MAGISTRATES COURT *of* TASMANIA

CORONIAL DIVISION

# Record of Investigation into Death (Without Inquest)

*Coroners Act* 1995
*Coroners Rules* 2006
*Rule* 11

**(These findings have been de-identified in relation to the name of the deceased, family, friends, and others by direction of the Coroner pursuant to s57(1)(c) of the Coroners Act 1995)**

I, Simon Cooper, Coroner, having investigated the death of LD

**Find, pursuant to Section 28(1) of the *Coroners Act* 1995, that**

a) The identity of the deceased is LD;

b) LD died in the circumstances set out further in this finding;

c) The cause of LD's cause of death was intrapartum asphyxia refractory to postpartum resuscitation; and

d) LD died, an hour after her birth, on 26 January 2022 at the Royal Hobart Hospital, Hobart, Tasmania.

In making the above findings I have had regard to the evidence gained in the comprehensive investigation into LD's death. The evidence includes:

- Tasmanian Health Service – Death Report to Coroner;
- Police Report of Death for the Coroner;
- Affidavit establishing identity;
- Affidavit –CW, sworn 23 December 2022;
- Report – Dr Andrew Reid, Forensic Pathologist;
- Report – Emeritus Professor Michael Permezel, Obstetrician and Gynaecologist;
- Tasmanian Health Service – London Protocol Report;
- Letters – Dr David Ladyman, Acting Executive Director Medical Services, Tasmanian Health Service – South, 24 February and 3 March 2023;
- Medical Records – Tasmanian Health Service (LD);
- Medical Records – Tasmanian Health Service (CW); and
- Medical Records – Family Planning Tasmania, Glenorchy (CW).

**Introduction**

1. LD was born at 4.16 am on 26 January 2022, following an emergency caesarean section procedure. She lived for just one hour before, at 5.16 am, all attempts at resuscitation ceased and she was declared deceased.

2. The fact of LD's death was reported by the Royal Hobart Hospital ('RHH') in accordance with the requirements of the *Coroners Act* 1995. Her body was formally identified before being admitted to the RHH mortuary.

3. Thereafter a comprehensive investigation pursuant to the provisions of the *Coroners Act* 1995 was carried out.

**What a coroner does**

4. Before considering the circumstances of LD's death I think I should say something about what a coroner does and does not do. In Tasmania, a coroner's power is to be found in the *Coroners Act* 1995. The Act provides that a coroner has jurisdiction to investigate any death of "a child under the age of one year which was sudden or unexpected".[1] I consider that LD's death meets this definition. It follows that I have jurisdiction to investigate it.

5. It is necessary to mention the so-called 'born alive rule'. Because the *Coroners Act* 1995 requires, as a precondition to the exercise of any power by a coroner, the death of a person, in law (and it might be thought as a matter of logic) life must necessarily precede death. The genesis of the rule can be traced to the early 17th century and the case of *R v Sims*[2] which established the common law rule. That case was concerned with criminal responsibility, but the applicability of the rule has been long recognised in the coronial jurisdiction. There is no doubt that a child must survive birth before a coroner has any jurisdiction to investigate.

6. As I said in the introduction to this finding, LD only lived for an hour after her delivery, however because she did her death is one able to be investigated by a coroner.

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[1] Section 3, *Coroners Act* 1995.
[2] (1601) Goulds 174, 75 ER 1075.

7. When investigating a death, a coroner is required to answer the questions (if possible) that section 28(1) of the *Coroners Act* 1995 asks. Those questions include who the deceased was, how they died, the cause of the person's death and where and when the person died. It is settled law that this process requires a coroner to make various findings, but without apportioning legal or moral blame for the death. The job of the coroner is to make findings of fact about the death from which others may draw conclusions.[3] A coroner may, if she or he thinks fit, make comments about the death or, in appropriate circumstances, recommendations to prevent similar deaths in the future.[4]

8. It is important to recognise that a coroner does not punish or award compensation to anyone. Punishment and/or compensation are for other proceedings, in other courts, if appropriate. Nor does a coroner charge people with crimes or offences arising out of a death that is the subject of investigation. I should make it very clear that I do not consider anyone has committed any offences in relation to LD's death.

