



STATE CORONER'S COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of baby Everett Carleton
Hearing date:	23-26 October 2023
Date of findings:	12 April 2024
Place of findings:	NSW State Coroner's Court - Lidcombe
Findings of:	Magistrate Carmel Forbes, Deputy State Coroner
Catchwords:	CORONIAL LAW – cause and manner of death of a baby at birth–ultrasound report- continuous CTG monitoring- caesarean section-separation of the umbilical cord- transected placenta-NICU response
File number:	2018/245959
Representation:	Ms D Ward SC and Mr I Fraser Counsel Assisting, instructed by Ms K Campbell, NSW Crown Solicitor's Office Mr S Barnes, instructed by Ms N Shaw of Avant Mutual, representing Dr B Hollis and Dr F Rahimpanah Mr P Rooney, instructed by Ms R Cooke of Hicksons, representing South Western Sydney Local Health District and Dr I Callander Ms E Sullivan, instructed by Mr A Saxton of Meridian Lawyers, representing Dr N Reza Pour Ms Kim Burke, instructed by Ms S Wallace of Moray & Agnew, representing Dr S Ahmed

<p>Findings:</p>	<p>Identity of deceased: The deceased person was Everett Carleton</p> <p>Date of death: Everett Carleton died on 8 August 2018</p> <p>Place of death: Everett Carleton died at Liverpool Hospital, NSW</p> <p>Cause of death: The cause of Everett's death was multifactorial with severe hypoxia/hypotension which occurred in the background of a high-risk pregnancy, incision of the placenta, transection of the umbilical cord and a delayed delivery.</p> <p>Manner of death: The manner of his death was in hospital at birth after a caesarean section.</p>
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REASONS FOR DECISION

1. This is an inquest into the tragic death of Everett Carleton. He was born and died on 8 August 2018 at Liverpool Hospital, a second son to Ms Kirsty Carleton and Mr Chase Carleton.
2. A coroner's primary role is to investigate and make findings as to the identity of the deceased person, the date and place of the death, and the manner and cause of death. A further role for a coroner is to assess whether there has been an appropriate response to an unexpected death and whether more needs to be done to protect others from a similar death.
3. This inquest has looked closely at the cause and manner of Everett's death.
4. The following issues emerged as the primary matters considered during the hearing:
 - The significance of the incorrect reporting of the placenta site as posterior and high on the ultrasound of 31 July 2018
 - The significance of the absence of CTG monitoring/doppler while Ms Carleton waited in the anaesthetic bay for her caesarean section.
 - The caesarean section
 - The appropriateness of the NCIU response, and
 - The cause of Everett's death

History

5. The birth of Ms Carleton's first child Heath, in 2015, did not go to plan. Heath was found to be in foetal distress necessitating an emergency Lower Sector Caesarean Section or "LSCS". This meant Mr Carleton was not able to be present for the birth of

his son and Ms Carleton had a difficult reaction to the general anaesthetic and was quite unwell after the event, over and above the physical toll involved in recovering from such surgery.

6. When Ms Carleton fell pregnant in late 2017, they hoped for a better birthing experience and knew this would require the support of a number of specialties involved in Ms Carleton's care. Ms Carleton has type 1 diabetes which she manages via an insulin pump under the care of an endocrinologist.
7. Ms Carleton also has Immune Thrombocytopenic Purpura which, although described as fluctuating and mild at various points within the medical records, means that she sometimes has a lower-than-normal blood platelet count. This can put Ms Carleton at increased risk of bruising and bleeding and is managed with the care of her haematologist.
8. Additionally, after Heath was born Ms Carleton experienced Graves Disease. Fortunately, Ms Carleton later went into remission which continued through her pregnancy with Everett.
9. Even though Ms Carleton was adept at managing her health conditions, her planned pregnancy with Everett was a high-risk pregnancy and required input from endocrinology, haematology, and anaesthetist specialties, in addition to the midwives and obstetrician/gynaecologists at Campbelltown Hospital. For instance, Ms Carleton required more frequent maternal and foetal assessments (including various ultrasounds) than might be expected in a pregnancy where the mother did not have pre-existing medical conditions.
10. She hoped for a vaginal delivery of this baby after the caesarean delivery for Heath. This was not guaranteed of course, nothing is. A vaginal birth depended upon a number of different factors, but with careful management of Ms Carleton's platelet levels and careful review of foetal growth (given Ms Carleton's diabetes) there was

reason to hope that a vaginal delivery *might* prove possible closer to the expected date of confinement of 30 August 2018.

