IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2015 0592

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 60(1)
Section 67 of the Coroners Act 2008

Inquest into the Death of:	Isabella Estelle Rees
Delivered On:	4 April 2019
Delivered At:	65 Kavanagh Street Southbank 3006
Hearing Dates:	12-16 & 27 November 2018
Findings of:	Caitlin English, Coroner
Representation:	Mr R. Nathwani of Counsel for the Rees family Instructed by Nevett Ford Mr A. Pillay of Counsel for Western Health Instructed by K&L Gates
Coroner's Assistant:	Leading Senior Constable King Taylor

I, Caitlin English, Coroner having investigated the death of Isabella Estelle Rees

AND having held an Inquest in relation to this death on 12-16 & 27 November 2018

at Melbourne

find that the identity of the deceased was Isabella Estelle Rees

born on 27 November 2013

and the death occurred on 4 February 2015

at the Sunshine Hospital, 176 Furlong Road, St Albans, Victoria

from:

I (a) Gastrointestinal haemorrhage

I (b) Aorto-oesophageal fistula

I (c) Foreign body in the oesophagus (Button battery)

in the following circumstances:

Background & chronology

1. Isabella (Bella) was a 14-month-old girl who lived in Taylors Hill with her parents Allison and Rob Rees and her older brother, Lochie.

2. Aside from a suspected intolerance to cow's milk, Bella was a healthy baby with no significant medical history.

3. Bella died on 4 February 2015 after a period of 19 days of ill health, which included four presentations to the Sunshine Hospital Emergency Department (SH ED).

4. On Monday 16 January 2015 Mr Rees was minding Bella. She started projectile vomiting, so he took her to the SH ED.

5. Bella was reviewed by Dr Heather Deane, the SH ED paediatric registrar. Bella was managed with ondansetron[1] and paracetamol[2] and observed. A urine sample was requested but unable to be collected. Bella's condition improved, her vomiting ceased, and she was discharged.

6. The following day Bella developed a temperature which was managed at home by Panadol every 4 hours.

[1] An anti-nausea type medication that works by acting on serotonin (5-HT3) receptors.
[2] A common anti-pyretic and analgesic type medication.

7. Mr and Mrs Rees took Bella back to SH ED on 19 January 2015 following a phone discussion with Mrs Rees and Dr Deane. Bella continued to have a fever and was more clingy than usual. At SH ED, Bella was reviewed by Dr Freya O'Loughlin, the ED paediatric resident.

8. Mrs Rees showed Bella's nappy to ED staff as the faeces was black or 'tar looking' and she described it as having a small piece of green water balloon in it.

9. A urine sample was taken which showed 160 polymorphs[3]. Other than mild hypertension[4], examination was normal. Bella was diagnosed with a urinary tract infection (UTI) and started on oral antibiotics (Bactrim[5]). She was discharged with follow-up arranged, including a planned review in the SH ED on 21 January 2015 and a referral to the paediatric outpatient clinic at the Sunshine Hospital for review in approximately 4 weeks' time. Dr O'Loughlin discussed Bella's case with Dr David Krieser, the Paediatric Emergency Consultant, who agreed with the assessment and management plan.

10. Bella returned to SH ED on 21 January 2015 as planned where she was reviewed by Dr Qin Qin, an ED intern. Her condition seemed to have improved and her blood pressure was normal. Review of the urine culture showed growth of E. coli[6]. She was discharged with instructions to complete the course of antibiotics.

11. In the three days prior to her death, Bella had reduced oral intake. On the morning of 4 February 2015, Mrs Rees heard Bella crying from her cot. She found a large amount of blood on her bedding. Mr Rees cleaned her up and gave her a bottle. Mr Rees went to work, and Mrs Rees called her sister Penny. Together they took Bella to the SH ED, arriving at 5.32am.

12. Bella was reviewed by Dr Keshav Khullar, an ED registrar. During examination, she vomited blood, prompting transfer to the resuscitation area where she was also reviewed by Dr Sam Robertson, an ED registrar. An intravenous (IV) cannula was inserted and blood investigations were taken.