9. As was noted above, one matter that the *Coroners Act* 1995 requires, is a finding (if possible) as to how the death occurred.[5] 'How' has been determined to mean *"by what means and in what circumstances"*, a phrase which involves the application of the ordinary concepts of legal causation.[6] Any coronial investigation necessarily involves a consideration of the particular circumstances surrounding the particular death so as to discharge the obligation imposed by section 28(1) (b) upon the coroner.

10. It is also important to recognise that a degree of caution must necessarily attend this aspect of the coroner's function. The analysis involves a consideration of all the circumstances involving the death including decisions that were made at the time that may or may not have impacted upon the ultimate outcome. A coroner enjoys the particular advantage of knowing exactly what occurred when making that assessment – something the medical practitioners and other health care practitioners involved in LD's birth did not.

11. The standard of proof in the coronial jurisdiction is the civil standard. This means that where findings of fact are made, a coroner needs to be satisfied on the balance of probabilities as to the existence of those facts. However, if a coroner reaches a stage where findings being made may reflect adversely upon an individual, it is well-settled

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[3] See *R v Tennent; Ex parte Jager* [2000] TASSC 64, at paragraph 7.
[4] Section 28 (2), *Coroners Act* 1995.
[5] Section 28(1)(b), *Coroners Act* 1995.
[6] *Atkinson v Morrow* [2005] QCA 353, paragraph 13.

that the standard applicable is that expressed in *Briginshaw v Briginshaw*,[7] that is, that the task of deciding whether a serious allegation against anyone is proved should be approached with a good deal of caution.

12. The final matter that should be highlighted is the fact that the coronial process is subject to the requirement to afford procedural fairness. A coroner must ensure that any person (and the term *'person'* means legal person, which includes any legal entity) who might be the subject of an adverse finding or comment is made aware of that possibility and given the opportunity to fully put their side of the story forward for consideration.

**Circumstances of death**

13. Generally speaking, LD's mother CW's pregnancy (her first) was unremarkable and uneventful. LD's development in the womb was normal. CW received appropriate pregnancy medical care.

14. CW was admitted, as planned, on 23 January 2022 to the maternity unit of the RHH for induction of labour. A decision had been made to induce labour because of perceived persistent reduction in foetal movements. Her course of treatment was unremarkable until syntocinon[8] infusion at a rate of 6ml/hr, was commenced at 8.50 pm on 25 January 2022,

15. CW began to experience contractions as a result. Her doses of syntocinon doses were increased at 9.20 pm (to 12 ml/hr), 9.50 pm (24 ml/hr), approximately 10.00 pm (36 ml/hr) and at 11.00 pm (48 ml/hr). Contractions increased accordingly. At 11.30 pm she had an epidural inserted.

16. All the while CW and LD continued to be monitored by CTG trace. That tracing began to show deterioration in the foetal health from as early as 12.40 am on 26 January. I will return to an analysis of the CTG trace shortly.

17. In any event, at about 3.30 am the statute registrar was present and a decision was made to contact the on-call consultant. A photo of the CTG trace was sent to that consultant at about the same time. Following advice from the consultant a decision was made to proceed to urgent caesarean section.

18. By 3.50 am LD's heart rate had fallen significantly and she was showing clear signs of bradycardia. At 3.55 am an obstetric emergency response was called and CW was

[7] (1938) 60 CLR 336.
[8] Syntocinon, a tradename for the drug oxytocin, is used to cause contractions and thus induce labour.

transferred to the operating theatre for immediate surgical intervention. She arrived, according to the medical records, four minutes later at 3.59 am. Anaesthetic preparations immediately followed, and then anaesthesia itself commenced at 4.05 am, the procedure itself commenced at 4.13 am, with LD being delivered 'flat', but just alive, at 4.16 am. She was transferred straight to the resuscitaire where urgent and extensive efforts at resuscitation were commenced and continued until 5.16 am.

**Investigation - Forensic pathology**

19. On 28 January 2022 the Tasmanian State Forensic Pathologist, Dr Andrew Reid supervised an autopsy upon LD's body.[9] Following autopsy (which also included radiology and microscopic examination of various sections and histology of the placenta), Dr Reid expressed the opinion that her death as a result of intrapartum asphyxia refractory to postpartum resuscitation due to amniotic fluid and meconium inhalation/aspiration. Relevantly, no evidence was found at autopsy of umbilical cord complications, placental abruption, congenital malformations, congenital deformations or placental genetic abnormalities. Nor was any cause found for LD's initial intrapartum slow foetal heart rate which appears to have, along with other clinical features of foetal distress, led to the decision to proceed to an emergency caesarean section.

