitlin*". The evidence also established that these reviews ought to have been properly documented in the progress notes, together with the episode involving Caitlin's collapse in the emergency department. Again, counsel for the Network appropriately acknowledged that the relevant medical records "*did not reflect the review and input from senior clinicians as that input was largely not documented*".

12. Further matters related to Caitlin's care in the emergency department

12.1 Apart from the matters described above, a number of further issues arose during the course of the inquest in relation to the care provided to Caitlin whilst she was in the emergency department. These issues are discussed further below.

Documentation

12.2 It has already been noted that the reviews of Caitlin by senior clinicians that were conducted in the emergency department were not documented as they ought to have been. The evidence established that a similar lack of clear documentation also existed with respect to nursing entries in the progress notes.

12.3 For example, following an entry made in the progress notes by RN Lauren Whalan (who was working as the second RN in the resuscitation bay area, together with RN Toole) at 3:42pm, no other nursing entry was made in the progress notes until Caitlin was transferred from the emergency department to the ward, a period of some two hours and 45 minutes. Specifically, there were no nursing entries made by RN Toole on several occasions: when Caitlin's care was handed over by RN Whalan to RN Toole at around 4:00pm, and when RN Toole handed Caitlin's care from the resuscitation bay back to RN Chang in the short stay ward about an hour later.

12.4 In his response to the HCCC, RN Toole acknowledged these shortcomings and the need for adequate documentation to occur regardless of the extent of his interaction with a patient. NUM Daniels similarly accepted in her evidence that there was poor compliance with expected standards in relation to documentation associated with Caitlin's care in the emergency department. Further, NUM Daniels accepted that this poor compliance created a potential risk of confusion amongst clinicians, and a consequent potential risk to patient safety.

Medication

12.5 The evidence also established a significant degree of uncertainty as to whether Caitlin was administered midazolam in response to the seizure-like episode that she experienced in the emergency department. A number of clinicians had a different understanding as to whether midazolam had been administered to Caitlin, or not:

(a) Dr Ging gave evidence that she was told that midazolam had been administered and that it had terminated the seizure-like episode. This led Dr Ging to conclude that it was more likely that Caitlin had experienced a seizure.

(b) In contrast, Dr Hort gave evidence as to his understanding that midazolam had not been administered.

(c) Dr Powell gave similar evidence that she recalled midazolam being drawn up in preparation for administration if the indicated seizure did not terminate, but understood that it was ultimately not administered.

12.6 The relevant drug register for 22 October 2016 recorded 5mg of midazolam being drawn, but contained no record as to whether it was in fact administered. Instead, the drug register recorded 0mg being discarded, suggesting that the 5mg had been administered to Caitlin. RN Toole was responsible for drawing up the midazolam on 22 October 2016. He gave evidence that he understood that midazolam was administered to Caitlin, and that it was the responsibility of the nurse or doctor who discarded the midazolam to complete the relevant entry in the drug register. RN Toole acknowledged the shortcoming on his behalf in relation to the register, indicating that he ought to have documented which medical officer the midazolam had been provided to for administration, and whether it had in fact been administered or was subsequently discarded.

Neurological observations

12.7 Dr Ging gave evidence that she was told by Dr Nundeekasen that following Caitlin's seizure-like event in the emergency department, Caitlin's neurological observations were normal. Dr Ging assumed that this meant that neurological observations had been performed hourly, for a period of four hours, following the event. Dr Ging explained that Caitlin "*required the full set of four hours of neurological observation, observations on what we felt was the diagnosis at the time*". Without this being performed, Dr Ging acknowledged that no arrangements could be made for closer observations of Caitlin, or a return to normal observations overnight, following her admission to the ward.

12.8 In contrast, Dr McCaskill gave evidence that a four hour period of observation is not performed as a matter of standard practice, in accordance with guidance from NSW Health and the Network. Instead the guidance provided is for neurological observations to be performed until a paediatric patient returns to a normal level of observations. Notwithstanding, in Caitlin's case, Dr McCaskill agreed that ongoing neurological observations would have been valuable to determine whether Caitlin remained alert, or whether she had episodes of drowsiness or lethargy. Dr McCaskill indicated that it was her expectation that neurological observations should be performed by nursing staff until a paediatric patient returns to their normal level of neurological functioning.

Transfer from emergency department to ward

12.9 Caitlin's transfer from the emergency department to the ward required that her observation chart be signed by a member of the nursing staff, and countersigned by a medical officer. At the time that NUM Daniels signed the observation chart prior to Caitlin's transfer, it had not been countersigned by a medical officer.

12.10 NUM Daniels instructed RN Chang to ensure that the chart was signed by a medical officer before the transfer to the ward took place. However, there is no evidence that this occurred, and no evidence that RN Chang informed NUM Daniels that a medical officer had not signed the chart prior to Caitlin's transfer. As no medical review was performed prior to transfer, it was not identified that a full set of neurological observations had not been performed for Caitlin.

12.11 Since 2016 the above challenges appear to have been addressed. There has been a transition to electronic record keeping at the CHW which now provides that, prior to a patient being transferred

to a Ward, a NUM only signs the patient's observation chart after it has been signed by medical officer.

Lactate level

12.12 Following Caitlin's seizure-like event her lactate level was recorded as 2.9 mmol/L, which represented an elevated level. This is significant because an elevated lactate level is a clinical marker for organ dysfunction, shock and sepsis. Both Dr Ging and Dr McCaskill gave evidence that an elevated lactate level of this kind warranted a repeat test, in order to determine whether Caitlin's condition was improving or deteriorating. However, a repeat test was not performed. Dr McCaskill gave evidence that this was likely due to the fact that in 2016 a lactate level was not considered to be "*seriously abnormal*" until it reached a level of over 4 mmol/L.

Consult between Nundeekasen and Ging

12.13 Dr Nundeekasen was the general medical registrar on 22 October 2016. At around 3:30pm Dr Powell called for assistance from Dr Nundeekasen as Caitlin was experiencing a seizure-like event. Dr Nundeekasen described Caitlin as appearing cyanotic, with jerking movements (rather than tonic-clonic movements) in her limbs, and unresponsive to pain and voice. After Caitlin was provided with oxygen, Dr Nundeekasen inserted another cannula in order to perform blood tests and other investigations. As this was occurring, Caitlin began to rouse and was able to open her eyes and start talking.