13. Dr Khullar discussed Bella's case with the paediatric gastroenterology fellow, Dr Malik, at the Royal Children's Hospital (RCH), and the Paediatric, Infant and Perinatal Emergency Retrieval Service (PIPER). An x-ray was conducted which demonstrated a foreign body in the oesophagus. Bella was given omeprazole[7].

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[3] A type of white blood cell. A normal urine sample should have less than 10 polymorphs. The presence of 160 polymorphs, in conjunction with no red cells and no epithelial squamous cells is highly suggestive of UTI.

[4] A raised blood pressure. In this case, the blood pressure was documented as 124/57 mmHg.

[5] The trade name for a combination of the antibiotics trimethoprim and sulfamethoxazole. This is the standard outpatient empirical UTI treatment in children.

[6] A bacterium that commonly causes UTI.

[7] A protein pump inhibitor class medication. It is used to reduce gastric acid production, and thus potentially reduce gastric or oesophageal trauma.

14. At 7:00am, Bella had a cardiac arrest. Cardiopulmonary resuscitation (CPR) was initiated and continued for four minutes, after which time there was return of spontaneous circulation. She was given a packed red blood cell transfusion and was conscious at the time. An anaesthetics doctor attended at around 7.04am.

15. The PIPER team attended at approximately 7:24am. Bella was intubated at 7.41am. Bella had a cardiac arrest at 7:46am at which point CPR was re-commenced. Dr Krieser, Paediatric Consultant attended at 7:58am. CPR continued for 55 minutes, during which time Bella received multiple doses of IV adrenaline[8], fresh frozen plasma[9] and cryoprecipitate[10], and single doses of bicarbonate[11], calcium gluconate[12] and NoVoSeven[13]. Bella was declared deceased at 8.40am.

16. Bella's death was reported to the Coroner as it was unexpected and fell within the definition of a reportable death in the *Coroners Act 2008.*

Coronial investigation

17. 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.

18. The coroner's investigator is a police officer, Detective Senior Constable Adrian Micallef who prepared the coronial brief in this matter. The brief includes statements from Bella's parents, treating doctors at the Sunshine Hospital, the forensic pathologist who examined Bella, and investigating police officers.

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8 Drug to treat cardiac arrest and other cardiac dysrhythmias resulting in diminished or absent cardiac output. Its actions are to increase peripheral resistance via α1receptor-dependent vasoconstriction and to increase cardiac output via its binding to β1 receptors.

9 A unit of fresh frozen plasma contains all coagulation factors. Use it for patients with a coagulopathy who are bleeding or at risk of bleeding, and where a specific therapy or factor concentrate is not appropriate or unavailable.

10 A specially prepared blood product that contains high concentrations of clotting factor VIII and von Willebrand factor. Cryoprecipitate is prepared through a process of freezing and thawing whole blood to separate clotting factors from other parts of the blood.

11 Normal bicarbonate is between 20-32mmol/L. Low bicarbonate is indicative of metabolic acidosis caused by sepsis.

12 Medication used to treat low calcium or cardiac disturbance in hyperkalaemia.

13 Recombinant Factor VIIa, a clotting factor, used for treatment of bleeding episodes in haemophilia, factor VII deficiency and Glanzmann's thrombasthenia.

19. In light of concerns raised by Mr and Mrs Rees regarding Bella's medical care, I requested the Coroners Prevention Unit (CPU) review her medical care, particularly Bella's presentations to Sunshine Hospital and to identify any potential opportunities for prevention.[14]

20. The CPU review noted the insidious nature of button batteries, which are ubiquitous and seemingly harmless when held in the hand but extremely dangerous when lodged internally. Button batteries that become lodged in the mucosa of the gastrointestinal tract cause caustic injury, mucosal ulceration and if impacted long enough, perforation. The extent of damage depends on the length of impaction, the size of the battery and the amount of electrical current remaining. Even following removal of the battery, the electrical charge can continue to cause injury.

21. If a battery ingestion is not witnessed, this is problematic as most patients are asymptomatic immediately following ingestion. Clinical signs and symptoms that may initially develop include chest pain, cough, decreased appetite, nausea or vomiting, haematemesis, diarrhoea, epigastric pain, abdominal pain and fever. The non-specific nature of the initial presenting symptoms increases the likelihood of misdiagnosis, particularly in young children. Diagnosis of button battery ingestion is made plain by x-ray.