20. At autopsy the lungs were found to be dense, congested and showed features of foetal distress associated with amniotic fluid inhalation and aspiration. Apart from the lungs, all other organs appeared to be appropriate for her age and there was no evidence of any contributing pathology nor prolonged systemic hypoxaemia or ischaemia.

21. The results of histological testing showed widespread aspiration of meconium and squamous epithelial cells. In addition, placental villitis (a maternal disease or condition, i.e. one that affected CW directly and LD indirectly) was detected.

22. I accept Dr Reid's opinion. I note, completely appropriately, given the complexity of the investigation, Dr Reid organised for his conclusions to be peer-reviewed by Doctors Christopher Lawrence and Donald Ritchey, both highly experienced senior staff specialist forensic pathologists as well as Dr John McArdle a specialist anatomical pathologist at the Royal Hobart Hospital. All agreed with the conclusions set out above.

**Investigation – other aspects**

[9] The autopsy was carried actually out under Dr Reid's supervision by Dr Taybia Taybia, Anatomical Pathologist.

23. The medical records of LD and CW were obtained from all relevant caregivers and carefully analysed. An affidavit from CW was also obtained, in which she details her concerns about the birth of her baby daughter.

24. Further, at my request the course of CW's pregnancy and LD's birth, brief life and death were reviewed by Emeritus Professor Michael Permezel. Professor Permezel provided a comprehensive report, which I will discuss later in this finding. However it is important at this stage to point out that in that report he expressed the opinion that "the clinical picture agrees with the autopsy findings that the cause of death was foetal hypoxia consequent on ineffective neonatal resuscitation which in turn was due to aspiration of meconium into the foetal airway during a period of foetal hypoxia".

25. Finally, the Tasmanian Health Service carried out a "London Protocol" investigation[10] and provided a copy of the final report to me to assist in my investigation.

26. All of this material has informed the findings of fact and conclusions in this finding.

**Investigation - Emeritus Professor Permezel's report**

27. Professor Permezel is a highly qualified expert in the field of obstetrics and gynaecology, holding the chair of Professor of obstetrics and gynaecology at the University of Melbourne from 1997 until his retirement in 2019. His principal areas of research included perinatal outcome at term, gestation diabetes and preterm birth. I consider he is eminently qualified to provide assistance to me in my investigation of LD's death. He reviewed all of the evidence associated with LD's birth and provided a comprehensive report.

28. He said that the timing of the meconium aspiration is unknown "but could have been minutes or hours before giving birth. Gasping with inhalation of meconium is more likely to occur during periods of severe hypoxia. My opinion, based on an overview of the CTG, it is most likely to have occurred after 3.00 am on the day of birth and possibly around 3.50 am when the prolonged bradycardia was observed".[11]

29. I accept his opinion. Ultimately, it is impossible to identify with any precision when LD aspirated meconium. This is crucial in any analysis of the circumstances of LD's death as aspiration of meconium was the proximate and operative cause of LD's death.

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[10] The London Protocol is the revised and updated version of an earlier 'Protocol for the Investigation and Analysis of Clinical Incidents' first published in 1999 by the Imperial College, London.
The protocol outlines a process of incident investigation and analysis for use by clinicians, risk and patient safety managers, researchers and others wishing to reflect and learn from clinical incidents.
[11] Report Professor Michael Permezel, pages 32-33.

30. Professor Permezel considered and provided an interpretation of the cardiotocographs (CTG) in his report. He said in his report that from about 12.40 am on 26 January the CTGs showed signs of cord compression. By 2.00 am he considered the CTGs showed clear evidence that the condition of the foetus was 'increasingly concerning'. Between 2.00 am and 3.20 am Professor Permezel considered the CTGs gave a very clear indication that there was a 'significant risk of [foetal] compromise and action [was] needed'. Finally, at 3.50 am he thought there may have been an indication of 'a further deterioration in foetal condition'.

**Discussion**

31. Having regard to the evidence as a whole, I do not consider that the delay in CW's induction of labour by 48 hours was, in the circumstances, unreasonable. There do not appear to have been staffing shortages which impacted upon the provision of treatment during that time. It is evident that there was an increase in activity in the RHH birthing unit over that time, with 19 births occurring during that period of time. The number of births is something beyond the hospital's control. Nor do I consider that the delay, such as it was, caused or contributed to LD's death.