11. Ms Carleton attended for a range of assessments across the pregnancy.
12. On 15 February 2018 Ms Carleton had a nuchal translucency examination. No abnormality was identified in the foetus, the amniotic fluid level was normal, and the placenta was recorded as on the anterior uterine wall.
13. On 5 April 2018 a foetal morphology assessment was conducted. No unusual features were seen. The placenta was reported as on the anterior uterine wall with its leading edge at least 1.1 cm away from the internal cervical os (the opening that leads to the uterus).
14. On 17 May 2018 a foetal growth and wellbeing scan was performed. The placenta was reported as still low lying, being on the anterior uterine wall with its leading edge at least 2.6cm away from the internal cervical os.
15. On 15 June 2018 Ms Carleton attended I-MED Network Radiology for an obstetric ultrasound which reported that the placenta was anterior and not low and that the lower edge of the placenta lied 78mm from the os.
16. On 12 July 2018 Ms Carleton attended I-MED Network Radiology for an obstetric ultrasound which reported that the placenta was anterior and 100mm from the internal os.
17. Across the various types of ultrasound assessments conducted from February until July 2018 the placenta was consistently reported as being anterior.
18. The distance between the lower edge of the placenta and the internal os grew over the same period. The placenta was getting higher.

19. On 13 July 2018 Ms Carleton met with Dr Getta who was her clinical haematologist. Whilst her platelet count was acceptable at 87, he recommended close monitoring and administration of intravenous immunoglobulin prior to the planned induction of labour. He recommended that the delivery occur at Liverpool Hospital, given the possible need for platelet transfusion.

Transfer of care to Liverpool Hospital

20. Prior to Ms Carleton's admission to Liverpool Hospital, she attended for a pre-anaesthetic assessment on 24 July 2018. This included a discussion about Ms Carleton's hopes for a vaginal birth with the anaesthetic registrar recording that Ms Carleton was unlikely to have adequate platelet numbers for an epidural in labour and if the birth proceeded to caesarean section a spinal epidural might be considered, depending upon Ms Carleton's platelet levels and the assessment of the anaesthetist then involved.
21. On 30 July 2018 Dr Getta wrote a letter stating "Ms Carleton is 35 weeks pregnant and has now had her care transferred to Liverpool. An induction of labour is planned possibly as early as the end of next week. Plt count last week was $75 \times 10^9/L$. Assessment and Plan: I have scheduled her to have 2 days of IVIG next week on Monday and Tuesday if platelets remain below 80...I would aim to get the platelets over 80...so she could have neuraxial anaesthesia during delivery. She will have a FBC later this week. I will review her as an inpatient and plan follow-up thereafter".¹
22. It was hoped that the platelet count would rise prior to the induction of labour through two days of intravenous immunoglobulin.
23. On the Friday prior to her admission, Ms Carleton attended the Feto-Maternal Unit at Liverpool Hospital for a growth ultrasound. This was ultimately reported by Dr Brian Hollis and included the phrase "Placenta: posterior high". There was no reference to the distance between the leading edge of the placenta and the interior os. Dr Hollis

¹ Exhibit 1, Tab 28, p. 10.

stated that the scan was requested for foetal growth and wellbeing and not for placental location. If the request were made for placental location, then the report would be more detailed than the one he provided, and one would expect images of the placental site to be taken together with measurements from the lower edge of the placenta to the internal cervical os.

24. This was the only occasion on which the placenta was reported to be posterior rather than anterior. The reference to a posterior location was incorrect. Dr Hollis made an error in describing the placenta as posterior when he used the drop-down box to generate the report and inadvertently selected the wrong descriptor.
25. As for the description of the placenta being “high” Dr Hollis reviewed the limited images that remain available from this growth ultrasound on 31 July 2018 and maintains that this was correct. Dr Hollis tells the Court that for a placenta to be deemed low-lying on an ultrasound assessment, the lower edge is located closer than 3cm to the internal os. By ultrasound definition, a placenta is reported as high when the leading edge is greater than 3cm from the internal os.
26. Dr Hollis’ interpretation is supported by the opinion of Associate Professor Scott, an Obstetrician and Gynaecologist, with sub-specialist qualifications in Maternal Fetal Medicine and Obstetric and Gynaecological Imaging, who independently reviewed, (at the Court’s request), the 6 images provided from the growth ultrasound on 31 July 2018. Associate Professor Scott stated that the 6 images provided were not ideal to determine the placental position but agrees that no placenta can be seen in Image 1 of the foetal head which suggests the placenta was not low lying.
27. Associate Professor Scott has also reviewed the more extensive range of images available from the ultrasound of 12 July 2018 (some 19 days before the growth ultrasound that Dr Hollis reported upon). Associate Professor Scott largely agrees with the opinion expressed by the doctor who reported on that ultrasound that the distance between the lowest placental edge to the cervix was 99.86mm (ie almost 10

cm). These findings are consistent with the placenta being "high". I am satisfied on balance that the placenta was in fact high.