22. The difficulty is getting to the point of suspecting button battery ingestion, particularly in the young child where ingestion is not witnessed.

23. As a result of the CPU review, I requested expert reports from Dr Richard Barnes, Director of Paediatric Anaesthesia at the Monash Medical Centre and Associate Professor Simon Craig, a paediatric emergency physician and Adjunct Clinical Associate Professor at the Monash Medical Centre. Western Health produced two expert reports from Dr Kelvin Choo, a consultant paediatric surgeon practising in Brisbane, and Dr Adam West, Director, Paediatric Emergency Medicine at Monash Health. The Rees family produced an expert report from Dr Ruth Barker, Director, Queensland Injury Surveillance Unit (QISU) and Emergency Paediatrician, Lady Cilentro Children's Hospital (Queensland Children's Hospital).

24. I have also had regard to the Queensland coronial investigation into the death of Summer Steer and the recommendations made by Coroner John Hutton in his Finding dated 3 November 2015.

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[14] The CPU was established in 2008 to strengthen the prevention role of the coroner. The unit assists the Coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations. The CPU also reviews medical care and treatment in cases referred by the coroner. The CPU is comprised of health professionals with training in a range of areas including medicine, nursing, public health and mental health.

Identity

25. On 4 February 2015 Allison Rees identified her daughter Isabella Estelle Rees born 27 November 2013.

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

Cause of death

27. On 5 February 2015, Forensic Pathologist Dr Sarah Parsons conducted an autopsy and CT scan at the Victorian Institute of Forensic Medicine (VIFM), and formulated the cause of death as:

> *I(a) Gastrointestinal haemorrhage*
> *I(b) Aorto-oesophageal fistula*
> *I(c) Foreign body in the oesophagus (button battery)*

28. I accept Dr Parson's formulation of the cause of death.

29. Dr Parsons commented that once a battery has lodged in the oesophagus it causes injury predominantly through the generation of hydroxide as its electrical charge hydrolyses tissue fluid. This leads to ulceration and fistula formation. The literature suggests that this can occur within two hours of ingestion. In this case Dr Parsons noted there was well developed granulation tissue formation at the base of the oesophageal ulcer. Granulation tissue takes between three to five days to form but can take longer. The battery located at autopsy was an Energizer CR2025 3 Volt lithium battery.

Inquest

30. Bella's family raised concerns about the medical care and treatment Bella received on her presentations to Sunshine Hospital. These focussed on their concerns raised at a very early stage that Bella may have swallowed something which were not recorded in the hospital medical notes or referenced in statements made by hospital staff for the coronial investigation.

31. Mr and Mrs Rees both stated Mr Rees told SH ED staff on 16 January 2015 that he suspected Bella may have swallowed something. Further, they stated on 19 January 2015 they presented the contents of Bella's nappy to medical and nursing staff concerned that she had swallowed something.

32. The two expert reports obtained by the court considered when the button battery was likely to have been ingested, whether the care at Sunshine Hospital was reasonable and appropriate and

what was best practice for Emergency Departments identifying occult button battery ingestion. Western Health provided expert reports considering the first two issues.

33. Owing to the disputed facts in evidence of the family and the hospital, I formed the view that an Inquest should be held to forensically examine the evidence.

34. Following two directions hearings on 14 July 2016 and 20 July 2018, the Inquest was listed for hearing on 12 November 2018 for five days and 17 witnesses (including five experts) gave evidence. Submissions were heard on 27 November 2018.

35. The scope of the Inquest considered:

    i. was Bella's treatment at Sunshine Hospital Emergency Department on 16, 19 and 21 January 2015 and 4 February 2015 reasonable and appropriate;

    ii. when was the button battery ingested;

    iii. what is best practice for identifying and treating an occult ingestion of a button battery in the setting of a Hospital Emergency Department, and

    iv. what preventative measures are potentially available regarding the safety of button batteries.

