IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

COR 2022 004833

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

*Section 67 of the **Coroners Act 2008***

Findings of:	Coroner Dimitra Dubrow
Deceased:	Baby W
Date of birth:	23 August 2022
Date of death:	23 August 2022
Cause of death:	1a: subgaleal haematoma and subarachnoid haemorrhage complicating a prolonged labour
Place of death:	Angliss Hospital, 39 Albert Street, Upper Ferntree Gully, Victoria, 3156

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INTRODUCTION

1. On 23 August 2022, Baby W died soon after birth at Angliss Hospital, Eastern Health. Baby W was born at term by emergency caesarean section following a failed instrumental delivery for prolonged labour. He was born in poor condition and received immediate neonatal resuscitation. Unfortunately, Baby W did not respond, and he died at 40 minutes of life.

2. Baby W was the first child of his parents.

3. Baby W's death was reported to the coroner as it fell within the definition of a reportable death in the *Coroners Act 2008* (**the Act**). Reportable deaths include deaths that are unexpected, unnatural or violent or result from accident or injury. In Baby W's case, it was unclear why he was born in poor condition and his death was unexpected.

4. The role of a coroner is to independently investigate reportable deaths to establish, if possible, identity, medical cause of death, and surrounding circumstances. Surrounding circumstances are limited to events which are sufficiently proximate and causally related to the death. The purpose of a coronial investigation is to establish the facts, not to cast blame or determine criminal or civil liability.

5. Under the Act, coroners also have the important functions of helping to prevent deaths and promoting public health and safety and the administration of justice through the making of comments or recommendations in appropriate cases about any matter connected to the death under investigation.

6. I took carriage of this investigation after my appointment to the Court in September 2024 for the purposes of finalising the investigation and making findings.

7. The Court was assisted by the Coroners Prevention Unit (**CPU**) in the review of medical records, statements and other materials provided by the health services involved in Baby W's care.

8. The CPU was established in 2008 to strengthen the coroners' prevention role and assist in formulating recommendations following a death. The CPU is comprised of health professionals and personnel with experience in a range of areas including medicine, nursing, mental health, public health, family violence and other generalist non-clinical matters. The

unit may review the medical care and treatment in cases referred by the coroner, as well as assist with research related to public health and safety.

9. This finding draws on the totality of the coronial investigation into the death of Baby W. Whilst I have reviewed all the material, I will only refer to that which is directly relevant to my findings or necessary for narrative clarity. In the coronial jurisdiction, facts must be established on the balance of probabilities.[1]

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

Circumstances in which the death occurred

Antenatal Care

10. On 17 December 2021, Baby W's mother had her first contact in pregnancy with a GP at her regular clinic, Kilsyth Medical Group.

11. Baby W's mother had a largely uncomplicated pregnancy. She received antenatal care at her GP as well as antenatal reviews with obstetricians and midwives at Angliss Hospital. The pregnancy was considered high-risk because of Baby W's mother's medical history, but this ultimately had no relevance to the circumstances of Baby W's death.

12. On 22 August 2022, at 39 weeks and 1 day gestation, Baby W's mother contacted the hospital with mild contractions and likely rupture of membranes. She was advised to attend the hospital and presented at 12:05pm.

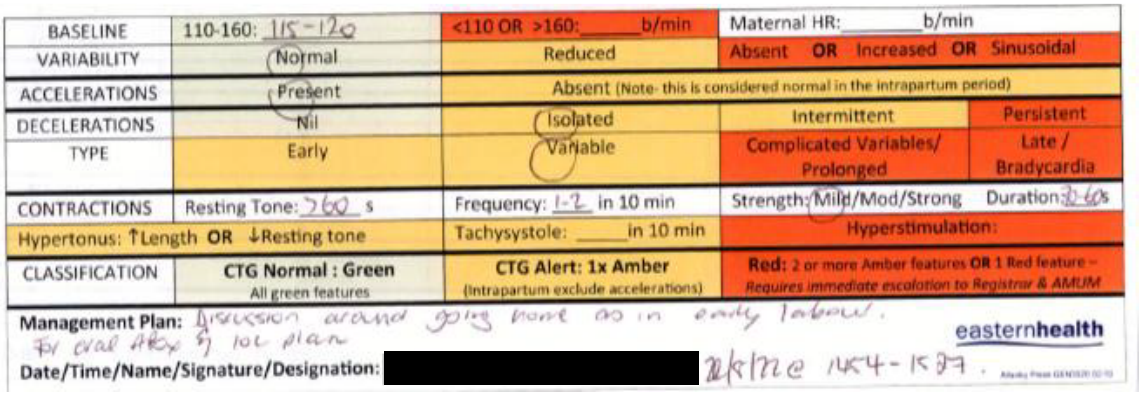
13. A maternity assessment documented 1-2 contractions in 10 minutes lasting less than 30 seconds with clear liquor draining. Baby W's mother's observations were normal, and the fetal heart rate (**FHR**) was also normal at 120-125bpm.[2]

[1] Subject to the principles enunciated in Briginshaw v Briginshaw (1938) 60 CLR 336. The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about, individuals unless the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

[2] A normal fetal heart rate ranges between 110 to 160 beats per minute (bpm).