Events following admission on 6 August 2018

28. Ms Carleton was admitted to Hospital on Monday 6 August 2018 with an elective caesarean section planned for Thursday of that week.
29. Ms Carleton's platelet level was reported as 80 on the Friday before her hospital admission and so on the first evening in hospital she commenced a transfusion. Despite this it seems that Ms Carleton's platelets had dropped to 77 by Tuesday 7 August 2018.
30. According to an entry in the hospital progress notes, Ms Carleton was due to be reviewed by the haematology team on Wednesday prior to the planned caesarean listed for Thursday. As it transpired, this further haematology review was overtaken by later events.
31. Ms Carleton was otherwise reported as being stable on Tuesday.
32. On Wednesday morning, 8 August 2018, routine CTG monitoring showed some decelerations and no reactivity. This prompted the midwife to speak with a doctor who recommended a period of further monitoring. This continued and at around 10:00am the midwife became further concerned and called for a clinical review.
33. Dr Reza Pour attended in response. At this time Dr Reza Pour was a first-year trainee with the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Dr Reza Pour was on a shift in the Birthing Unit, called in to cover for the ward registrar who had called in sick. Dr Reza Pour had not previously been involved with Ms Carleton's care.

34. Dr Reza Pour reviewed the CTG trace and examined Ms Carleton. She then spoke to Dr Ahmed who was the Consultant Obstetrician on call for the Birthing Unit. Dr Reza Pour also sent Dr Ahmed some photos showing the foetal heart trace.
35. According to Dr Ahmed, the CTG trace was pathological, signifying that the foetus was unwell (possibly through lack of oxygen) and required delivery (unless there was a reversible factor that could be corrected quickly).
36. Ms Carleton was not yet in active labour and so a decision was made to prepare for a Category Two caesarean section.
37. Dr Reza Pour reviewed the ultrasound report previously prepared by Dr Hollis following the ultrasound performed in the Foetal Maternal Unit on 31 July, that is, just over a week prior. That document reported the placenta to be posterior and high.
38. Dr Reza Pour contacted the anaesthetic team and the on-call haematology consultant for urgent review. The on-call haematologist was Dr Getta who was already familiar with Ms Carleton's case. The on-call anaesthetist was Dr Huang.
39. A recommendation was made that Ms Carleton should receive a platelet transfusion if her platelet count turned out to be less than 80.
40. Ms Carleton's platelets were later reported to Dr Reza Pour as having fallen to 71. Under the earlier plan Ms Carleton would need to have a platelet transfusion prior to the caesarean taking place. Things did not turn out this way however because there were no Rh-negative platelets available at the Hospital and the obstetric team thought that the baby could not wait for an urgent platelet delivery from the Red Cross.
41. Professor Korda, Conjoint Professor of Obstetrics and Gynaecology, who independently reviewed this matter stated that the Hospital had planned for a caesarean section to take place on Thursday and would have arranged for the delivery

of Rh-negative platelets in preparation for that procedure. He says that platelets are typically delivered only a few hours prior to an elective procedure.

42. According to Professor Korda, platelets are usually stored at a blood bank after being obtained from donors and their shelf life is only five days from the date of collection. Additionally, pooled platelets expire four hours from the time of preparation (that is pooling).
43. Dr Reza Pour contacted the anaesthetic consultant to discuss a plan for Lower Segment Caesarean Section under general anaesthetic because they were unable to delay any longer in order for platelets to arrive, to be transfused, and for a further platelet measure to be obtained.
44. Dr Reza Pour called a Category 2 emergency caesarean at around 11:07am.
45. Dr Ahmed stated that he initially intended to be present for the caesarean section and to meet the patient and introduce himself to her in the theatre prior to surgery. He said that he got as far as the theatre changing rooms when he was asked to attend another patient who was fully dilated and experiencing foetal bradycardia, that is a foetal heart rate dropping below 110 beats per minute. This patient also required urgent assessment and delivery and there was no other senior clinician available to provide support to the birth unit.
46. Dr Ahmed says he contacted the senior registrar as he was leaving the theatre to determine whether Dr Reza Pour was able to start Ms Carleton's operation on her own. At this time both Dr Ahmed and Dr Reza Pour thought they were dealing with a routine lower sector caesarean section. Dr Ahmed was told that Dr Reza Pour had already been credentialed to perform such a procedure and she would not require a senior doctor to be present at the start of the operation.
47. Dr Ahmed says that given the delay in organising the caesarean section, the baby needed to be delivered quickly and he was comfortable that Dr Reza Pour could start

the surgery rather than wait for him to return. He considered the risk of haemorrhage due to difficulty controlling bleeding from Ms Carleton's low platelet count was more of a concern *after* the delivery, that is during closure, by which time he would be available in the operating theatre.