36. This finding does not purport to recite all of the evidence heard at Inquest, only that which is relevant to the statutory requirements, namely the identity, cause of death and circumstances as set out in section 67 of the *Coroners Act* 2008. Circumstances of death must be relevant and proximate to the death. The circumstances focus on the issues forming the scope of the inquiry at Inquest.

37. In the coronial jurisdiction facts must be established to the standard of proof which is the balance of probabilities.

38. In the course of this finding I have reviewed the current regulation of button batteries and consumer protection laws. I have also considered suggested recommendations about medical management in Emergency Departments based on the recommendations of experts' Dr Barnes and Dr Craig, the consumer protection based on the recommendations made in the coronial investigation into the death of Summer Steer and the expert report and evidence from Dr Ruth Barker, emergency paediatrician. I have also considered the suggested recommendations by Mr and Mrs Rees in their letter dated 28 August 2017.[15]

[15] Coronial Brief pp133-137.

39. A preliminary consideration prior to determining whether medical care was reasonable and appropriate was to first determine the disputed facts in the evidence surrounding Bella's presentations to the SH ED.

DISCREPANCY IN THE EVIDENCE REGARDING WHAT THE REES FAMILY TOLD THE HOSPITAL.

16 January 2015

40. Mr Rees and Bella attended SH ED on 16 January 2015 in the late afternoon with Mr Rees' mother Mrs De'Arne Rees and his sister Ann Rees. Ann Rees was present whilst he spoke to the triage nurse however she later left to collect other children. De'Arne Rees remained with Mr Rees and Bella.

41. In his statement, Mr Rees stated when he arrived at SH ED he spoke to the nurse: '*I told them she might have swallowed something because that was all I could think of, for why she'd been vomiting.*'[16]

42. In his evidence Mr Rees stated he told the triage nurse, '*I think she swallowed something.*' This was confirmed by Ann Rees in her statement[17] and her evidence[18] and by De'Arne Rees in her statement[19] and her evidence.[20]

43. When asked if she was certain about what Mr Rees told the triage nurse Ann Rees replied:

> '*Yes, that's the whole reason I drove him to the hospital is because he thought she swallowed something, otherwise I would've just said, give her some Panadol and we'll wait a few hours and see how she goes and I would've taken him to a GP, not the hospital.*' [21]

44. There is no statement from the triage nurse and there is no reference in the triage notes to Bella having possibly swallowed something.[22]

45. Bella was assessed by Dr Deane.

46. In evidence Mr Rees stated he said to Dr Deane that he had seen an AA battery in Bella's hand and that '*...she had something from next to the dog bowl...and it was a bit of bark. It looked like she had been eating it as well and I just said, like, I'm worried that she might have*

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[16] Inquest Brief, pg. 25, paragraph 3.
[17] Exhibit 6
[18] T 220.
[19] Exhibit 7
[20] T 222.
[21] T220-221.
[22] Medical Records p 221, & see Dr Deane's evidence, at T 177, the 'problem and assessment' is typed by the triage nurse, the hand-written entry is by Dr Deane.

swallowed something…'[23] De'Arne Rees confirmed she was present when he discussed this with Dr Deane '*…that he was…worried that she'd swallowed something or eaten something out in the yard.*'[24]

47. Mr Rees told the court he relayed this information to Dr Deane whilst she was checking Bella.

48. In his statement[25] Mr Rees notes he told Dr Deane she might have swallowed something but, the statement does not include information or details about what Bella might have swallowed.

49. Bella's mother, Mrs Allison Rees arrived at SH ED following the commencement of Dr Deane's examination of Bella. She stated that Mr Rees told the doctor he was concerned Bella may have swallowed something. Specifically, '*…he [Mr Rees] asked if there was any chance she could have swallowed something as he had seen a battery in her hand.*'[26]

50. Mr Rees stated he told Dr Deane three times of his concerns that Bella may have swallowed something[27] and Mrs Rees confirmed she was present for one or two of the times he mentioned it.

51. In her evidence to the court Mrs Rees stated Mr Rees said to Dr Deane '*What if she swallowed a battery*?' She stated Dr Deane's response was that she could not possibly have swallowed an AA battery.[28]

52. Mrs Rees' statement[29] does not mention a conversation between Mr Rees and Dr Deane about what Bella may have swallowed.