12.14 Whilst Caitlin remained in the resuscitation bay Dr Nundeekasen discussed the seizure-like episode with Dr Hort, and a plan was formulated for Caitlin's ongoing management. By around 4:00pm it appears that this management plan involved:

(a) urine collection for microscopy, culture and sensitivity (in order to test for any infective process);

(b) Caitlin to be admitted to the ward so that she could be observed for 24 hours;

(c) intravenous fluids to be given; and

(d) an ECG to be performed to determine any potential underlying cardiac pathology that might explain the seizure-like event

12.15 Importantly, although a decision had been made to admit Caitlin to the ward, Dr Nundeekasen gave evidence that she did not understand that the ward staff were then to have responsibility for Caitlin's ongoing management, even though Caitlin physically remained in the emergency department. Rather, it was Dr Nundeekasen's understanding that Caitlin continued to be managed by the emergency department until such time as she was transferred to the ward.

12.16 Although Caitlin's seizure-like episode and the subsequent formulation of her management plan took place between around 3:30pm and 4:00pm, it was not until around 5:15pm that Dr Nundeekasen commenced documenting these events in the progress notes. Dr Nundeekasen gave

evidence that in the intervening period she had been required "*to have the discussions with the consultant, then going back to talk to the Father, examining Caitlin, and then going down to sit down and write my notes, it would have been that, that time*".

12.17 Dr Nundeekasen's progress notes entry (which was later completed at around 5:27pm) recorded the following:

"*…Went to the GP today and due to her becoming more non-engaged the paramedics were called and she was brought to the ED.*
Was alert on arrival then whilst standing waiting to go to the toilet, she became limp and off colour. Father brought her back to the bed and she was rushed to resus.
blue and unresponsive to pain. Period of no resps. No tonic-clonic movements however some jerky movement was noted. Face was cyanotic and her peripheries were cold and pale.
Oxygen applied and other IVC inserted and gas sent.
IV midazolam given at this time.
She was unresponsive for a total of five minutes.
…
plan:
- *urine MC+S*
- *observe for 24 hours*
- *IV fluids*
- *ECG*"

12.18 Dr Nundeekasen gave evidence that the AEMR entry was not available to her on 22 October 2016, after she checked the relevant pigeonhole and did not locate it. However, Dr Nundeekasen gave evidence that the contents of the AEMR entry would not have added anything to her assessment and management of Caitlin, or her clinical decision-making. Dr Nundeekasen explained that she spoke to Mr Cruz and that the events at the Medical Centre were not made known to her. However, Dr Nundeekasen acknowledged that a history given by a parent as to why a child had been taken to a medical centre might be different from the reason why the child was subsequently taken by ambulance from the medical centre to hospital.

12.19 Following Caitlin's seizure-like event, Dr Nundeekasen gave evidence that, in accordance with "*hospital policy*", she expected that neurological observations would be performed every hour for four hours, before reverting to four-hourly observations. However, Dr Nundeekasen gave evidence that she did not consider it necessary for her to direct nursing staff to perform such observations, given that some nurses were present when she discussed Caitlin's management plan with Dr Hort.

12.20 At around 7:30pm Dr Nundeekasen called Dr Joanne Ging, the on-call general medicine consultant, to discuss Caitlin (along with a number of other patients). At this time, Dr Ging was at a restaurant with consequent environmental noise in the background. Dr Nundeekasen's evidence regarding this discussion is relevant in the following respects:

(a) Dr Nundeekasen gave evidence that she read from her progress notes entry, as was her usual practice, and described that Caitlin had gone limp and off-colour, and had been blue and unresponsive to pain.

(b) Dr Nundeekasen acknowledged that at the time of her discussion with Dr Ging she did not have any information as to whether hourly observations had been conducted in the period following Caitlin's seizure like event.

(c) Dr Nundeekasen described Caitlin as returning to normal, and sitting up and talking following the seizure-like event. However, Dr Nundeekasen acknowledged that following this event she did not become involved again with Caitlin's care and that, therefore, the last time she saw Caitlin prior to speaking to Dr Ging was a least three hours earlier. Although Dr Nundeekasen gave evidence that the topic of when she last saw Caitlin "*didn't come up*" during her discussion with Dr Ging, Dr Nundeekasen acknowledged that she did not know whether Caitlin's presentation some three hours earlier was the same at the time that she spoke with Dr Ging. Notwithstanding, Dr Nundeekasen sought to explain that she had not been told, or had any reason to believe, that anything untoward had happened regarding Caitlin in the intervening period.

(d) Dr Nundeekasen informed Dr Ging that an ECG had been ordered, but that she had not sighted the results. In this regard, Dr Nundeekasen gave evidence that, as a matter of general practice, she had an expectation that she would be informed if the ECG results were abnormal. As she had not been provided with any information in this regard by the time of her discussion with Dr Ging, Dr Nundeekasen gave evidence that it was therefore her belief that the ECG had in fact been performed and that the results were normal .

(e) Dr Nundeekasen accepted that she did not document her discussion with Dr Ging, and that this ought to have occurred so that the steps in Caitlin's management could be readily discerned.

12.21 Dr Ging's evidence as to her recollection of the same discussion is relevant in the following respects:

(a) Dr Ging gave evidence that she was not told that Caitlin had been brought in by ambulance, and that if such information had been conveyed it would have prompted further questioning as to the need for an ambulance;

(b) Dr Ging said that she was told that Caitlin had experienced a witnessed afebrile seizure with clonic movements which had lasted for a short time, and had been terminated using intravenous midazolam.

(c) Dr Ging said that she was not told that Caitlin had become limp and off-colour prior to the seizure-like episode, and that Caitlin had experienced a period of no respiration (but was breathing again by the time Dr Nundeekasen reached the bedside).

(d) Dr Ging gave evidence that she was told that Caitlin's neurological observations were normal, and assumed that Dr Nundeekasen had seen those observations.

(e) Dr Ging gave evidence that she asked Dr Nundeekasen to check that the ECG had been performed, to sight it, and to ensure that it had been cleared as normal before she completed her shift. Dr Ging said that she expected Dr Nundeekasen to call or send a picture of the ECG if she had any concerns. Later in her evidence, Dr Ging confirmed that even if the ECG had not been performed by the time that Dr Nundeekasen finished her shift it would have been reasonable for Dr Nundeekasen to inform incoming medical staff that it had not been done, and needed to be chased up. However, Dr Ging noted that in this scenario she would have preferred that Dr Nundeekasen advise her of this, given that the incoming night shift staff were less experienced, and that the ECG result be sent to her instead for review.