48. The patient that Dr Ahmed had been called away to see in the Birthing Unit delivered her baby at 11:41am. However, before Dr Ahmed could return to Ms Carleton and Dr Reza Pour, he was held up with another emergency in the Birthing Unit, dealing with a severe pre-eclampsia patient.
49. Meanwhile Dr Reza Pour waited in the operating theatre for her patient but there was a delay in Ms Carleton arriving. Dr Reza Pour went down to the ante natal ward to check on the patient's whereabouts.
50. Ms Carleton was taken from the Birthing Unit to the theatre entrance by one of the midwives from the Birthing Unit and was then handed over to another nurse.
51. According to the midwife involved in the transfer, the CTG monitoring had to finish as Ms Carleton left the Birthing Unit because the monitor cannot operate whilst the patient is in transit. The CTG monitor needs a power source and there is no power source on the patient's trolley whilst the patient is being transferred to the operating theatre.
52. An unexpected delay followed. Ms Carleton was initially in the anaesthetic bay waiting to go into the operating theatre when she met with the anaesthetist Dr Huang. When told by Dr Huang that she would in fact require a general anaesthetic because her platelet count was only at 71, Ms Carleton was distressed.
53. Dr Huang says that Ms Carleton did not initially agree to the general anaesthetic, so Dr Huang called for Dr Reza Pour to come to the anaesthetic bay to explain the risk to the baby if surgery was further delayed.

54. Dr Reza Pour attended and spoke to the parents in the anaesthetic bay. She says she apologised to them about the development in their plans for delivery but explained that they could not proceed with spinal anaesthesia due to the risk of hematoma and the obstetric team didn't feel they could delay the procedure any longer.
55. Whilst these discussions proceeded in the anaesthetic bay, Everett's condition was not being monitored. That is, there was no CTG monitoring taking place nor apparently a Doppler being used to listen to the foetal heart rate.

Events in the operating theatre

56. Anaesthesia commenced at 11:57am.
57. The Operation Report reads as follows "Pfennestiel incision through the old scar, Routine entry, blunt and sharp dissections of adhesions, Dense adhesions from the previous CS, Bladder partially reflected, Transverse lower uterine segment incision, Cut through anterior placenta praevia (undiagnosed) at 12:16pm".²
58. This was an entirely unexpected development. Dr Reza Pour cut through an unexpected placenta praevia. There was extensive bleeding.
59. According to Dr Reza Pour she immediately called Dr Ahmed and asked him to come to assist urgently. She says that due to the significant amount of bleeding the delivery of the baby was very difficult. Dr Reza Pour applied forceps twice but could not deliver the head. She then turned to transverse fundal pressure and attempted to deliver the baby breech, but this was unsuccessful.
60. Dr Rahimpanah (Obstetrician) was about to commence a procedure in a nearby operating theatre. He was already scrubbed, and his patient was already anaesthetised when he was told that a registrar required assistance as a matter of urgency in a nearby theatre.

² Exhibit 1, Tab 28, p. 124.

61. Dr Rahimpanah entered the theatre where Ms Carleton was present at 12:21pm and within a minute delivered the baby. Dr Rahimpanah says the baby's hands were out of the uterus when he entered the operating theatre, but he managed to push the baby's hands back in and deliver the baby cephalic (or headfirst).
62. Dr Rahimpanah says that Everett was floppy and pale, and he noticed that the umbilical cord had been transected. He immediately clamped the foetal end of the cord and handed the baby to the NICU team.
63. Dr Reza Pour tells the court she cannot recall transecting the umbilical cord and does not know whether it occurred by blunt force trauma or direct incision. She thought that the information about the transected umbilical cord was passed onto the neonatal team and that it was readily apparent that the cord had been transected.
64. Dr Ahmed believes he entered the theatre between 12:25pm and 12:30pm by which time Everett had been delivered. He scrubbed in and took over from Dr Rahimpanah to close the uterus and finish the rest of the operation. He says he noticed a detached segment of the umbilical cord in the drapes.
65. Meanwhile, Dr Ian Callander, the NICU staff specialist was present in the theatre for the delivery. He would not ordinarily be present for a caesarean section that had been coded yellow because this is ordinarily considered a low level of risk and would be attended by a junior neonatal registrar and a midwife using a basic neonatal resuscitaire. However, on this occasion the registrar was new to the hospital and so Dr Callander was present to support and supervise.
66. The neonatal team were expecting a routine lower sector caesarean section delivery. The NICU registrar recalled that there was lots of bleeding after the first incision was made and the Obstetric Registrar said that the placenta was praevia.

67. Everett was placed on the resuscitaire pale, limp and making only occasional gasping movements. The cord was transected 10 cm from Everett. It was snapped at both foetal and placental sites and came out separately. Dr Callander immediately took over resuscitation efforts and commenced intermittent positive pressure ventilation via a face mask. The heart rate was reported at 80 beats per minute which then fell to 60 beats per minute. Dr Callander intubated Everett with a 3.00 endotracheal tube using a laryngoscope with a noticeably dim light. Dr Callander felt the tube was in the correct place, but the next assessment of heart rate was not able to detect it clinically and so the tube was removed, and he requested a 3.5 endotracheal tube to replace it.
68. The light on the laryngoscope became so dim that Dr Callander was unable to see with it and so rather than insert the new tube he recommenced intermittent positive pressure ventilation with neopuff then bag mask and mask oxygen at high pressure.
69. Cardiac compressions commenced whilst Dr Callander was ventilating Everett via the mask and waiting for new batteries to be placed in the laryngoscope handle. Even with new batteries however, the light on the laryngoscope was still dim. This was despite the fact that the attending midwife and NICU Registrar had each checked that the light on the laryngoscope was functioning as part of their review of equipment prior to Everett's delivery.
70. Ultimately an adult laryngoscope handle that fitted the neonatal blade was provided and Dr Callander could then easily intubate Everett with a 3.5 endotracheal tube. Dr Callander was confident that Everett's lungs were being ventilated but sadly his heart rate never returned.
71. Dr Callander called for a neonatal MET team to attend so that both advanced personnel and equipment could join the resuscitation efforts.
72. Once the neonatal MET team arrived with their additional equipment, ventilation and cardiac massage was reviewed and found to be adequate but ultimately Everett was