53. The contemporaneous medical record, entered by Dr Deane, was:

> '*vomiting and lethargy, normally well, unsettled since last night, awake, more upset, no fever, then today increasingly upset, then 3pm started vomiting, 6-7 [times], small amount, no blood, no cough, no runny [nose], bowel motion this morning normal, no unwell contacts, eating and drinking as normal, no rashes, didn't have a daytime nap today or yesterday, small scratch under right eye, unsure of how it was caused, thought maybe from brother.*'[30]

54. Dr Deane was asked about the purpose of taking notes, which she makes contemporaneously:

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[23] T 133.
[24] T 230.
[25] Exhibit 2
[26] Inquest Brief, pg. 18, paragraph 4. Transcript 130 In evidence Mr Rees clarified this was a AA battery.
[27] T 137.
[28] T 34.
[29] Exhibit 1
[30] Inquest Brief, pg. 291.

'...the purpose is to provide a record of that...consultation. It's a place to write the most relevant and prominent symptoms, parts of the history, the most relevant examinations and something that I can use as a reference and also something that my colleagues can use as a reference if they see the child or the patient again.'[31]

55. Dr Deane was cross-examined as to whether Mr Rees told her Bella may have swallowed something. Dr Deane said she could not recall that conversation, stating:

'...I don't recall that it happened, I don't have a memory of that conversation occurring and, as I've demonstrated with my notes, I document the relative - relevant positives. If I was told that Bella swallowed something or might have swallowed something, I would have documented it.'[32]

56. There was a further discrepancy in the evidence about whether Dr Deane made a follow up appointment for Bella for the following day. Both Mr and Mrs Rees gave evidence they understood they were to bring Bella back the following day to see Dr Deane if they had any concerns.[33]

57. Mrs Rees stated Dr Deane gave her a number and said she started work at 2pm the following day if she needed to bring Bella back.[34] Mrs Rees stated they were not given an appointment letter. Further she did not recall receiving a telephone call from Dr Deane the next day. Mrs Rees stated she would not have told Dr Deane that Bella was '*fine,*' as she woke up the next morning with a fever.[35]

58. Dr Deane stated she entered Bella's details into the hospital HAAS system that she would come back the following day at 2pm.[36] '*I also gave the parents the number of the department, which I would only do when I have booked somebody in for a review...*'[37] Dr Deane went on to say that when Bella did not re-attend the following day, she rang to ask why they had not attended. '*In that conversation Bella's mother reassured me that she had improved and she was happy to manage her care at home.*'[38] Dr Deane agreed it would have been '*ideal*' if she had documented that she had made this phone call.[39] Dr Krieser, paediatric consultant in the SH ED, gave evidence that a record of the phone call should have been in the medical notes.[40]

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[31] T 178.
[32] T 198.
[33] T 138.
[34] T 13.
[35] T 74.
[36] T 189.
[37] T 189.
[38] T 190.
[39] T 205.
[40] T 364.

19 January 2015

59. On 19 January 2015 Mrs Rees rang the SH ED because Bella had a fever and '*she didn't seem to be getting better.*' She spoke with Dr Deane who told her to bring Bella back to hospital.

60. Mr and Mrs Rees both took Bella to the SH ED on 19 January 2015. They saw Dr Deane who was finishing her shift. Dr Deane described having '*brief minutes of contact with the family ...as I was about to walk out the door as part of my handover.*'[41]

61. Bella was assessed by Dr Freya O'Loughlin.

62. There is further discrepancy regarding the history given and recorded at the second presentation on 19 January 2015.

63. Whilst in the ED Mrs Rees changed Bella's nappy. She stated she was concerned by the contents, which she kept to show medical staff. She described it as '*very unusual*'[42] black poo, containing the remnants of a small green water balloon. Mrs Rees stated that she expressed her concerns to Dr Deane and Dr O'Loughlin that Bella had swallowed something.[43] Mr Rees stated he told the doctors '*two or three times*'[44] she had swallowed something.