(f) Dr Ging gave evidence that she was told that Caitlin's blood tests were normal, with the exception of an elevated lactate level that was thought to be due to the difficulty in obtaining the blood sample at the time. Dr Ging asked for the test to be repeated but was told that Caitlin had already been transferred to the ward and that it could be repeated in the morning after she had been rehydrated with fluid. However, Dr Ging explained that if she had been told the exact results of the venous blood gas, she would have asked for the lactate to be repeated that night. However, later in evidence Dr Ging acknowledged that it was possible that she was told that that lactate level from an arterial blood gas was 2 mmol/L, and that this was interpreted as being within the normal range.

(g) Despite appropriately conceding that her memory in 2020 was not as good as it was in 2016, Dr Ging gave evidence that she made notes of her discussion with Dr Nundeekasen in the days following 22 October 2016. Dr Ging went on to explain that when she became aware of the events of 23 October 2016 she realised that they were different from what she had been told the previous evening. Dr Ging explained: "*It was very clear to me that things were not as, as had been portrayed to me the next morning. I also think it was very clear to [Dr Nundeekasen] as well*".

12.22 The inconsistencies between the recollections of Dr Nundeekasen and Dr Ging regarding the same discussion are difficult to resolve. Although, Dr Ging gave evidence of having made relatively contemporaneous notes of the discussion after it occurred, these notes were not available to the inquest. Further, it is difficult to assess the extent to which Dr Ging's evidence as to immediately recognising the critical differences in information provided to her on 22 and 23 October 2016 regarding Caitlin's condition has possibly been affected by Dr Ging's knowledge of subsequent events. Given that the evidence is that Dr Nundeekasen read directly from her progress note entry, in accordance with her usual practice, and being unable to discount the possibility that environmental factors at Dr Ging's location may have adversely impacted upon her receipt of the information being conveyed by Dr Nundeekasen, it is it is possible that Dr Nundeekasen's recollection of the discussion is more reliable. However, to the extent that there is some uncertainty about this conclusion, it only serves to reinforce that the discussion ought to have been appropriately documented at the time. Such a matter was critical to Caitlin's ongoing management.

12.23 It is clear from the above that there were varying degrees of miscommunication and incomplete transferal of information following Caitlin's seizure-like episode. This appears to have been due to a number of factors. First, there was either an absence of, or delay in, documentation within Caitlin's progress notes of events in the course of her management. Significantly, nursing handovers and the consult between Dr Nundeekasen and Dr Ging, as already noted above, were not documented. Second, it is evident that although a management plan was formulated shortly after Caitlin's seizure-like episode, it was not documented until almost two hours later. Third, following a decision to admit Caitlin to the ward, some confusion appears to have existed as to whether Caitlin's management remained the responsibility of the emergency department or the ward.

12.24 **CONCLUSIONS:** The communication difficulties identified above resulted in the following matters that were relevant to Caitlin's care. First, no clear direction was given for hourly neurological observations to be performed, although several hours later Dr Ging was left with the impression that such observations had in fact been performed. Second, despite an ECG having been ordered at around 4:00pm, it still had not been performed by 8:00pm at the conclusion of Dr Nundeekasen's shift. Third, there was associated confusion about the manner in which the ECG ought to have been performed, reviewed and cleared. Significantly, Dr Ging's evidence is that if the ECG could not be reviewed by Dr Nundeekasen before the end of her shift, it should have been sent to Dr Ging for review, having regard to the relative inexperience of the incoming junior medical staff. Fourth, the consult between Dr Nundeekasen and Dr Ging left Dr Ging with an impression of Caitlin's condition that was not entirely accurate, that was based in part on observations that had been made at least three hours earlier, and that was incongruent with Caitlin's presentation when reviewed by Dr Ging herself on the morning of 23 October 2016.

13. Delay in performance of an electrocardiogram

13.1 As noted above, an ECG for Caitlin was ordered at around 4:00pm on 22 October 2016, a short time after Caitlin's seizure-like episode. However, the ECG was not performed prior to Caitlin's transfer to the ward, or prior to the end of Dr Nundeekasen's shift at 8:00pm.

13.2 There is some inconsistency in the evidence regarding how the order for an ECG was communicated. RN Chang gave evidence that at around 5:40pm she saw, from a whiteboard in the emergency department, that Caitlin had been allocated a bed in the ward. RN Chang gave evidence that she asked Dr Nundeekasen, who at the time was working on a computer at the nurse's station at the time, whether she wanted an ECG to be performed in preparation for Caitlin's transfer to the ward, to which Dr Nundeekasen agreed. In contrast, Dr Nundeekasen said that she could not recall having any conversation with RN Chang. Further, Dr Nundeekasen said that following her discussion with Dr Hort, after Caitlin's seizure-like episode, she marked on the whiteboard the further investigations to be performed for Caitlin, including an ECG.

13.3 RN Chang gave evidence that when she first saw the ECG machine it was not plugged in. After connecting the ECG leads to Caitlin RN Chang attempted to turn the ECG on, without success. After checking the machine and the power point RN Chang took a component of the ECG machine, known as the Wireless Acquisition Module (**WAM**), to NUM Daniels and informed her that it was not working. RN Chang gave evidence that she also informed Dr Nundeekasen that the ECG machine was not working, and that Dr Nundeekasen only nodded in response. NUM Daniels attempted to turn on the WAM but was unable to do so. RN Chang returned to Caitlin's bedside and attempted to turn the ECG machine on a second time, again without success. RN Chang said that she returned to inform NUM Daniels and was told that an ECG machine elsewhere in the CHW was not available.

13.4 NUM Daniels gave evidence that RN Chang informed her at around 5:30pm that the ECG machine was not working. In response, NUM Daniels made a number of enquiries in an attempt to source an alternate ECG machine. Her enquiries revealed that the previous ECG machine that had been used in the emergency department had been moved to a surgical unit but was not functioning, and that the only other ECG machine available was in the Edgar Stephens Ward, but it was being used at the time. After checking that the ECG machine was plugged in correctly (but still not operating), NUM Daniels opened the WAM and considered that there may have been a problem with the AA battery within the WAM. As a result, NUM Daniels tasked an assistant-in-nursing to locate a replacement battery, without success. NUM Daniels gave evidence that after her shift ended at 8:00pm it was the responsibility of the after-hours nurse manager to decide whether to arrange for the ECG machine to be fixed or to wait until the following day when a functioning machine would be available. However, it appears that no decision was made in either regard.