confirmed asystole for well over 10 minutes. The decision was made to stop all treatment.

73. Everett was declared deceased at 12:47pm.
74. Dr Callander says it was only *after* resuscitation efforts had finished that the neonatal team were made aware that there had been a separation of the umbilical cord prior to delivery. Similar evidence is given by the anaesthetist Dr Huang and by the clinical midwifery consultant who was present in the theatre.
75. Dr Callander describes this as a critical piece of information. He says that if he had known at the time that Everett's umbilical cord had snapped, and the placenta had been incised during the caesarean section incision he would have attempted to give Everett blood urgently (requiring a high risk resuscitator and umbilical vein catheter). He would also have required a high risk NICU team to attend urgently for further lifesaving efforts.
76. Even so, the evidence is that Everett might not have been able to be saved.
77. The blood that Dr Callander would have given to Everett was not readily available to the NICU at the theatre. Associate Professor Gill is a full-time clinical neonatologist with major research interests in the neonatal transition at birth and neonatal cardiology teaching. He has been the lead clinician in resuscitation in Western Australia and introduced a state-wide neonatal resuscitation training program to Western Australia. He gave evidence that at his own institution, a 400 ml pack of O negative blood (which represents the entire blood volume of a 4-kilogram baby) is kept available for the resuscitation of babies. He said that the pack is kept on the theatre floor in a fridge in the recovery room approximately 50 metres from the theatre. The NSW Local Health District informed the court that the closest source of O negative blood at Liverpool Hospital is in the blood bank approximately 10 minutes away from the theatre. The Local Health District informed the court that the storage of O negative blood in the operating theatre requires various considerations and

involves many parties. Having heard from Associate Professor Gill, I am of the opinion that it would be appropriate that the Local Health District consider this issue.

Associate Professor Gill has set out the difficulties his hospital experienced in implementing such a system in his report. He was very sure that it was a necessary and worthwhile innovation. I propose to recommend that the Local Health District consider having O negative blood available for resuscitation of babies in or near to theatre.

Issues

78. An issues list was prepared prior to the inquest commencing to provide structure to the hearing. Some of the issues are no longer of great relevance. I have considered all the submissions made by the parties and I am of the view that the following matters are the relevant issues that require comment.

A. The significance of the incorrect reporting of the placenta site as posterior and high on the ultrasound of 31 July 2018.

78. Exhibit 3 sets out a table with a summary of the ultrasounds that Ms Carleton underwent. The ultrasounds demonstrate an overall trend of the placenta advancing up and away from the internal os.
79. Associate Professor Fergus Scott, (University of New South Wales) Sydney Ultrasound for Women, independently reviewed the ultrasound evidence. He stated the placenta in the 31 July 2018 ultrasound accurately recorded the placenta as not being low lying. He confirmed that Dr Hollis incorrectly recorded the placenta as posterior.
80. Dr Hollis informed this court that he incorrectly recorded the placenta position as posterior because he selected a wrong drop-down box when he generated his report.
81. Since this case, changes have been made to the system that Dr Hollis used to report on the ultrasound. The new program has two options. The first being that the radiologist is required to type in the placental position. The second includes a drop-down menu, however the radiologist is required to activate two further screens

relating to the placenta before activating a drop-down menu. The placental position 'anterior' is separated from 'posterior' within the drop-down list of position descriptors.

82. In addition, the local health district has implemented changes to its procedure relating to Caesarean sections. As of June 2019, a revised policy requires that where possible, placental location should be documented from two separate ultrasound reports prior to the commencement of the caesarean section. This innovation will encourage an inconsistency between placental location recorded in two reports being noted and will prompt further review.³
83. Had the ultrasound report of 31 July 2018 correctly recorded the placenta as anterior it would not have changed the decision to permit Dr Reza Pour to commence the caesarean section on 8 August 2018 in the expectation that Dr Ahmed would later become available. Dr Reza Pour was credentialled to perform lower segment caesarean sections. She had performed about 100-150 routine lower segment caesareans in her career.
84. Professor of Obstetrics and Gynaecology from Western Sydney University, Andrew Korda independently reviewed all of Everett's medical records and he was not critical of the decision for Dr Reza Pour to perform the caesarean.
85. There was no agreed definition by the obstetricians and radiologists involved in this case as to what measurement constitutes a low placenta. The Local Health District informed the Court that in the context of a planned caesarean section or in the case when deciding between a vaginal birth or an operative delivery, there is a value in measuring and documenting the distance between the lower limit of the placenta and the internal os. This is specifically the case when a placenta is labelled as low lying or previa. There is value in obtaining this measurement at the outset of the pregnancy and thereafter to determine the safety or otherwise of a vaginal birth.
86. Where a decision has been made for a caesarean section, operative planning in regard to the surgical approach requires a detailed knowledge of the site of the placenta to determine the safety of a lower segment transverse incision versus a horizontal