64. In her statement, Mrs Rees commented that:

> '*I had changed her nappy while waiting at the hospital and there was diarrhoea and it was pasty. I noticed there was a small part of a broken up [tiny water] balloon in her poo. There was also black poo which was really unusual. It was extra smelly, a different smell. I showed the nappy and the balloon to the nurse and to every doctor we saw there. I was very concerned and focused on what she had swallowed.*'[45]

65. Mr Rees, again, corroborated Mrs Rees' statement:

> '*I told them she might have swallowed something. We showed them a dirty nappy. In it was a little part of a water balloon like the ring bit you blow into. Her poo was very black and very smelly which was unusual. They seemed to be only worried about the urine sample even though I kept saying she may have swallowed something. After seeing that thing in her poo, I was convinced she may have swallowed something and that was why she was sick.*'[46]

66. In evidence to the court, Mrs Rees stated she showed the nappy to Dr O'Loughlin, Dr Deane and a student doctor or nurse who was also present. Mr Rees confirmed they showed the

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[41] T 207.
[42] T 84.
[43] T 40.
[44] T 142.
[45] Exhibit 1, Coronial Brief 22.
[46] Exhibit 2 Coronial Brief 29

nappy to the doctors that were in the room.[47] Mrs Rees stated Dr O'Loughlin took the nappy to get '*another opinion.*'[48] In the medical notes, Dr O'Loughlin has noted '*green stools, more offensive but not watery.*'[49]

67. Mrs Rees stated she was concerned by the water balloon as '*evidence she [Bella] had swallowed something'* [50] and asked for an ultrasound. She agreed that this was not in her first statement but stated:

> '*...it does say that they tried to reassure me that whatever she had swallowed, had passed through. So, we definitely had a conversation about her swallowing something and me being concerned.*'[51]

68. Dr Deane denied being shown the nappy with the black poo and did not recall any interactions with Dr Kreiser about the case.[52] She denied telling Mrs Rees '*it*' (whatever she had swallowed) was '*passing through*' and denied telling her black poo was consistent with a UTI.[53]

69. In re-examination Dr Deane stated she had seen melaena '*lots of times*',[54] she knows '*exactly what it looks like, smells like and feels like*' and denied seeing it in Bella's nappy on 19 January 2015.[55]

70. Dr O'Loughlin noted in her statement[56] and told the court she had no independent recollection of seeing Bella on 19 January 2015.[57]

71. She explained in evidence the purpose of her taking a '*history of presenting complaint*' was to '*tell the story of her illness from the time that she was last in hospital.*'[58]

72. The medical record entered by Dr O'Loughlin:

> '*Febrile illness. Reviewed three days ago with frequent vomiting and lethargy, left before urine caught. Since discharge, fevers, improving with Panadol, vomiting improving, no episodes today, 2 times yesterday, non-bilious*[59]*, no blood, acute change in bowel habit,*

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[47] T 141.
[48] T 86.
[49] T 87, Medical records 211.
[50] T 88.
[51] T 88-89.
[52] T 207.
[53] T 208.
[54] T 215
[55] T 216.
[56] Statement dated May 2015, Exhibit 12.
[57] T 285.
[58] T 285.
[59] No evidence of bile.

green stools, more offensive but not watery, no cough or coryza[60]*, no headaches, no neck stiffness, no photophobia*[61]*, no rash, mobilising normally, good fluid intake, minor decrease in wet nappies.'*[62]

73. Dr O'Loughlin stated she would have discussed Bella's presentation with Dr Krieser as she was '*a paediatric resident in the first year of my paediatric training.*'[63]

74. Dr O'Loughlin had no recollection of being shown a dirty nappy by Bella's parents. She had no recollection of showing a dirty nappy to Dr Krieser.[64] Dr O'Loughlin further stated *'...if I was shown a stool that was indicative of melaena to me, this is something I would have taken very seriously and document[ed] it.'*[65]

75. In her statement Dr O'Loughlin noted a urine sample was taken from Bella. On the basis of the history of fever, vomiting and the urine microscopy result, she formed the view Bella was suffering from a urinary tract infection. As her blood pressure was elevated, she was concerned she may have associated hypertension.[66]