13.5 Instead, NUM Daniels gave evidence that it was not until the following day, after Caitlin's death, that she received confirmation from the biomedical engineering department at the CHW that the inability to turn on the ECG machine on 22 October 2016 was due to the battery in the WAM being flat. NUM Daniels explained that the ECG had been purchased "*a couple of months*" prior to October 2016 but that she had not been provided with any education regarding its operation. She said that the ECG machine came with a list of instructions on the back of the machine which made

no mention of an AA Battery being needed. In this regard RN Toole gave evidence that it was the responsibility of one of the resuscitation nurses to go through an equipment checklist at around 7:30am each morning to ensure that bedside monitors were plugged in and that resuscitation trolleys were appropriately stocked. One item on the checklist was to ensure that the ECG was in place and on charge. However, the checklist made no mention of checking the battery in the WAM. NUM Daniels described the previous ECG machine used in the emergency Department as a "*simple plug-in*" that did not operate with a WAM. NUM Daniels said that she received information from biomedical engineering regarding the flat WAM battery and that she informed her nurse manager, and subsequently made arrangements for AA batteries to be stocked in the NUM office at all times.

13.6 NUM Daniel's evidence regarding the flat battery in the WAM was the first occasion, during both the HCCC and coronial investigations, that this issue had been identified as the cause of the failure of the ECG machine to operate on 22 October 2016. NUM Daniels acknowledged that despite being made aware by 23 October 2016 of the flat battery in the WAM, she made no mention of this in response to a question asked of her by the HCCC in July 2017 as to whose responsibility it was to ensure that ECG machine was charged (based on a belief at the time that a lack of charge was the reason for the machine not operating on 22 October 2016). NUM Daniels further acknowledged that her omission allowed the HCCC to operate under a misapprehension as to the reason why the ECG was not operating on 22 October 2016.

13.7 RN Chang gave evidence that after she was unable to turn on the ECG machine she told both Dr Nundeekasen and NUM Daniels about this difficulty. As noted above, Dr Nundeekasen gave evidence that she had no recollection of any conversation with RN Chang in this regard. Instead, Dr Nundeekasen's evidence was that it was not until shortly before her shift ended at 8:00pm, that a nurse in the ward told her that the ECG had not been performed. Initially Dr Nundeekasen said that she was informed that this was due to there being no ECG machine available in the emergency department, but later in evidence appeared to suggest that she was told that it was due to the ECG machine not working. Further, Dr Nundeekasen said that she was aware that the nursing staff on the ward would instead perform the ECG. At the subsequent handover, Dr Nundeekasen informed Dr Megan Sheppard, the night shift junior registrar, and Dr Joel Bedford, the night shift resident, that the ECG had not been performed and that it needed to be chased, in order to investigate the possible reason for Caitlin's seizure-like episode.

13.8 In her evidence, RN Chang maintained that she suggested to Dr Nundeekasen that an ECG be performed and that she informed Dr Nundeekasen that the ECG machine was not working, with Dr Nundeekasen only nodding in response. However, this evidence was different to the response provided by RN Chang to the HCCC in March 2018. In that response RN Chang stated that after informing Dr Nundeekasen of the inability to perform an ECG, she had a discussion with both Dr Nundeekasen and NUM Daniels in which it was agreed that the ECG would be performed on the ward after Caitlin was transferred.

13.9 Dr McCaskill gave evidence that a review of the ECG machine service records revealed that it was used less frequently in the emergency department than in other departments. The effect of this was that the battery in the WAM did not need to be changed as regularly in the emergency department (requiring a change approximately every six to eight months), which in turn meant that staff were less familiar with the process of changing it. Dr McCaskill also gave evidence that

since October 2016 the biomedical engineering section attends the emergency department on a weekly basis to ensure that the ECG machine and other equipment are working correctly, and the WAM battery is changed quarterly. Further, Dr McCaskill explained that nursing staff in the emergency department separately check that the ECG machine is plugged into the mains power every day. The checks conducted by both by biomedical engineering and nursing staff are audited on a monthly basis.

13.10 In submissions, counsel for the Network appropriately acknowledged the following:

(a) that the ECG was significantly abnormal and ought to have been recognised as such;

(b) the ECG findings ought to have been escalated for senior clinical review and/or for a paediatric cardiology consultant; and

(c) if the irregularity in the ECG had been identified, further monitoring would have been instituted, and further investigations would likely have been undertaken to identify the cause of the irregularity.

13.11 **Conclusions:** The evidence clearly established that there was a delay in performing an ECG. Despite a plan being formulated at around 4:00pm for further investigations, including an ECG, to be performed, by 8:00pm the ECG had been performed. It appears that no attempt was made to do so until around 5:40pm. Although the evidence of RN Chang and Dr Nundeekasen differed as to how this attempt came to be made, it is clear the progress note entry completed by Dr Nundeekasen at around the same time records a plan for an ECG to be performed. Further, Dr Nundeekasen's unchallenged evidence is that the plan for further investigations, including an ECG, was recorded on the whiteboard in the emergency department at the relevant time.

13.12 The inability to perform an ECG at around 5:40pm was due to the ECG machine not functioning, and there being no alternative machine available. RN Chang and others believed at the time that the lack of functionality was due to the machine being out of charge. However, the evidence of NUM Daniels, disclosed for the first time during the inquest, was that this was instead due to the battery in the WAM being flat, with an inability to source a replacement battery.

13.13 The inability on 22 October 2016 to perform an ECG in the emergency department of a tertiary paediatric hospital in a timely manner, and the inability to resolve a simple difficulty such as a battery in a vital piece of medical equipment being flat, is clearly well below an acceptable and adequate standard of care that a patient might otherwise expect. For Caitlin, this meant that it would be a further three hours before an ECG could be performed, following her transfer to the ward. This represented a further delay in potentially identifying pathology that might have explained her seizure-like episode, and an opportunity to alter Caitlin's management in response. Since 2016 the CHW has taken appropriate steps in order to address the above deficiencies, to mitigate the possibility that issues associated with the operation of medical equipment will prevent timely and appropriate care being provided to a patient.

13.14 The acknowledgement made by NUM Daniels in evidence as to the fulsomeness of her response to the HCCC is a matter of some concern. Given that NUM Daniels appropriately acknowledged that her response allowed the HCCC to operate under a misapprehension as to the reason why an ECG could not be performed in the emergency department on 22 October 2016, it is necessary to make the following recommendation.