³ Exhibit 7

uterine incision to avoid a low lying laterally sited placenta or a fundal incision to avoid a placenta previa and associated concerns around placental adhesive disorders.

87. There is already a practise in the Local Health District unit to measure this distance. Although the distance may not always be exact it does serve as an extremely useful guide to the way a caesarean section is planned and conducted.
88. When the placenta is determined to be well clear in the early stage of the pregnancy and not expected to encroach on the surgical access, measurements are less relevant.
89. The Local Health District supports a recommendation to consider including the measurement of the estimated distance from the leading edge of the placenta to the internal os where it is relevant to the planning and management of a surgical delivery but not in the case where the placenta is remote from the lower segment and not anticipated to impact on delivery management.

B. The caesarean section

90. Ms Carlton had been specifically transferred to Liverpool hospital because of her high-risk pregnancy. Dr Ahmed informed the court that the risk factors did not make the caesarean more difficult. It was Ms Carleton's low platelet count that presented a potential surgical risk and that she may have had excessive bleeding from an incision and delayed clotting.⁴ He said that the risk was not so grave as to prevent the procedure from commencing as her platelet count was at 70,000.
91. The evidence suggests that at the commencement of the caesarean section either Dr Reza Pour unintentionally cut into the uterus at a high point where she also incised the high sitting placenta or alternatively that prior to the caesarean Ms Carleton experienced a placental abruption.
92. Dr Reza Pour gave evidence that she cut into the uterus in the lower segment. Associate Professor Korda was of the opinion that this was likely. Dr Ahmed was clear

⁴ Hearing Day 3

that he would have noticed if the incision had been high. He took over after Everett's delivery and closed the uterus. On the evidence I am satisfied on balance that Dr Reza Pour cut the uterus in the lower segment.

93. Dr Ahmed informed the court that the most likely explanation for what occurred was that there could have been a placenta abruption. Placental abruption is when the placenta is partially lifted from the wall of the uterus and there can be bleeding from the edge. If this happens the uterus can become irritable and start contracting. It could have been that when the uterus was incised the fluid that was noted to be a dark red colour came out and that this caused a change in the volume of the uterus. The uterus would have decreased in volume and the placenta would suddenly come closer to the incision and an inexperienced person might think that they were faced with a placenta previa. He explained that the usual way to deal with the placenta previa is to cut through the placenta to get to the baby.
94. The handwritten notes of the scrub nurse recorded that there were adhesions from the previous scars that Dr Reza Pour had to go through. She said that the fluid that burst out was deep red blood not bright fresh blood and that there was a lot of it pouring out. Doctor Ahmed thought that this account fit quite well with the possibility of an abruption. Doctor Ahmed had an early discussion with the registered medical officer who assisted Dr Reza Pour and they at the time discussed the possibility that there had been a placental abruption. Furthermore, Dr Barclay the head of obstetrics and gynaecology also hypothesised about the involvement of a possible partial placental abruption in her early review of the matter. This was supported by Dr Rahimpanah.
95. Professor Korda informed the court that thrombocytopenia, diabetes and a previous caesarean section may be risk factors for a placental abruption.
96. Professor Korda informed this court that the sequence of events was a unique set of circumstances that he has never encountered and that he couldn't dispute there being a possibility of an abruption but that they are extremely unusual and rare.

97. Ultimately, there is no doubt that the placenta was transected. Professor Korda said that regardless of why the placenta was transected when this happens and there is an enormous amount of bleeding and even a very senior consultant may have difficulty delivering the baby. He said that obstetrics is a speciality which things can go wrong very suddenly and sometimes unpredictably. He thought that it was appropriate that first year registrars do caesarean sections or commence caesarean sections when a consultant is nearby. He said that he'd been aware of this happening for a long, long time and that that is the way obstetrics is taught in all teaching hospitals in Sydney and in Australia. He said that the sort of obstetric disaster that occurred in Everett's case cannot be trained for. He said abruptions can occur without symptoms or signs. They can vary in significance and seriousness. They may not become obvious until a caesarean is conducted.
98. During the caesarean the umbilical cord detached at two separate points. Dr Reza Pour says that she cannot recall transecting the umbilical cord. She said that she did not know whether this occurred by blunt force trauma or direct incision.
99. Doctor Ahmed said that it is hard to have blunt force trauma to divide the cord in two because the cord is quite a tough structure, so unless it is weakened at some point by at least a partial cut, it's not possible. Dr Arbuckle informed the court that there wasn't much of a distance between the cord and where the placenta was separated and the place of the incision. This raises the possibility that the placental end of the cord was quite likely incised in some way around the time the placenta was incised. In relation to the foetal end of the cord Dr Arbuckle noted that there was no evidence that it was necrotic in any way or any clot. She saw no reason for the cord to rupture and that that would be very rare. She said that from the photo of the cord, she could not tell whether it was pulled apart or whether there had been a transection which became pulled apart during the surgery. She said it was very difficult to be sure exactly what happened.