76. Dr O'Loughlin prescribed a course of antibiotics, prepared a referral letter for Bella's parents and made a follow up appointment for 21 January 2015. In the letter Dr O'Loughlin refers to '*...stools dark green and offensive smelling...*'[67]

77. Dr Krieser did not recall Dr O'Loughlin or Dr Deane coming to see him and being shown a dirty nappy but stated '*It's possible that it happened.*'[68]

78. In Dr Krieser's statement he recalled discussing Bella's presentation with Dr O'Loughlin and recommended a '*renal tract ultrasound to determine the renal tract architecture.*'[69]

79. Dr O'Loughlin did not recall the conversation with Dr Krieser when he recommended an ultrasound and was unable to explain why there was no reference to this discussion in her notes.[70]

80. It was Dr Krieser's evidence that the conversation should have been recorded by Dr O'Loughlin in her notes.[71]

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[60] Inflammation or irritation of mucous membranes inside the nose with runny or blocked nose.
[61] Extreme sensitivity to light. When present it can be a symptom of meningitis.
[62] Inquest Brief, page 280.
[63] T 290.
[64] T 300.
[65] T 312.
[66] Exhibit 12, CB 51.
[67] CB 121.
[68] T 365.
[69] Exhibit 15, Coronial Brief 62. He goes on to state (at 63) 'that a renal tract ultrasound would not have demonstrated the presence of a foreign body in Bella's oesophagus, in the event that the battery was present at that time.'
[70] T 308-309.
[71] T 365 & 366.

81. Dr Krieser agreed the record keeping was not '*ideal*' and agreed the '*records aren't the clearest.*'[72]

82. In the context of this cross examination, Dr Krieser agreed there was no note in the medical records for either 16 or 19 January 2015 that Bella's parents had stated they believed Bella had swallowed something.[73]

83. It was put to Dr O'Loughlin her note in the medical records of '*intermittent grunting*'[74] warranted a chest x-ray for Bella. She stated that in the context of Bella's '*complete presentation*' she concluded a chest x-ray was not required or warranted.[75] She did not accept that the symptoms of intermittent grunting and dark green stools called for an x-ray.[76]

84. Dr Krieser agreed:

> '*Bella['s] symptoms were explained by her urinary tract infection and she had no clinical symptoms to suggest that an x-ray should be performed. There is no record of Bella's parents reporting concerns that she had ingested a foreign body. Accordingly, based on my review of her medical records, I believe it would have been inappropriate to order a chest x-ray for Bella at any of her presentations in January 2015.*'[77]

85. With respect to note taking, Dr Krieser was asked if a parent had told a doctor Bella might have swallowed something, would it be noted in the notes and he answered, '*If that's been said, yes.*'[78]

86. There is no note in the triage or medical records that Bella may have swallowed something.[79]

21 January 2015

87. Mr Rees took Bella back to SH ED on 21 January 2015 for a review. Dr Qin saw Bella and noted she was '*much improved. Dad states that she has not had any more vomiting episodes, is eating and drinking well and was much more active since starting the antibiotic. She has normal wet nappies. Bowel motions still green.*'[80]

88. Mrs Rees disputed Dr Qin's note in the medical record that Bella at this point was '*eating well.*'[81]

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[72] T 366.
[73] T 366.
[74] Medical records 211 and T 309.
[75] T 310.
[76] T 313.
[77] Exhibit 15, Coronial brief 65.
[78] T 371.
[79] T 295 – reference to Triage notes.
[80] Medical records, 205.
[81] T 95-96.

89. Mr Rees also gave evidence he agreed Bella was drinking better but not eating better and agreed she had *'picked up'*.[82]

90. Mrs Rees was asked about the period from 21 January to 1 February 2015 and her statement which read *'...she seemed to be picking up and starting to eat again. She slowly seemed to be getting back to normal,'* She stated, *'She started to...look like she was improving and returning to her usual self. Meaning, her temperament, her activity levels, like but she never returned to Bella.'*[83] Mr Rees agreed, *'She started to eat again.'* [84]

91. Mr Rees agreed that from about 1 February 2015 Bella's behaviour changed. She refused her favourite food, banana, was very quiet when taken to the horse paddock and began to say *'ouch'* which was a new word.[85]

92. Mrs Rees stated that on 1 February 2015 at a family house warming party Bella was *'really quiet, which was unusual.'*[86]

4 February 2015

93. On the morning of 4 February 2015 Mrs Rees heard crying from Bella's cot. She found a large amount of blood on her bedding. Mrs Rees called her sister and together they took Bella to the SH ED, arriving at 5.32am.