13.15 **Recommendation 3:** I recommend that the evidence of NUM Daniels and a copy of the findings in the *Inquest into the death of Caitlin Cruz* be forwarded to the Health Care Complaints Commission for further consideration regarding the adequacy of the explanation provided to the HCCC in relation to the inability to perform an ECG in the emergency department on 22 October 2016, and for any further action considered necessary by the HCCC.

13.16 Counsel for the Network submitted that the above recommendation ought not to be made on the basis that the response provided by NUM Daniels to the HCCC was not "*genuinely misleading*" but was instead limited by her understanding of the exact nature of the information sought by the HCCC. Further, it was submitted that by a letter dated 7 May 2021 (which post-dated provision of the written submissions of Counsel Assisting) that the Network has already informed the HCCC of the matters identified during NUM Daniel's evidence regarding the ECG machine being apparently out of charge. It is accepted that the response provided by NUM Daniels was not "*genuinely misleading*" in the sense that there is no evidence to suggest that NUM Daniels intended her response to mislead the HCCC. However, NUM Daniel's own acknowledgment in evidence was that her admission allowed the HCCC to operate under a misapprehension in relation to the information that it sought regarding the functionality of the ECG machine. On this basis, it is necessary that the HCCC be given the opportunity to consider the response provided to it, in context, and whether any further action is required.

14. Review of the electrocardiogram by a senior clinician

14.1 Dr Sheppard was the general medical registrar for the night shift on 22 October 2016. As at that date, Dr Sheppard had been at the CHW for approximately two months and was completing a term of general paediatrics. When Dr Sheppard commenced her shift at 8:00pm, Dr Bedford was also on site, together with another registrar of the same experience as Dr Sheppard.

14.2 Dr Sheppard gave evidence that, from the handover with Dr Nundeekasen, she understood that Dr Nundeekasen requested her to chase the ECG. Dr Sheppard also understood that the ECG was required because Caitlin had experienced an afebrile seizure-like episode earlier in the day, and any potential cardiac cause for this needed to be excluded. Dr Sheppard gave evidence that whilst she had an opportunity to read the progress notes, she was unaware that Caitlin had gone limp and needed to be carried prior to the seizure-like episode, and that she was not asked to clinically review Caitlin.

14.3 The ECG was performed at 8:40pm and Dr Sheppard expressed the belief that she reviewed the ECG at approximately 10:00pm. At that time, Dr Sheppard had little actual experience in interpreting ECGs for paediatric patients on her own, but gave evidence that it was her belief at the time that she had the necessary expertise to do so. Notwithstanding, Dr Sheppard gave evidence that this occasion was likely one of the earliest occasions where she had been asked to interpret a paediatric ECG without input from a more senior clinician. Dr Sheppard stated the following: "*I noted ST-T elevation in the inferior and anterior leads and thought the ECG showed elevated J point. In light of [Caitlin's] normal examination, which was handed over to me, and normal bedside observations I thought it was consistent with early repolarisation changes*".

14.4 Dr Sheppard explained that her notation on the ECG of "*BER?*" intended to convey a query as to benign repolarisation, but acknowledged that in the circumstances she ought to have sought input from a senior clinician. Dr Sheppard indicated that it was open to her to seek such input from either the advanced trainee on-site, or to contact Dr Ging by phone. As noted above, the expert evidence from Dr Brooks established that the widespread ST elevation across the anterior, lateral and inferior leads were most typical of acute pericarditis rather than benign early repolarisation.

14.5 Dr Nicholas Piggott was the senior staff specialist paediatric intensive care and medical director of intensive care unit. Dr Piggott explained that if the ECG had been identified as abnormal he would have expected, consistent with the opinion expressed by Dr Brooks, that a request would be made that it be reviewed by the duty cardiology fellow. If, upon review, the ECG was determined to be not reassuring then it is likely that an echocardiogram would have been performed or the matter would be escalated to the duty paediatric cardiologist. This would have, in turn, resulted in the pericardial effusion being drained or Caitlin being admitted to the ICU for observation. These observations would have included, at a minimum, continuous ECG monitoring and continuous saturation, trace monitoring, blood pressure monitoring and secure intravenous access.

14.6 In the course of his evidence Dr Piggott expressed the view that Caitlin's episode at the Medical Centre was likely a result of a pericardial effusion that was sufficient to cause a cardiac tamponade, although Dr Piggott emphasised that he would not have considered this to be the most likely explanation for the constellation of Caitlin's symptoms. Dr Piggott expressed the view that Caitlin's

deterioration on 23 October 2016 was most likely an encephalomyelitis as a consequence of an aggressive viral infection, and that the cardiac perfusion was secondary to that.

14.7 **CONCLUSIONS:** The expert evidence of Dr Brooks establishes that the failure to perform an ECG in the emergency department on 22 October 2016, prior to Caitlin's transfer to the ward, resulted in missed opportunities for consideration to be given to a potential diagnosis of acute pericarditis. When the ECG was actually performed on the ward and subsequently reviewed, there was a missed opportunity to seek review by a senior clinician. Again, the evidence of Dr Brooks established that the ECG results would have been considered abnormal for a three-year-old patient and ought to have resulted in review by a senior clinician or the paediatric cardiology service.

14.8 Such a review would have most likely resulted in a diagnosis of acute pericarditis. This in turn would have been followed by performance of an echocardiogram (to identify any pericardial effusion) and further investigations as part of Caitlin's management, together with further monitoring and institution of specific therapies depending on the results of investigations. Alteration of Caitlin's management this way may have altered the eventual outcome for Caitlin and prevented her sudden deterioration and death on 23 October 2016.

15. Further missed opportunities and issues in relation to Caitlin's care

15.1 Apart from the issues discussed already above, the inquest also identified a number of other aspects of Caitlin's care which raised concerns, both in relation to the quality of care provided but also in relation to the missed opportunities to potentially improve such care.

Documentation

15.2 RN Lindie Brown was on shift on the ward overnight on 22/23 October 2016, and she assumed care for Caitlin at around 10:20pm. The following day, at around 7:00am, RN Brown completed a progress note entry, which was the only entry completed by RN Brown in relation to her shift. The entry recorded, in part, the following:

> "*[Caitlin] awake and restless overnight, needing to be carried to bathroom as feels 'weak'*
> *? atypical seizure*
> *…*
> *Appears drowsy at times, not keen to walk as feels 'weak'*
> *Afebrile, skin very cool to touch, but child complained of feeling hot*".