14. A speculum examination showed the cervix at 1cm dilation and clear liquor.

15. A CTG was performed, and an Eastern Health CTG Label was completed for a half hour period.



BASELINE	110-160: 115-120	<110 OR >160: _____b/min	Maternal HR: _____b/min	
VARIABILITY	Normal	Reduced	Absent OR Increased OR Sinusoidal	
ACCELERATIONS	Present	Absent (Note- this is considered normal in the intrapartum period)		
DECELERATIONS	Nil	Isolated	Intermittent	Persistent
TYPE	Early	Variable	Complicated Variables/ Prolonged	Late / Bradycardia
CONTRACTIONS	Resting Tone: 260 s	Frequency: 1-2 in 10 min	Strength: Mild/Mod/Strong	Duration: 30-60s
Hypertonus: ↑Length OR ↓Resting tone		Tachysystole: _____in 10 min	Hyperstimulation:	
CLASSIFICATION	CTG Normal : Green All green features	CTG Alert: 1x Amber (Intrapartum exclude accelerations)	Red: 2 or more Amber features OR 1 Red feature – Requires immediate escalation to Registrar & AMUM	

Management Plan: Discussion around going home as in early labour. For oral Abx & IOL plan

Date/Time/Name/Signature/Designation: [redacted] 28/12@ 1454-1527

easternhealth

Eastern Health CTG Classification Label

16. CTG, *cardiotocography*, is a method of electronic fetal monitoring (**EFM**) which monitors and records FHR in relation to uterine contractions. The pattern of the CTG *trace* is interpreted by healthcare providers to help assess fetal wellbeing. Health services commonly use CTG labels to help interpret CTG traces. These often provide clear escalation and review pathways for traces with non-reassuring signs.

17. The plan was for Baby W's mother to go home with oral antibiotics and return for a CTG at 10am the next day.

18. However, Baby W's mother's labour had intensified, and she represented at 7:40pm.

Intrapartum Care

19. On review, Baby W's mother's observations were within normal limits, liquor remained clear, and she reported normal fetal movements.

20. At 7:50pm, Baby W's mother requested an epidural for pain relief. A plan was made in consultation with the medical team to gain intravenous access, take bloods, and start intravenous fluid therapy prior to the epidural.

21. At 8:20pm, a vaginal examination was performed as Baby W's mother was complaining of bowel pressure. This showed the cervix to be 7cm dilated, 0.5cm thick, with the presenting part at station -1.

22. For vaginal birth, the cervix must be fully dilated, usually ~10cm, and fully *effaced*, thinned and shortened.

23. *Fetal station* refers to the position of the presenting part, most commonly the head, in relation to the mother's *ischial spines*, a part of the pelvis. It is measured in centimetres from -5 to +5, with -5 indicating the foetus has not engaged with the pelvis, 0 indicating level with the ischial spines, and +5 indicating crowning.

24. At 8:30pm, the intravenous cannula was inserted.

25. At about 8:46pm, continuous CTG monitoring was commenced.

26. At 8:50pm, an anaesthetist was in attendance to site the epidural. However, they did not proceed as the blood results were still pending. A vaginal examination was repeated as Baby W's mother had an urge to push. This showed the cervix to be 8cm dilated, 1cm thick, with the presenting part at the level of the ischial spines (station 0).

27. At 9:00pm, the blood results showed adequate platelet levels to proceed with the epidural. Baby W's mother was using nitrous oxide for pain relief during this time.

28. A CTG label was completed for the period between 8:45-9:15pm. The baseline was 115-120bpm with normal variability and accelerations present. Intermittent variable decelerations were noted. Contractions were documented as moderate to strong, 3 in 10 minutes with >60 seconds resting tone. The CTG is classified as *"CTG Alert: 1x Amber"* with a plan to await epidural and handover to night duty staff.

29. At 9:30pm, the epidural was completed and documented as effective at 10:00pm. An indwelling urinary catheter was also inserted, draining yellow urine.

30. At 9:55pm, FHR was documented as 100-105 bpm and further vaginal examination was performed to apply a fetal scalp electrode (**FSE**).[3] The examination findings were noted to be unchanged, with the fetal position unable to be determined but felt to be occipito-transverse (**OT**) on abdominal palpation.

31. The fetal *position* refers to where a foetus' *occiput*, the lower part of the back of the head, is in relation to the mother's body. OT position means that the foetus is facing sideways. Position will often change as labour progresses, with the ideal position thought to be occipito-anterior (**OA**), foetus facing the spine. Other positions can be associated with prolonged labour and may need assisted vaginal birth or other alternative birth options.

32. A CTG classification label was completed for the period between 9:15-10:15pm and classified as *"CTG Alert: 1xAmber"* with a plan to continue the CTG and intravenous fluid therapy.

33. Between 10:28pm and 10:40pm, there was a prolonged fetal deceleration lasting 4 minutes which was not relieved by a maternal position change.

34. Decelerations are transient deceases of the FHR below the baseline lasting at least 15 seconds. Different patterns of decelerations are described and suggest varying fetal wellbeing. Prolonged decelerations may be associated with significant fetal compromise and require further action.[4]

35. An intravenous fluid bolus was administered, and the FHR recovered to a baseline of 110-115bpm.

36. A CTG classification label for the period between 10:15-11:15pm documented a baseline of 110-115bpm, maternal heart rate of 93bpm, periods of reduced as well as normal variability, and the presence of accelerations. Intermittent variable decelerations were also noted. Contractions were 4 in 10 minutes of moderate intensity, lasting 60 seconds with >60 second resting tone.

[3] A small device inserted into a baby's scalp to monitor heart rate during labour. It is commonly used when external monitoring is unreliable and is a form of EFM.
[4] RANZCOG Clinical Guideline Intrapartum Surveillance.

37. The CTG is classified as *"CTG Alert: 1x Amber"*. The periods of reduced variability are documented as being *"sleep phase"* and the plan was documented to continue CTG and intravenous therapy.

38. At 12:20am on 23 August 2022, Baby W's mother requested a further vaginal examination as she was feeling increasing vaginal and bowel pressure. The examination found a thin anterior cervical lip with the presenting part at the level of the ischial spines. A cervical lip is a portion of the cervix in the way of the presenting part.

39. At this time, it is documented Baby W's mother was comfortable with an effective epidural, liquor was clear, and the indwelling catheter draining clear urine.