32. Further, I am quite satisfied that the care and treatment afforded to CW after admission and before the induction of labour were entirely appropriate. The experience level of staff caring for CW appears to have been appropriate.

33. The actual process of induction of labour was also in accordance with standard protocols. The rate at which oxytocic infusion was continued and doses increased and adjusted, was also in accordance with applicable clinical guidelines.

34. However, I do consider that the interpretation and understanding by clinical staff of the CTG trace was less than optimal. I have said there were clear and unequivocal indications that all was not well from as early as 12.40 am, and the situation was extremely problematic from as early as 2.00 am. It is evident from the findings of the London Protocol Review that there were deficiencies or shortcomings in relation to staff training in the interpretation and understanding of the CTG trace, particularly in so far as that related to the frequency of uterine contractions and foetal heart rate. It seems to me that it is essential that this issue be addressed in further training. The RHH advised in February of this year that they were only "starting to require [this year] all medical staff to take the Foetal Surveillance Education Program course and be

certified every two years".[12] That course is designed to ensure that staff are up to date in interpreting CTGs.

35. An additional weakness in relation to the interpretation of CTGs seems to be the lack of technology to allow for remote review and interpretation of the data by, for example, on-call consultants not actually present at the hospital or in the birthing unit.

36. Professor Permezel also identified the CTG issue as a shortcoming. I agree that it was, but alone, in the absence of the placental villitis, and given I cannot identify when LD aspirated meconium, I cannot say to the requisite legal standard that it caused or contributed to LD's death. At its highest, it may have. And it certainly is an area which I consider requires attention.

37. The timeliness of transfer of CW from the birthing unit to theatre for surgery was, I consider, within acceptable limits. So was the performance of the emergency C-section which saw LD delivered within 56 minutes of an E 1 (emergency – one hour) being 'called'. I am satisfied that this was so notwithstanding the fact that the obstetrics and gynaecology registrar waited for the consultant to arrive as a registrar considered they were not able to commence the emergency caesarean procedure independently. Again, I do not consider this factor caused or contributed to LD's death but I will return to it in my comments and recommendations.

38. Although there is no evidence in the medical records that a Code Blue call was made, had it been, I do not consider that it would have changed the ultimate outcome. Nonetheless, the authors of the London Protocol Report expressed the view that a Code Blue call should have been made in the theatre. As I have said, although I do not consider the failure to make that call caused or contributed to LD's death, I do agree that such a call should have been made.

39. Finally, I consider that the evidence indicates that the intensive resuscitation attempts which were undertaken after LD's birth were in accordance with expected and acceptable general procedure. That having been said I do acknowledge that there was some limitation in relation to space around the Resuscitaire during the efforts to resuscitate LD. I also acknowledge that changes have been made to improve access to, and space around, the Resuscitaire in the relevant operating theatre.

[12] Letter Dr David Ladyman, 24 February 2023, page 2 of 3.

**Conclusion**

40. I have made clear, I hope, that there were two areas where improvements in procedures are required. The first is in relation to use and interpretation of CTG trace and the second is the level of experience necessary for a registrar to commence a caesarean section in an emergency situation. The circumstances of LD's death require me to **recommend** pursuant to Section 28 of the *Coroners Act* 1995 that the RHH immediately take steps to ensure that all relevant medical staff undertake, as a priority, the Foetal Surveillance Education Program and be recertified as competent at least every two years. In addition, I **recommend** that immediate steps be taken to procure the necessary software to enable remote analysis and interpretation of CTG trace data.

41. I **comment** that it is important to ensure that registrars working in the Department of Obstetrics and Gynaecology have a sufficient level of experience before commencing night duty so as to be sufficiently competent and confident to at least commence an emergency caesarean section before the attendance of an on-call consultant.

42. I acknowledge the high level of cooperation I received from the Royal Hobart Hospital in relation to this difficult investigation.

43. I would like to also express my particular thanks to Mr Kevin Egan, Clinical Nurse Specialist – Forensic Medicine, for his assistance in relation to the preparation of this finding.

44. I convey my sincere condolences to the family and loved ones of LD for their loss.

**Dated**: 2 August 2023 at Hobart in the State of Tasmania.

**Simon Cooper**

**Coroner**