15.3 RN Brown also documented that Caitlin's respiratory rate and pulse rate were within normal limits.

15.4 In contrast, a retrospective progress notes entry was made by RN Erin Moody on 23 October 2016 commencing at 12:28pm, after RN Moody had earlier assumed care for Caitlin shortly before 8:00am. RN Mood's entry noted that Caitlin went to the bathroom four times overnight and had to be carried by her mother on the last occasion. RN Moody also noted that Caitlin had consumed 250-300mls of water with some Hydralyte ice block melted in it after 11:00pm. RN Moody noted that these matters were documented in retrospect as "*not filled in by RN overnight*".

15.5 RN Brown gave evidence that it was her understanding that she was only required to record observations on the observation chart and did not make any entries in the progress notes during her shift. RN Brown explained that it was her usual practice as at October 2016 to record a single progress note entry at the end of her shift. However, RN Brown hesitantly acknowledged that on the occasion when Caitlin needed to be carried to the bathroom because she felt weak, it would have been important to record the nature of that weakness or when the information was received from Caitlin's mother in order to provide a picture of Caitlin's overall presentation.

15.6 RN Brown acknowledged that she should have queried whether Caitlin's drowsiness was usual or unusual, or whether it represented a change in her presentation. She also acknowledged that it would have been important to recall at what time the observation was made that Caitlin's skin was very cool to touch. RN Brown agreed that she was required to assess Caitlin's level of consciousness where possible and to record such observations in the paediatric observation chart. RN Brown acknowledged that she did not record any oral intake overnight, and did not record any urinary output. RN Brown also accepted that she ought to have documented when a clinical review had been called after Caitlin's vital signs (respiratory rate and temperature) had dropped to the yellow zone. Overall, when these matters were put to RN Brown in evidence she accepted that

relevant clinical information in relation to Caitlin's presentation obtain ought to have been documented contemporaneously overnight on 22/23 October 2016.

Blood pressure observations

15.7 A normal set of observations were taken when Caitlin arrived on the ward at 6:30pm on 22 October 2016, however no blood pressure was taken. Similarly no blood pressure was taken when further observations were done overnight at 8:00pm, 12:00am, 3:00am, 5:00am and 7:00am. Dr Ging explained that blood pressure would not routinely be performed on children overnight as it can tend to cause distresses. However, this practice is contingent upon a normal blood pressure reading been taken upon admission to the ward.

15.8 RN Brown confirmed that she did not take Caitlin's blood pressure overnight, on the basis that "*she had a normal blood pressure in emergency and it wasn't required to do a blood pressure*". In written submissions, the solicitor for RN Brown drew attention to the NSW Health Policy Directive, *Recognition and Management of Patients who are Clinically Deteriorating* (PD2013_049) which provides that blood pressure observations is required at least once during the admission for a paediatric patient, and is not included as part of the minimum set of vital sign observations. Further, the Network's *Between the Flags (BTF): Clinical Emergency Response System Procedure* provides that a full set of observations, including blood pressure, is required at least once per admission and then as clinically appropriate.

15.9 Whilst the content of these policy documents is noted, RN Brown accepted in evidence that she ought to have taken Caitlin's blood pressure when she made observations that Caitlin's skin was cool to touch, in other words, when it was clinically appropriate to do so. RN Brown gave evidence that she took Caitlin's temperature at the time which revealed she was afebrile, but she was still complaining of feeling hot. RN Brown gave evidence that she could not recall if this presentation caused her any concern, and could not recall whether she considered that the presentation warranted escalation. RN Brown acknowledged that it was open for observations to be taken more frequently than at three hourly intervals.

Reduction of fluids

15.10 RN Brown also acknowledged that she had turned Caitlin's fluids down at around 7:48am. RN Brown gave evidence that, as a matter of general practice, provision of fluids to patients overnight are sometimes reduced in the morning so as to either encourage a patient to drink, or if the patient has already been drinking overnight. However, RN Brown gave evidence that she could not recall whether either of these reasons applied to Caitlin, or the reason why she turned the infusion down. When asked why the turning down of fluids was not documented, RN Brown said that it was "*because I turned it down just not long before I left*". RN Brown accepted that this was not an adequate explanation for the failure to document an aspect of Caitlin's care.

Availability of equipment

15.11 It should also be noted that when Dr Ging reviewed Caitlin at around 8:30 AM on 23 October 2016, certain equipment and information was not readily available at the time of review:

(a) First, no reflex hammer was immediately available in order to test Caitlin's reflexes. As a result a nurse had to locate and retrieve a reflex hammer from another ward.

(b) Second, there was no paediatric cuff available in the ward so that Caitlin's blood pressure could be taken. Dr Ging explained that this was due to the fact that, due to a transition process, much of the equipment had been packed up in order to be transferred to a new ward.

(c) Third, the ECG which had been performed the previous night was not immediately available for Dr Ging to review. She explained, "*I had to go searching for it, so it, it took time to locate the ECG*". Upon reviewing the ECG Dr Ging explained that she became "*very concerned*" and sought a consult from the cardiology fellow who expressed the view that the ECG appeared to demonstrate pericarditis, and that a chest x-ray should be performed, with a further review from the intensive care unit.

15.12 **CONCLUSIONS:** The evidence established a number of concerns regarding Caitlin's care overnight on 22/23 October 2016. Most significantly, the absence of contemporaneous and adequate documentation regarding Caitlin's presentation, and changes to it, represented missed opportunities for medical review which may have prompted further investigations, or for Caitlin's care to be escalated, and to ensure that there was a complete clinical picture available at handover the following morning. The extent to which the absence of documentation contributed to the eventual outcome is not possible to determine on the available evidence. This is particularly so given that the observations that were performed overnight show that Caitlin's vital signs remained between the flags until a drop to the yellow zone prompted a request for a clinical review at around 7:00am on 23 October 2016.

15.13 The absence of blood pressure observations when it was clinically appropriate to do so, reduction of fluids without medical direction or appropriate documentation, and appropriate medical equipment and the ECG results not being available at the time of the morning review on 23 October 2016 are also all matters of concern, representing a departure from the quality of care that a patient in a tertiary paediatric hospital might ordinarily expect to receive. However, the available evidence again does not allow for a conclusion to be reached as to whether these matters materially affected the eventual outcome.