40. A CTG classification label for the period between 11:15pm-12:15am documented a maternal heart rate of 100bpm, FHR baseline of 110-115bpm, periods of normal and reduced variability with accelerations. Intermittent decelerations were documented with two prolonged decelerations. Contractions were documented as moderate, 4 in 10 minutes, and lasting 60 seconds with >60 seconds resting tone.

41. The CTG is classified as *"Red: 2 or more Amber features OR 1 red feature – Requires immediate escalation to Registrar and AMUM."* It is documented that the CTG was reviewed by the registrar and Associate Midwife Unit Manager (**AMUM**), with a plan to continue CTG and intravenous therapy.

42. At 1:25am, the antibiotic clindamycin was administered for prolonged rupture of membranes.

43. Various entries at this time documented Baby W's mother's progress and discussion with the registrar, who was in the room. A plan was made to re-assess at 4am unless indicated earlier.

44. A retrospective note from a midwife documented that they asked the registrar to perform the next vaginal examination as the fetal position could not be determined. An abdominal palpation is documented, noting the position to be right OT with 1/5th of the fetal head palpable abdominally.

45. Fetal station can also be assessed in a different way by abdominal palpation. Practitioners assess by fifths how much of the fetal head can be felt through the abdomen and above the

pelvic brim. 5/5 means the entire head is above the inlet of the pelvic through to 1/5 when only a small portion of the fetal head can be felt above the pelvic brim.

46. CTG classification labels were completed hourly between 12:15am to 3:15am. The CTGs were classified *"CTG Alert: 1x Amber"* owing to the continued presence of intermittent variable decelerations. The registrar review is noted on the 1:15am to 2:15am label with an ongoing plan to continue labouring. The following label noted a further review by the registrar which documented a vaginal examination showing a fully dilated, fully effaced cervix and presenting part at station +1.

47. At 3:20am, the registrar documents their review. This noted the CTG features and described a vaginal examination as: *"very thin rim anteriorly - pushed off - confirmed - fully dilated/station +1 liquor clear".*

48. The plan was to allow passive descent for 1 hour, to start pushing at 4:20am, monitor CTG & liquor, continue with intravenous antibiotics, and to notify the registrar if concerned.

49. A CTG classification label is complete for the period between 3:15-4:15am. It is classified as *"CTG Alert: 1x Amber"* because of the presence of an isolated variable decelerations.

50. At 4:29am, Baby W's mother started actively pushing. A final CTG label is completed for period between 4:15-5:15am. It is classified as *"CTG Alert: 1x Amber"* and documented the time active pushing commenced. It also documented that the registrar was present in the room at 5am to check on progress.

51. A retrospective note from a midwife noted that Baby W's mother was woken to commence active pushing, her epidural was working well, and that she was *"positioned into semi-recumbent, legs parted, instructed how to push"*.

52. Another midwife documented *"slowish but adequate progress"* and described the CTG during the second stage as *"abnormal but very reassuring with normal variability, pre + post shouldering, + some accelerations."*

53. The AMUM documented discussions with the registrar at approximately 6:30am regarding Baby W's mother's progress. It was noted that although Baby W's mother had been actively

pushing for 2 hours, as the CTG was reassuring, and Baby W's mother was pushing effectively with more head on view, and agreed with the registrar's plan that more time could be allowed.

Assisted Vaginal Birth – Medical Account

54. The medical records contain both contemporaneous and retrospective entries which document the assisted vaginal birth.

55. The Eastern Health Assisted Vaginal Birth Record recorded the indication as *"prolonged 2nd stage"*.

56. At 9:30am (after Baby W's birth), the registrar made a retrospective entry in the medical record outlining their involvement in Baby W's mother's care.

57. This documented that at 5:35am, after about an hour of pushing, the epidural was working well, the CTG had a baseline of 130bpm with accelerations present and some variable decelerations, and there were 4 moderate contractions in every 10 minutes. The fetal head was not palpable abdominally, and Baby W's mother's vital signs were stable. The indwelling catheter draining clear urine, and the plan was to continue pushing.

58. The entry also noted a review at 5:55am. This noted that Baby W's mother was pushing effectively, and vaginal examination showed a fully dilated cervix with the presenting part at station +1, descending to +2 with pushing. No specific plan is documented until the consultant was called at about 6:15am.

59. The registrar outlined the call to the consultant as informing her of all clinical findings, including the last vaginal examination. A plan to continue pushing for another 10-15 minutes was made, and for the registrar to perform an instrumental vaginal birth after that time.

60. The registrar documented that the consultant was happy for her to go ahead with an assisted vaginal birth with the proviso that the *"station as +1 to +2 & the CTG was [apparently] reassuring except some variables"*.

61. In a later statement to the Court, the registrar described that she was a consultant obstetrician overseas prior to coming to Australia in 2018. In that time and as a consultant, she had performed many unassisted instrumental deliveries. However, she was not accredited at

Eastern Health to independently perform instrumental deliveries and held an unaccredited second year registrar position.

62. Registrars are doctors who are training in a specific area of medicine to become consultants, often known colloquially as *"specialists"*. Training is offered through the relevant college, in this case, the Royal Australia and New Zealand College of Obstetricians and Gynaecologists (**RANZCOG**). Training is provided *"on-the-job"* in hospitals and is taught and supervised by consultants and other senior clinicians within the unit.

63. Unaccredited registrars hold the same role and clinical responsibilities as accredited registrars in the same position. The difference is that unaccredited registrars are yet to enrol or be accepted into the relevant college.

64. The consultant stated that they were aware that the registrar was not accredited to perform instrumental births. However, they stated that, given the registrar's confidence with the assessment, the consultant agreed to allow the registrar to proceed independently.