100. In any event the fact that the cord was detached at both ends was not conveyed to the NICU team in attendance in the operating theatre.
101. There was no effective communication on this issue. Dr Callander said that he had not been aware that there had been a separation of the cord prior to the delivery. He said that he learned of it from one of the obstetricians afterwards. He also said that he had not been aware of the incision of the placenta and that he first became aware of it about two months prior to the inquest. He said that from a neonatal perspective the cord transection was the most important thing for him to know and that had he known he would have taken a different path.
102. Dr Rahimpanah told the court that he remembered saying that the cord had been transected but he did not remember how loud he said it or to who he addressed it to. He said that once he delivered the baby, he clamped the foetal end and handed the baby to Dr Callander. Dr Reza Pour said that she heard Dr Rahimpanah communicate that the cord had been transected but she could not remember hearing anything from the NICU team to confirm that they had heard him. There was no mention in her operation report of the any communication regarding the cord. The NICU registrar said that she heard the obstetric registrar say that the placenta was praevia, she made no reference to hearing that the cord had been separated or transected prior to delivery. The anaesthetist said that she could not recall there being any discussion that the cord had been transected during delivery. The midwife said that she was not aware that the placenta or the umbilical cord had been transected and she was of the opinion that nothing to that effect had been verbalised in theatre. None of the other staff present refer to anything being said about the separation of the cord.
103. I am satisfied that there was no effective communication by the obstetric team to the NICU of the fact that the cord had separated prior to delivery.
104. Associate Professor Gill an independent expert in neonatal intensive care who reviewed this case informed the court of a practise of timeout meetings between obstetrics and neonatal teams to discuss, plan and clarify roles before an incision is

made. In his experience this improves the free flow of communications between teams with the neonatal team being able to ask questions of their obstetric colleagues. He said that in 2018 this concept was only in its evolution.

105. Since 2018 Liverpool Hospital has adopted a timeout team meeting before each surgery. This has now become the standard practice.

C. The appropriateness of the NICU response

106. At birth Everett's heart rate was 80 beats per minute and he was observed to be gasping. CPR was commenced by way of an invasive positive pressure ventilation via a face mask. Intubation attempts were initially complicated by the laryngoscope light not functioning properly. His condition did not improve despite resuscitation continuing. Adrenaline was administered. No cardiac activity was identified by ultrasound. When the umbilical vein catheter (UVC) arrived with the NICU team Everett had been asystole for over 10 minutes and there were no signs of life for almost 20 minutes.
107. Dr Callander said that even with high risk resuscitative equipment and extra assistance from NICU he did not believe he could have saved Everett.
108. The independent expert Associate Professor Gill made no criticism of the NICU response.
109. Dr Gill considered however, that a UVC should always be available. He also said that a functioning laryngoscope, a pedi-cap CO2 detector and ECG leads should also have been available.
110. The Local Health District has now confirmed that the equipment kept on all of the NICU resuscitaires has been reviewed and that they now include two laryngoscopes, a pedi cap CO2 detector and a UVC kit. Furthermore, a level 5 resuscitative is now kept in the theatre recovery area of the hospital.

111. The Local Health District has informed the court that the NICU now has a single fibre optic laryngoscope that is used for intubations inside the NICU only. They have informed that the fibre optic laryngoscope requires a power source to be plugged in. They are of the opinion that the inclusion of two laryngoscopes on the lower level resuscitaires should reduce the risk that staff will be confronted with the malfunctioning equipment when responding to an emergency.

D. Cause of Everette's Death

112. An autopsy was unable to determine a direct cause of Everett's death. A histopathology biopsy report from the Children's Hospital Westmead referred to multiple risk factors for adverse outcome which may have lowered foetal tolerance to physiological stress. This included maternal history of diabetes, ITP, previous cervical surgery and positive Group B streptococcus carriage plus the presence of an overlong umbilical cord.

113. The pathologist Dr Arbuckle said that at a basic physiological level Everett failed to achieve normal cardiorespiratory transition to life outside the womb but that the more difficult question is why.