16. Implementation of HCCC recommendations

16.1 By letter dated 28 September 2018 the HCCC requested a response from the Network in relation to a number of factual propositions and proposed recommendations. These are described below:

(a) The Network was to report on the results of an audit of the inclusion of information provided by a GP to emergency department staff when a patient arrives by ambulance from a medical centre.

In response, the Network has conducted orientation sessions eight times per year for new medical staff working in the emergency department to identify the importance of referral letters provided by GPs to inform the care of the patient. An audit undertaken between January and June 2020 showed that a GP referral letter was not included in the records in 11% of cases of patients brought on by ambulance from the GP.

(b) The Network was to report on the results of file audits which measure compliance with patients being allocated to senior emergency medical consultants, patients having a documented plan of care at the time of admission, reviewed by a senior consultant prior to transfer of a patient, all abnormal clinical results being reviewed and documented by a senior clinician in real time, and for clinical handover to occur face-to-face and the patient's presence in accordance with the Clinical Handover Procedure Section 3 (Standard Key Principles for Clinical Handover).

In response, the Network indicated that the ISBAR nursing bedside handover checklist developed by New South Wales Health has been utilised within the Network from August 2020. Further, the Network indicated that audits in relation to care plan documentation and senior nursing and medical authorisation prior to transfer "*show consistent high rates of compliance with completion*".

(c) The Network was to report on the results of file audits to assess the adequacy of medical notations in patient records, including communication between senior clinicians, clinical reasoning, review by a senior clinician prior to transfer to another unit and parental involvement in the care plan.

In response, Dr McCaskill indicated that "*the regular audits of medical documentation have shown consistently high rates of compliance and in addition to indicate compliance with communication with the patient and family regarding the plan of care*". Further, Dr McCaskill referred to patient and family perspective surveys which indicate that in 75% of cases patients and their families received explanations in a way they could understand and in 70% percent of cases they were nearly always involved in decisions about their child's care.

16.2 During the inquest, Dr McCaskill was asked questions about aspects of the auditing of clinical reasoning, which was omitted from the response provided by the Network to the HCCC, described above. Dr McCaskill gave evidence that documentation of clinical reasoning is intended to convey the medical decision-making that has occurred which can then assist other clinicians to determine

the progress of a patient. However, Dr McCaskill explained that this was a "*relatively new request by the HCCC*" and that no audit tools are available for this type of request. Instead, in response the Network assembled an audit all to identify the most complex patient cases in order to determine whether clinical reasoning had been documented in those cases. Dr McCaskill explained that she considered that documentation of clinical reasoning is most useful in cases where a diagnosis and treatment plan is not clear and evolves over time. Further, Dr McCaskill explained that specific training had been provided to clinicians in both paediatrics and emergency regarding clinical reasoning, and to promote discussion between consultants when there is a diagnostic or treatment dilemma, and for that discussion to be documented.

16.3 By a letter dated 4 November 2019, Dr McCaskill advised the HCCC that the results of an audit tool developed to audit clinical reasoning showed that clinical reasoning was documented in 32% of cases in the emergency department, and in 45% by ward doctors for admitted patients. Relevantly, it was noted that there was no increase in more complex cases and inclusion was unrelated to the seniority of doctor completing the documentation. Dr McCaskill also noted that it is an area of ongoing education to include clinical reasoning, particularly in complex cases, and provided the HCCC with a copy of the education program developed to support documentation.

16.4 In evidence, Dr McCaskill explained that the relatively low percentage figures identified by the audit were due to the absence of any benchmark to indicate the appropriate level of documentation. She explained, "*we actually looked at the cases, it indicated that to have more information on the diagnosis and the tests that were being done and the plan of care was on many of those cases unnecessary*". Dr McCaskill went on to explain that the Network requested, but was unable to obtain, guidance from the HCCC as to how documentation was to be measured in the absence of a suitable benchmark. Dr McCaskill ultimately gave evidence that she considered that the matter of documentation of clinical reasoning and auditing was a matter for consideration by the Clinical Excellence Commission (**CEC**).

16.5 The HCCC also recommended (referred to as **Recommendation 5** in its correspondence) that the CHW was to conduct a quality audit of a selection of patient records, with quality indicators to include:

(a) that entries are contemporaneous and the chronology of events is apparent;

(b) clinical decision-making and reasoning is apparent;

(c) the care plan has been followed by subsequent clinicians and there is documentation of decision-making when the care plan is altered;

(d) when a patient has deteriorated their care has been escalated in a timely manner;

(e) neurological observations are performed according to hospital protocol;

(f) vital observations include recording of blood pressure; and

(g) there is evidence of communication with parents or carers.

16.6 The response provided by Dr McCaskill in her 4 November 2019 letter indicated that the CHW had conducted an audit in relation to clinical reasoning and decision-making, compliance with completion of a care plan, escalation of patients following deterioration, neurological observations in patients with a seizure, and conducted a survey measuring effectiveness of communication with parent. Further, the response indicated that (as had been previously reported to the HCCC) multiple documentation entries relating to a patient are displayed with a date and time stamp, thereby making the chronology clear to a clinician. In addition, the response noted that as computer workstations are available in clinical areas, documentation can be recorded contemporaneously in the electronic medical record.

16.7 However, Dr McCaskill gave evidence that a quality audit had not been undertaken (as at January 2021) in relation to these relevant changes to identify contemporaneity and whether the chronology of events in a patient's care is apparent to a clinician. Dr McCaskill explained that this has largely been due to uncertainty regarding what is regarded as being "contemporaneous" and the timeframes involved for compliance. Dr McCaskill indicated that the issue of contemporaneity has not been discussed with the HCCC, but that documentation education has occurred. Dr McCaskill explained, "*it hasn't been done and I'm actually not sure how you would do it*" but gave an undertaking to communicate with the HCCC to determine how they anticipated that it could be monitored.

16.8 **Conclusions:** Whilst it is evident that the Network has appropriately engaged with the majority of the recommendations made by the HCCC, it is equally apparent from the evidence given by Dr McCaskill that there is still scope for further engagement. In particular, the evidence identified challenges associated with audits conducted regarding documentation of clinical reasoning, and the possibility that the relatively low compliance rate identified by the audits may not be entirely accurate. Counsel for the Network submitted that the CHW has embarked upon engagement with the CEC to include medical and nursing practices in discussions regarding how to develop skills in clinical reasoning and improve the documentation of the same. Clearly, this is an ongoing process. Having regard to the challenges posed, and the evidence given by Dr McCaskill regarding the availability of the CEC to assist in this process, the following recommendation is desirable.