65. The consultant also noted the following about this conversation:
    a) The patient was pushing for 2 hours in need of instrumental delivery
    b) 2nd stage CTG showed reassuring features
    c) Position was OA, head visible on parting, station +1.

66. The consultant also stated that, in hindsight, they *"should have gently reassured [the registrar] that I am happy for her to perform the procedure but I would come in to offer further 'support'"*. The consultant also described the *"relief"* that *"since this incident, Eastern health has made it very clear to all levels of staff that unaccredited doctors cannot perform any procedure unsupervised with no exceptions."* This has been the consultant's practice since.

67. The registrar documented being called back to the room at about 6:25am because of a fetal heart rate deceleration which was slow to recover. They documented discussing an instrumental vaginal birth with Baby W's mother and the associated risks before gaining verbal consent.

68. The pre-procedure assessment documented a fully dilated cervix, station +2, caput +1, 0 moulding, and clear liquor. There is no documentation of the fetal position.

69. Caput and moulding refer to changes in the fetal scalp from the pressures of the birth canal. They can sometimes disguise the true position and station of the fetal head.

70. The registrar initially attempted a vacuum-assisted delivery. The vacuum cup was applied between contractions with suction applied after checking that there was no maternal tissue caught in the cup.

71. The registrar described four pulls with descent of the fetal head and cutting an *episiotomy* with the fourth pull. An episiotomy is a small incision to the perineum to enlarge the vaginal opening. The cup detached with second and fifth pull, and the registrar decided not to re-apply after the second detachment and converted to a forceps birth.

72. On initial application, the forceps could not be locked, and the blades were removed. Similarly, on second application, the forceps blades could not be locked and were once again removed. The registrar documented at each attempt that the forceps were not pulled but that Baby W's mother was contracting.

73. No further attempt at instrumental birth was made. The registrar documented *"some descent with pushes, head on view with caput retracting back sometimes"*.

74. The retrospective note concluded with the decision to call a Code Green Caesarean Section and that the FHR was going down to 80bpm with contractions before returning to 130bpm in between contractions.

75. A senior registrar was in the hospital for teaching when the Code Green was called. In a retrospective note at 11am, they document that they were handed forceps upon entry at about 7:40am. A vaginal examination showed fully dilated cervix, station +2, caput +3, moulding +2, and position as direct occipito-posterior (**DOP**).

76. The senior registrar noted that Baby W's mother and Mitchell were requesting a caesarean birth, declining further attempts at instrumental birth. The decision was therefore made to transfer to the operating theatre to complete the birth with appropriate analgesia, noting the consultant was already en-route.

Assisted Vaginal Birth – Midwifery Account

77. Retrospective midwifery documentation provided additional context to the medical record and the registrar's retrospective notes.

78. In a retrospective entry on 23 August 2022 at 9:35am, a midwife documented the following:

79. At 7:15am, the midwife demonstrated to the registrar how to lock the forceps, as while preparing to apply them, the registrar was unable to lock them. Subsequently, during the first application, the midwife documented that the blades could not be locked, but despite this traction was applied. The midwife documented advising traction should not be applied without the blades being locked.

80. At 7:18am, the midwife checked the consultant's estimated arrival time and noted this to be in 10 minutes.

81. During the second application of the forceps, the midwife documented further difficulties locking the forceps, and further traction being applied by the registrar without the blades being locked with recommendations to stop.

82. At 7:21am, one blade of the forceps was removed with Baby W's mother continuing to push and traction applied by the registrar to the remaining blade. It is documented that an AMUM requested the registrar to stop, and the blade was removed.

83. At 7:34am, the consultant had not yet arrived.

84. At 7:35am, a Code Green was called and noted that the team would meet the consultant in theatre.

85. At 7:36am, the senior registrar's arrival is documented.

86. At 7:41am, a midwife documented removing the CTG for transfer to the operating theatre.

87. At 11am, an AMUM made a retrospective entry. This noted leaving Baby W's mother's birth room at 6:40am following the discussions around proceeding with an instrumental vaginal

birth to fetch the instrumental birth trolley. The AMUM also notified the on-call paediatrician to attend.

88. The AMUM documented that on return to the room, five vacuum pulls had occurred with forceps now being attempted. The AMUM asked to the registrar to not proceed with a forceps birth and advised that consultant on-call would be called.

89. At 7:20am, the on-call consultant was called and asked to attend urgently for an unsuccessful instrumental birth.

90. Between this call and the Code Green, a midwife documented that Baby W's mother was pushing effectively with no instruments used. There was good descent of the fetal head, and they believed birth to be imminent.

91. However, despite effective maternal effort, when there was no further progress the midwife documented being concerned a shoulder dystocia[5] would occur. Various position changes were applied to assist in a possible dystocia.

Emergency Caesarean

92. On 23 August 2022 at 7:45am, Baby W's mother arrived in the operating theatre. The consultant was present at this time.

93. At 7:47am, it is documented that there were difficulties locating the fetal heart from arrival until the caesarean section started.

94. At 7:49am, the consultant, in consultation with Baby W's mother, decided to perform a Caesarean Section. This commenced at 7:55am following a top-up of the epidural.

95. The caesarean was performed by the consultant, with the senior registrar and registrar assisting. The registrar inserted a *fetal pillow* prior to skin incision. Fetal pillows are used to elevate the fetal head to facilitate birth by caesarean section as the fetal head can become deeply impacted during an attempted vaginal birth.

[5] Impaction of the fetal shoulder requiring particular obstetric manoeuvres to deliver the baby after delivery of the head.

96. The operative findings documented that no fetal head was palpable abdominally and confirmed the previous vaginal examination findings of the senior registrar (fully dilated, station +1 to +2, DOP, 3+ caput, 2+ moulding).