114. She is of the opinion that the history of the placenta being incised, the umbilical cord becoming separated in two places and the delay in delivery obviously raised the possibility of foetal haemorrhage, although the only organ described as pale in the autopsy report was the lungs. Doctor Arbuckle noted that this would be an unusual finding if Everett had bled out. Ultimately Dr Arbuckle said that many factors came into play all contributing to severe hypoxia/hypotension.⁵

115. I am satisfied on balance that the most appropriate description for the cause of Everett's death was multifactorial with severe hypoxia/hypotension which occurred in

⁵ Exhibit 1, Tab 43, p. 4.

the background of a high-risk pregnancy, incision of the placenta, transection of the umbilical cord and a delayed delivery.

Conclusion

116. During the inquest there was some doubt as to whether Liverpool Hospital had access to Ms Carleton's medical records from Campbelltown Hospital. The Local Health District has confirmed that patient's records are now available to be transferred via an eMR system. Liverpool Hospital now has access to all records of Campbelltown and Fairfield Hospitals without any need to request a transfer. Furthermore, the records are accessible electronically on the eMR to all clinicians at Liverpool Hospital.
117. During the inquest several of the hospital witnesses commented that at the time of Everett's death there were serious staff shortages within the Obstetrics' Department at Liverpool Hospital. Dr Ahmed informed the court that since 2018 there has been a welcomed change in staffing levels. He said that there was now a Birthing Unit Fellow and a new position of director in the birthing unit and the appointment of a new head of department position.
118. Doctor Ahmed gave evidence that at the time of Everett's death, ward rounds were led by resident medical officers or registrars. He said that now, each morning there was a consultant led ward round by either the head of the department or the birthing unit director.
119. Dr Elias, the Director of Medical Services at Liverpool Hospital gave evidence that this practise of consultant led ward rounds had been implemented throughout the obstetrics and gynaecology department and that all patients on the ward at the time of the morning ward round are seen by a consultant obstetrician.
120. Doctor Elias also gave evidence that two additional accredited training positions had been created predominantly to staff the night shift and to assure that there was more than one registrar available at night. Doctor Elias said that the arrangements for an

on-call consultant within the Obstetrics and Gynaecology Department has also since been split so that there were both a consultant obstetrician and consultant gynaecologist on call.

121. While Ms Carleton was waiting in the anaesthetic bay there was no CTG monitor available to monitor Everett. The Local Health District has now confirmed that CTG monitors are now available to travel with patients from the birthing unit to the anaesthetic bay and into the operating theatre. It is also now the practise of midwives to bring a portable doppler with them from the birthing unit to the anaesthetic bay.
122. Ms Carleton caesarean section was called as a Category 2 emergency caesarean, which required delivery within 60 minutes. At the time this meant that the NICU team responding included a junior neonatal registrar and a midwife with a basic resuscitaire. There has since been a review of the procedures relating to Caesarean sections and their categorisation. Category 2 caesareans have now been split into two categories one which requires birth within 30 minutes and the other requiring birth within 60 minutes.
123. The category that requires birth within 30 minutes requires an admission registered nurse being sent by the NICU in addition to a resident medical officer that is sent for both categories. In addition, a level 5 resuscitaire is now sent to a Category requiring birth within 30 minutes. These changes provide a higher level of staffing and equipment for emergency births required to take place within 30 minutes.
124. All of these changes have been made since the sad death of Everett on 8 August 2018. While they may not have made a difference to the outcome for Everett they were highlighted as deficiencies in the system when an account of the circumstances surrounding Everett's death was made.
125. Hopefully the changes will work towards preventing a similar death in the future.
126. I extend my deepest sympathies to Everett's family.

Findings pursuant to section 81(1) Coroner's Act 2009

The identity of the deceased

The deceased person was Everett Carleton

Date of death

Everett Carleton died on 8 August 2018

Place of death

Everett Carleton died at Liverpool Hospital, NSW

Cause of death

The cause of Everett Carleton's death was multifactorial with severe hypoxia/hypotension which occurred in the background of a high-risk pregnancy, incision of the placenta, transection of the umbilical cord and a delayed delivery.

Manner of death

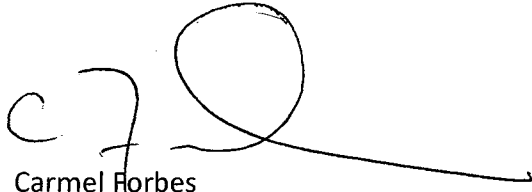
The manner of Everett's death was in hospital at birth after a caesarean section.

Recommendations

To the Director of the South Western Sydney Local Health District

- 1) I recommend that the SWSLHD consider including the measurement of the estimated distance from the leading edge of the placenta to the internal os where relevant to the planning and management of a surgical delivery.

- 2) I recommend that the SWSLHD consider taking steps to ensuring that a supply of O negative blood is readily available for use in theatres in which caesarean sections are performed.

A handwritten signature in black ink, consisting of a stylized 'C' followed by a large loop and a long horizontal stroke extending to the right.

Carmel Forbes
Deputy State Coroner
NSW State Coroner's Court, Lidcombe

Date: 12 April 2024