16.9 **Recommendation 4:** I recommend that the Sydney Children's Hospitals Network continue to engage with the Clinical Excellence Commission to consider any necessary steps to improve documentation of clinical reasoning, and appropriate methods by which to audit compliance of such documentation.

16.10 The evidence also established that the Network has not (as at January 2021) provided a complete response to the recommendation made by the HCCC regarding its recommendation to conduct a quality audit of a selection of patient records. Specifically, whilst changes have been implemented to allow for relevant electronic medical records to be date and time stamped, and for computer workstations to assist with contemporaneous documentation, no actual audit has been performed in relation to these areas of quality improvement.

16.11 Counsel for the Network submitted that a recommendation is neither necessary nor desirable given the Network's "*substantial compliance*" with Recommendation 5 made by the HCCC. Further, counsel for the Network also referred to the Network's letter of 7 May 2021 to the HCCC. This letter notes that the Network, in discussions with the HCCC, has now established appropriate parameters to assess contemporaneous recording of clinical notes so as to allow for a quality audit to be undertaken, with results to be provided to the HCCC within two months. This represents a further step taken by the Network to appropriately engage with the recommendation made by the HCCC. To ensure that overall compliance with the recommendations is achieved, the following recommendation is desirable.

16.12 **Recommendation 5:** I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the Health Care Complaints Commission (HCCC) so that further consideration may be given regarding the extent to which the Sydney Children's Hospitals Network has demonstrated compliance with recommendations made by the HCCC in its correspondence of September 2018.

17. Findings pursuant to section 81 of the *Coroners Act 2009*

14.1 Before turning to the findings that I am required to make, I would like to acknowledge, and express my gratitude to Ms Maria Gerace, Counsel Assisting, and her instructing solicitor, Ms Clara Potocki of the NSW Crown Solicitor's Office. The Assisting Team has provided invaluable assistance and demonstrated exceptional professionalism in preparing for the inquest, and conducting the inquest itself. I am also extremely grateful for the sensitivity and empathy that they have shown throughout the course of this particularly distressing matter.

14.2 I also I also thank Detective Senior Constable Adriano Leite for his role in compiling the initial comprehensive brief of evidence.

14.3 The findings I make under section 81(1) of the Act are:

Identity
The person who died was Caitlin Cruz.

Date of death
Caitlin died on 23 October 2016.

Place of death
Caitlin died at The Children's Hospital at Westmead, Westmead NSW 2145.

Cause of death
The cause of Caitlin's death was complications of Influenza B viral infection.

Manner of death
Caitlin died of natural causes, in circumstances where a number of critical factors contributed to the tragic outcome. These factors include the inaccurate and unreliable transfer of information from a pre-hospital setting to a hospital setting, the inability to perform an electrocardiogram in a timely manner, the absence of adequate documentation and the absence of appropriate escalation of Caitlin's care for review. This in turn led to missed opportunities for further investigations to be performed, more timely recognition of Caitlin's deterioration and specific supporting therapies being instituted to manage Caitlin's condition that may have altered the eventual clinical course.

15. Epilogue

15.1 These findings have been delivered close to the end of another year, a time when the thoughts of many turn to family and loved ones. These thoughts are perhaps even more pronounced in 2021, a year which has reminded many people of the importance of family, and of being connected to one another. It is heartbreaking to know that Caitin's family will feel her loss most deeply at this time, this year, and for the years to come.

15.2 However, it is clear to those who know Caitlin, even those who only had the privilege to know a little about Caitlin as a result of the inquest itself, that her life, and the joy that she brought to

others will not be forgotten. Caitlin's wonderful spirit, her special qualities, and the amount of life that she lived in her brief three years will endure. As Caitlin herself was a fighter, so too have her parents selflessly fought for change and improvement that will hopefully benefit many families within our community.

15.3 On behalf of the Coroner's Court of New South Wales, I offer my deepest sympathies, and most sincere and respectful condolences, to Caitlin's parents, Mitch and Marie; to Caitlin's sister, Chloe; and Caitlin's other family and loved ones for their most painful and devastating loss.

15.4 I close this inquest.

Magistrate Derek Lee
Deputy State Coroner
9 November 2021
Coroner's Court of New South Wales

Inquest into the death of Caitlin Cruz

Appendix A

Recommendations made pursuant to section 82(1) *Coroners Act 2009*

To the Chief Executive Officer, Royal Australian College of General Practitioners (RACGP):

1. I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the RACGP, inviting the RACGP to consider providing a reminder to general practitioners, in circumstances where a patient is transferred by ambulance directly from a general practice/medical centre to hospital, of the need:

   (a) to identify the hospital where the patient is to be transferred;

   (b) for a referral letter to be sent to that hospital expeditiously; and

   (c) to communicate with the receiving hospital via phone expeditiously.

To the Chief Executive Officer, Royal Australian College of General Practitioners; Chief Executive, NSW Ambulance & Secretary, NSW Health:

2. I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the RACGP, NSW Ambulance and NSW Health to inform consideration of whether the feasibility of a consolidated electronic platform to

   (a) facilitate the accurate and timely transfer of clinical information; and

   (b) enhance patient safety during clinical handover;

   from a pre-hospital setting to a hospital setting, ought to be explored by these organisations in collaboration.

To the Health Care Complaints Commission (HCCC):

3. I recommend that the evidence of Nurse Unit Manager Celeste Daniels and a copy of the findings in the *Inquest into the death of Caitlin Cruz* be forwarded to the HCCC for further consideration regarding the adequacy of the explanation provided to the HCCC in relation to the inability to perform an ECG in the emergency department on 22 October 2016, and for any further action considered necessary by the HCCC.

4. I recommend that a copy of the findings in the *Inquest into the death of Caitlin Cruz* be provided to the HCCC so that further consideration may be given regarding the extent to which the Sydney Children's Hospitals Network has demonstrated compliance with recommendations made by the HCCC in its correspondence of September 2018.

To the Chief Executive, The Sydney Children's Hospitals Network:

5. I recommend that the Sydney Children's Hospitals Network continue to engage with the Clinical Excellence Commission to consider any necessary steps to improve documentation of clinical reasoning, and appropriate methods by which to audit compliance of such documentation.

Magistrate Derek Lee
Deputy State Coroner
9 November 2021
Coroner's Court of New South Wales