97. The operation report also noted that the consultant confirmed with Baby W's mother that she declined any further assessment for an instrumental birth and wished to proceed with a caesarean birth. The consultant disclosed the risks and difficulties with a caesarean birth at full cervical dilation.

98. The surgery was relatively straightforward with an estimate blood loss of 300mL. The episiotomy was also repaired at this time.

99. At 8:01am, Baby W was born.

100. Baby W attempted to cry at birth with some coughs. He was transferred to the neonatal resuscitaire, where Continuous Positive Airway Pressure (**CPAP**) ventilation was commenced.

101. At 8:02am, a neonatal code blue was called.

Neonatal Resuscitation

102. Baby W was born in poor condition, weighing 2950g, with a heart rate <60 bpm and APGAR scores of 1 at 1 minute and 0 at 5 minutes of age.

103. The APGAR score standardises the way healthcare professionals evaluate a baby's physical wellbeing at birth and how well each baby makes the physical transition from the intrauterine to extrauterine environment. The score uses five physical signs and is scored when the baby is 1 minute old and again when they are 5 minutes old. It ranges from 0 to 10, with a lower score indicating poorer outcomes. The maximum score is usually 9, since almost all newborns lose 1 point for blue hands and feet, a normal appearance after birth.

104. The Code Blue had multidisciplinary attendance and input for advanced neonatal life support.

105. External cardiac massage was commenced and Intermittent Positive Pressure Ventilation (**IPPV**) with 100% oxygen was provided using facemask, laryngeal mask, and endotracheal intubation.

106. Vascular access was achieved using both intraosseous and umbilical venous routes. Several intraosseous fluid boluses were administered.

107. Adrenaline was administered using endotracheal and intraosseous routes.

108. At 8:08am, an umbilical cord lactate was taken and showed arterial lactate of 6.1mmol/L and venous lactate of 4.9mmol/L.

109. At 8:14am, the Paediatric Infant Perinatal Emergency Retrieval service (**PIPER**) was contacted. PIPER provided telephone advice throughout the resuscitation.

110. At 8:40am, there was no detectable heartbeat. The decision was made to cease resuscitation.

111. At 8:41am, Baby W was declared deceased.

Identity of the deceased

112. On 23 August 2022, Baby W, born 23 August 2022, was visually identified by his mother, who completed a statement of identification.

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

Medical cause of death

114. Forensic Pathologist Dr Sarah Parsons from the Victorian Institute of Forensic Medicine (**VIFM**) conducted an autopsy on 26 August 2022 and provided a written report of the findings. The placenta was examined by Dr Fiona Chan from The Royal Children's Hospital Laboratory Services.

115. The autopsy showed subgaleal haematoma and subarachnoid haemorrhage. Dr Parsons explained that subgaleal haematoma is where there is haemorrhage within the potential space between the scalp and the skull. In this case, the haematoma was large and was likely to have contributed to the death.

116. Dr Parsons explained that this condition can occur after difficult vaginal delivery, particularly if there has been a vacuum extractor used. A subgaleal haematoma can be life-threatening as babies can lose 20-40% of their blood volume. The reported mortality is 12-14%.

117. Meconium was identified in the lungs. This is in keeping with meconium aspiration during labour and birthing process.

118. Examination of the placenta did not show a reason which could account for Baby W's poor condition at birth.

119. Dr Parsons provided an opinion that the medical cause of death was *1(a) subgaleal haematoma and subarachnoid haemorrhage complicating a prolonged labour.*

120. I accept Dr Parsons' opinion.

REVIEW OF CARE

121. The CPU, Eastern Health, and an external obstetrician engaged by the Court to provide an expert opinion all reviewed the circumstances of this case. In statements provided to the Court, many clinicians also reflected on the case and outlined subsequent changes to practice.

Eastern Health Review

122. Eastern Health reported the death to Safer Care Victoria (**SCV**) as a sentinel event.

123. In Victoria, sentinel events are defined as an *"unexpected and adverse event that occurs infrequently in a health service and results in the death of, or serious physical or psychological injury to, a patient as a result of system and process deficiencies at the health service entity"*.[6]

[6] *Health Services (Quality and Safety) Regulations 2020*, r 3A.

124. Health services are required to report sentinel events to SCV.[7] This includes completing a Root Cause Analysis (**RCA**) or similar investigation to determine, among other things, what went wrong and how changes can be made to healthcare systems to prevent similar incidents occurring in the future.

125. Health services are then required to provide period updates on the progress of any recommendations or changes to practice identified in these reviews.

126. The RCA was completed by a review panel which included an obstetrician external to Eastern Health. Baby W's family elected not to contribute to the review and requested to be kept informed of the review outcome.

127. The review panel made two findings and two recommendations. These were primarily concerning clinician scope of practice with a small note about circumstances contributing to possible further delays.

Scope of Practice

128. The review panel noted the registrar was not credentialed for instrumental birth. Given the scope of practice of the registrar, the review panel considered that the consultant was required to be onsite to supervise the vacuum extraction.

129. The review panel found that the process to communicate scope relies on individual clinicians and is inconsistently utilised. Further, there was a lack of robust governance related to registrar supervision which resulted in decision making which contributed to the prolonged second stage and fetal asphyxia.

130. The review panel recommended that all consultants be aware of all the registrars' current clinical capabilities and the responses required for outside of hours depending on individual capability.

131. To achieve this, the executive clinical director was to review all rosters and directly communicate:

[7] *Health Services (Health Service Establishments) Regulations 2024*, r 66; Determinations by the Secretary 31 August 2024, 8-10

a) The level of registrar credentialing.

b) The expectations of consultant presence, handover procedure and response at all times.

c) Formal communication from the executive level to all medical staff outlining recent adverse events and provide directives regarding the access of the credentialing register and actions for supervision.

132. The second recommendation was to revisit measures in place in efforts to build and maintain a highly skilled workforce.

133. This included re-advertising for medical workforce increase and appointment of medical workforce supervisors to support development.

134. At the six-month review, both recommendations had been completed. It was noted that, in retrospect, it would have been useful to have the level of credentialing also visible on the roster or handover.

135. It was also noted that Eastern Health are undertaking a review of the medical workforce model, including leadership development. This will be embedded in the portfolios of senior staff scope to facilitate dedication to development of junior and senior staff alike.

Delay in theatre

136. The review panel's second finding was that attempts to consent for an additional trial of instrumental birth for deeply impacted head also contributed to some delay in theatre. The panel did not comment further on this finding nor make any recommendations.

Expert Opinion Report

137. Dr Andrew Woods, obstetrician, provided an expert opinion report. Dr Woods reviewed the e-Medical Deposition[8], the Forensic Pathologist's report, medical records and statements of clinicians from Eastern Health, the Eastern Health RCA Report, and antenatal medical records from Baby W's mother's GP.

[8] The Hospital's initial summary notifying the Coroners Court of the death.

Antenatal and early labour management was appropriate

138. Dr Woods considered that Baby W's mother received antenatal care of the expected standard with any identified risks addressed through an appropriate model of care.

139. Similarly, when Baby W's mother presented with Pre-labour Rupture of Membranes (**PROM**) at term, the care she received was of the appropriate standard. Comprehensive multidisciplinary maternal and fetal assessments were undertaken, and care plans agreed utilising the principles of informed decision-making.

140. On returning in labour, the multidisciplinary clinical and supportive care Baby W's mother received through the first and second stages was again of the appropriate standard with the necessary maternal and fetal observations and assessments undertaken.

141. Dr Woods described the CTG as most likely indicating a well oxygenated foetus with good physiological reserve exhibiting normal compensatory heart rate responses to the stress of labour, including cord compression. The CTG classification and escalation of non-reassuring features was also of an appropriate and expected standard.

Significant fetal compromise did not occur until after 7am

142. Dr Woods did not consider that there was evidence of fetal distress prior to removal of the FSE at 6:59am. As such, and considering Baby W's poor condition at birth, Dr Woods opined that significant fetal distress developed at some time between 7am and birth.

143. Dr Woods outlined two factors which likely contributed to *in utero* compromise accounting for Baby W's birth condition.

144. Firstly, the subgaleal haematoma most likely started to develop following the attempted vacuum birth. The rapidly developing hypovolaemia associated with the condition is likely to have contributed to Baby W's condition at birth.

145. Dr Woods acknowledged that these complications can occur with any birth and, further, have a higher incidence in more complicated births such as Baby W's.

146. He noted that the RANZCOG Clinical Guidance Statement: Prevention, detection, and management of subgaleal haemorrhage in the newborn (C-Obs 28) refers to the increased incidence of subgaleal haematoma with vacuum assisted birth. Dr Woods also noted that there is an increased risk of intracranial haemorrhage, including intradural and subarachnoid haemorrhage, where there has been sequential use of instruments in assisted vaginal birth and unsuccessful vaginal birth requiring birth by caesarean section.

147. Dr Woods expressed the view that even though Baby W's mother would still most likely have required a potentially complicated caesarean birth at full dilatation, had Baby W's birth been managed differently he would, on balance of probabilities, have avoided some or all the complications with a very different ultimate outcome.

148. Secondly, Dr Woods considered the persistent cord compression would likely have increased during the attempted assisted birth, progressing to cord occlusion. Baby W would have experienced either acute or sub-acute hypoxia as a result.

149. Dr Woods also provided an opinion that the cord lactate results were not reflective of Baby W's condition at birth. He explained that it was *"likely the cord samples were taken from a piece of occluded cord and reflected Baby W's acid-base balance at the time of occlusion rather than at birth."* The actual lactate at birth would have been much higher which would have been more consistent with Baby W's actual condition.

Missed opportunities to consider risk of failed assisted vaginal birth

150. Dr Woods provided an opinion that until the decision was made to perform an assisted vaginal birth at 6:42am, *"there was no indication to deliver Baby W sooner."* The management of prolonged second stage was also appropriate until this point.

151. However, Dr Woods highlighted that more than 6 hours had elapsed from the time Baby W's mother had an anterior cervical lip at 12:20am to the decision to proceed with an assisted vaginal birth.

152. Dr Woods acknowledged that although this timeframe may not have fallen within the definition of prolonged labour, the labour progressed slower than he would have expected; *"[r]ecognition and consideration of this would most likely have helped inform subsequent decision making around place and mode of birth and the likely success of an assisted vaginal birth."*

153. With reference to the relevant RANZCOG Guidelines, Dr Woods outlined a key factor which was not documented in this case: the position of the fetal head. The Guidelines state that the exact position of the fetal head is a prerequisite for instrumental vaginal birth. In Dr Woods' opinion, the exact position of the fetal head was never established prior to attempting the assisted vaginal birth; the concern regarding OP position was only raised following the senior registrar's review.

154. Dr Woods noted that the consultant stated being told the fetal head was in an OA position at station +1 with the head visible on labial parting. On review of the medical records and the registrar's statement, there was no corroborating documentation to confirm this and the records are silent as to the position of the fetal head at that time.

155. Further, the medical records and the registrar's statement document the station to be +2, and not +1. This is significant as RANZCOG recommends *"[a] senior obstetrician competent in performing mid-cavity* [i.e. station +1] *births should be present if a clinician inexperienced as a solo operator is perform ing the birth."*

156. Regardless of the station being +1 or +2, Dr Woods felt that it was likely that the various mentions of the fetal head visible on labial parting was *caput succedaneum*, swelling of the scalp from pressure on the head as baby descends, rather than the fetal head itself.

157. Considered together—the relatively slow progress, likely caput, and unconfirmed fetal position—there was an opportunity for the registrar to recognise the increased likelihood of a complicated assisted vaginal birth and to involve the consultant.

158. Dr Woods also considered that there appeared to *"have been enough information given, in particular the mid-cavity station, to prompt further questioning around the likelihood that any assisted vaginal birth would be complex"* by the consultant.

159. Overall, there was a missed opportunity for both the registrar and the consultant to identify factors which may have prompted the decision not to proceed with assisted vaginal birth and discuss alternative birth options.

160. Further, there appeared to have been a lack of awareness by midwifery staff that the registrar was not credentialled to perform an assisted vaginal birth unsupervised. Knowing this, they may have independently requested the consultant to attend, assess, and assist with the decision making around appropriate birth options.

161. Similarly, when the attempted assisted vaginal birth was not progressing as expected, there also appeared to be a lack of midwifery knowledge on how to further address or escalate their concerns.

Ultrasound a possible tool to assist in confirming fetal position

162. Dr Woods was specifically asked about the use of ultrasound.

163. Dr Woods drew attention to the International Society of Ultrasound in Obstetrics and Gynaecology (**ISUOG**) Practice Guideline: Intrapartum Ultrasound which provides clinical guidance on the use of ultrasound to support usual clinical examination. This includes determining fetal position.

164. The ISUOG report error rates in assessing fetal position by vaginal examination alone as being between 20-70%. They further note that various studies have shown the superiority of ultrasound either used alone or in combination with clinical examination to determine fetal position.

165. ISUOG identified two areas where ultrasound could be employed as an adjunct to clinical care; where there is suspected delay in the first or second stages of labour, and to support clinical examination around suitability for assisted vaginal birth.

166. Dr Woods referred to other published literature which notes that when ultrasound is used to support assessment of fetal position, the incidence of failed assisted vaginal birth falls from 20% to just 1.6%.

167. Dr Woods further noted that international guidelines on assisted vaginal birth now include recommendations around the use of ultrasound to support clinical assessment.

168. RANZCOG notes as part of their pre-requisites for instrumental vaginal birth that *"ultrasound may be helpful in determining the position of the vertex."*

169. The Royal College of Obstetricians and Gynaecologists (**RCOG**)[9] Assisted Vaginal Birth guideline[10] recommends "*ultrasound assessment of the fetal head position prior to assisted vaginal birth…where uncertainty exists following clinical examination."* However, the guideline also states that *"[t]here is insufficient evidence to recommend the routine use of abdominal or perineal ultrasound for assessment of the station, flexion and descent of the fetal head in the second stage of labour."*

170. Dr Woods noted that many birthing units have bedside ultrasound access and have incorporated the use of this to assess fetal position, especially if uncertainty exists following clinical examination as part of local guidance on assisted vaginal birth.

171. However, this is limited by capability to train and credential all medical staff in the use of ultrasound to support assessment of fetal position prior to assisted vaginal birth.

172. Had ultrasound been available and used in this case it is likely that the occiptio-posterior position would have been identified, the likelihood of a more complicated assisted vaginal birth recognised and rather than proceeding with an assisted vaginal birth alternative birth options could have been discussed.

Comments on the Eastern Health Review

173. Dr Woods considered that the review panel's findings and recommendations were appropriate outcomes. The Dr Woods added the review did not appear to have considered remote viewing of CTG, and that this could be a further area to explore. However, it is to be noted that since the review and in response the Court's enquiry, Eastern Health has advised that remoted viewing of CTG was expected to be introduced by September 2023.

[9] The UK equivalent of RANZCOG.

[10] Available at <https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/assisted-vaginal-birth-green-top-guideline-no-26/>.

174. Dr Woods added that further possible consideration could have been given to issues regarding safety culture, speaking up for safety, and escalation processes. This may include assessment of the *"wider human factors and workplace culture in relation to team performance and the events of the case"*.

175. Dr Woods highlighted that the retrospective midwifery entries initially agree with the plan to proceed to an assisted vaginal birth but then appear to have diverged when it was not as straightforward as expected. The midwives' stated recommendations to stop were either not heard or ignored.

176. Further, it did not appear that their concerns were escalated further, and Dr Woods recommended further actions to support staff escalation.

177. Overall, Dr Woods agreed with the report findings, conclusions, and recommendations.

178. In conclusion, Dr Woods stated that:

> *"[T]here may be state-wide safety culture learnings appropriate to junior medical officer credentialing and the expectations around consultant supervision and attendance.*
>
> *I would expect all maternity services should have clear and transparent credentialling of junior medical staff and expectations around supervision and attendance of consultant staff. These should be available across all craft groups.*
>
> *I also consider all staff should understand and be empowered to utilise the necessary escalation processes should a junior medical officer act outside their credentialled scope, or senior medical officer not fulfil agreed expectations.*
>
> *As junior medical staff rotate regularly between facilities and across Health Districts I believe there should also be an ability for any local credentialling to follow the junior medical officer to support their professional development and for new supervisors and wider teams to understand their capabilities and learning needs."*

CPU review and neonatal resuscitation

179. The CPU additionally identified areas of improvement with the documentation of the neonatal resuscitation. They noted that it was difficult to piece together the exact timing of events, and it remains unknown the exact dosage of adrenaline administered.

180. Eastern Health provided a statement highlighting the differences in doses depending on whether adrenalin was administered intravenously or through an endotracheal tube. Identification of this difference provides an opportunity for guidance documents to be reviewed and revised to address appropriate adrenalin doses depending on the manner of administration. It is, however, acknowledged that resuscitation usually occurs in urgent and stressful scenarios and in so far as this case is concerned, the CPU expressed the view that given the severity of Baby W's injuries at birth, Baby W may not have survived regardless of the resuscitation measures.

FINDINGS AND CONCLUSION

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

    a) the identity of the deceased was Baby W, born 23 August 2022;

    b) the death occurred on 23 August 2022 at Angliss Hospital, 39 Albert Street, Upper Ferntree Gully, Victoria, 3156, from *subgaleal haematoma and subarachnoid haemorrhage complicating a prolonged labour.*

    c) the death occurred in the circumstances described above.

182. I am satisfied that the fatal injuries suffered by Baby W would likely have been avoided had the factors identified by Dr Woods as flagging the potential for a complex assisted vaginal delivery been appreciated and considered as part of the decision making around delivery and birth options. I find that these factors, including the station and position of the fetal head, the presence of caput succedaneum impacting the finding as to the station and slow labour progress should have been appreciated by those managing Baby W's mother's labour and the delivery of Baby W.

183. In doing so, I acknowledge that the birth options would have included proceeding to immediate caesarean section or caesarean section only after an initial attempt at assisted vaginal delivery, such that the known risks associated with such delivery remained present, particularly an emergency caesarean section at full dilation. Nonetheless, I am satisfied that had the birth been managed differently, on balance, as stated by Dr Woods, some or all of the complications would have been avoided with a different outcome.

COMMENTS

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

1. It is clear that the position of the fetal head was not positively identified, which in turn impacted the discussion regarding the birth plan between the registrar and the consultant. This is notwithstanding the relevant RANZCOG guidelines requiring that the position be established and the Eastern Health Instrumental Vaginal Birth guideline providing that a pre-requisite for instrumental vaginal birth was to "ensure the fetal position is known and consider the use of USS to confirm this prior to commencing instrumental birth". Furthermore, the pro forma Assisted Vaginal Birth Record contained in the Eastern Health medical records includes a table titled *Pre Instrumental Birth Assessment*. Vaginal examination findings recorded in the table are to include position and station of the head and caput and moulding. This table was left blank.

2. The discrepancy in the information as to the position of the fetal head is concerning, namely the positive statement by the consultant that they were advised by the registrar that the position was occipito-anterior as against the absence of any reference by the registrar in the records to the position and the subsequent examination finding by the senior registrar and at caesarean section of an occipito posterior position.

3. While in the circumstances of this case, the presence of the consultant was necessitated by virtue of the credentialling of the registrar alone, it is concerning that information about the position of the head was not documented, leading to the conclusion that it did not form part in the registrar's decision making and assessment of risk as to instrumental vaginal delivery.

4. As noted by Dr Woods, occipito-posterior position is one of four matters listed in the RANZCOG guidelines as being associated with higher rates of failure of instrumental vaginal delivery. The guidelines go on to say, "When a higher risk of failure is suspected, instrumental vaginal delivery should be attempted in a setting where immediate recourse to caesarean section is available". This did not occur in this case.

5. Had the position of the head been known, not only would this have ensured the presence of the consultant, but consideration as to rotation with or without instruments may have been given or there would have more suitable placement of the vacuum cup, taking into account the position. There may also have been a lower threshold for converting to caesarean section and as noted above, instrumental delivery may have taken place in theatre or indeed not proceeded with at all.

6. Indeed, it was acknowledged by the Hospital that *"…it seems clear that the registrar failed to diagnose the OP presentation which was directly responsible for the failed instrumental delivery"*.

7. It is not possible to reconcile the midwifery notes in relation to traction being applied notwithstanding the forceps not being locked and the registrar's comments that the forceps were not pulled and the movement perceived as applying traction instead being passive descent. However, what this discrepancy and other aspects of the management and communication during this labour and delivery highlight is the need for actions to support staff escalation of issues as noted by Dr Woods.

8. The consultant acknowledged that they were advised by the registrar that they were unaccredited. It is unclear whether the consultant was aware at that time that this meant that the registrar required supervision in the performance of an instrumental delivery. The consultant noted that they had worked together for six months and found the registrar to be competent. However, another aspect of building a safety-culture is ensuring there is no doubt as to the extent of the scope of practice of practitioners, including non-credentialed registrars. This would protect against a potential dynamic arising where a consultant wishes to show they have faith in a registrar's ability and a registrar wishes to demonstrate their ability to undertake a delivery and not inconvenience or place undue demands on the consultant.

9. It is acknowledged that Eastern Health has made a number of changes since these events including around communication, expectation and governance around registrar credentialing and supervision.

10. Eastern Health also referred to a new Safety Bundle for assisted vaginal delivery being trialled at Monash Health which includes a "team time out" prior to assisted delivery taking place and a formal checklist to improve communication as measures to adopt if the trial is found to be effective.

11. I do not otherwise consider that any specific recommendations are required as matters around building a safety culture and of escalating concerns require overall organisational, structural and leadership responses across all health services. This case serves as an important reminder of how critical building and maintaining a safety culture is. To contribute to potential state-wide and broader learnings, a copy of this finding will be distributed to Safer Care Victoria and RANZCOG. A de-identified copy will also be published on the Court's website.

12. I convey my sincere condolences to Baby W's family for their loss.

I direct that a copy of this finding be provided to the following:

Baby W's parents
Eastern Health
Kilsyth Medical Group
CCOPMM
Safer Care Victoria
RANZCOG

Pursuant to section 73(1A) of the Act, I order that a de-identified finding be published on the Court's website in accordance with the rules.

Signature:

Coroner Dimitra Dubrow

Date: 13 May 2025

NOTE: Under section 83 of the ***Coroners Act 2008*** ('the Act'), a person with sufficient interest in an investigation may appeal to the Trial Division of the Supreme Court against the findings of a coroner in respect of a death after an investigation. An appeal must be made within 6 months after the day on which the determination is made, unless the Supreme Court grants leave to appeal out of time under section 86 of the Act.