94. Bella was given a triage rating of 3 and was seen by the ED registrar Dr Keshav Khuller at approximately 6.00am.

95. During the examination she vomited blood, prompting transfer to the resuscitation area where she was also reviewed by Dr Sam Robertson, an ED Registrar. An IV cannula was inserted, and blood investigations conducted. The results, available immediately, showed Bella was profoundly anaemic, with signs of lactic acidosis.

96. An x-ray was conducted which demonstrated a foreign body in her oesophagus. At 7am Bella had a cardiac arrest. CPR was conducted for four minutes and there was a return of spontaneous circulation. She was given a packed red blood cell transfusion. A PIPER team attended at 7.24am. Bella was intubated at 7.41am and following this had a large haematemesis and lost cardiac output at 7.46am at which point CPR was re-commenced. Dr Kreiser attended at 7.58am. CPR continued for 55 minutes, during which time Bella

[82] T 154.
[83] T 97.
[84] T 98.
[85] T 158.
[86] T 21.

received multiple doses of IV adrenaline, fresh frozen plasma and cryoprecipitate and single doses of bicarbonate, calcium gluconate and NovoSeven.

97. Efforts to resuscitate Bella were unsuccessful and she was declared deceased at 8.40am.

98. At Inquest, Dr Krieser was questioned about the fact that Bella was triaged as '3' when she arrived at the SH ED on 4 February 2015. He agreed this was an issue in relation to triage care. [87]

99. It was put to Dr Krieser there was a delay between triage and Dr Khuller consulting Bella.

100. Dr Krieser noted that triage is performed by a triage nurse '*expected to make a triage decision in two to three minutes... I would accept that there are always issues with triage, always room for improvement, and that it is an intuitive and educative process and what we do in triage today should be improved for tomorrow.*'[88]

101. Whilst Dr Krieser did not agree there was a delay in the delivery of blood products to Bella, he noted the hospital now has a new protocol in place to deal with avoiding some of the issues that occurred in relation to blood delivery.[89]

102. In addition to that change, Dr Krieser noted at the time of Bella's presentations to the SH ED, typed notes of medical presentations was optional and not standard. Now all notes are typed into the record in the ED.[90]

103. In addition to the discrepancies noted above, Dr Krieser commented in his statement that when he interviewed Mr and Mrs Rees in the hours after Bella's death they:

> '*Stated that they thought something was going on over the last few weeks, but they weren't sure why. Her father Rob actually said to me "she does put lots of things in her mouth." However, they were unable to tell me of a particular event when Bella gagged, coughed or spluttered after being seen with a foreign body in her mouth.*'[91]

104. Mrs Rees stated in a letter dated 26 June 2015:

> *'As parents we were unaware that our daughter had swallowed a battery, however we believe Bella may have ingested the button battery approximately 19 days prior to her death. This coincides with the first day she started showing symptoms and was taken to the Hospital emergency room.'* [92]

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[87] T 338-9.
[88] T 340.
[89] T 341.
[90] T 367.
[91] Inquest Brief, page 42.
[92] Letter from Allison Rees to Australian Competition and Consumer Commission dated 26 June 2015.

Assessment of the evidence

105. Both Mr and Mrs Rees were clear in their evidence at Inquest they believed Bella swallowed the button battery on 16 January 2015.[93]

106. They prepared their statements almost immediately following Bella's death before they were sure of her cause of death. The statements are each a very detailed account of Bella's symptoms and presentations to the SH ED.

107. Mrs Rees denied that her subsequent research and knowledge about button batteries shaped her first statement. When she left hospital after Bella's death she stated that the hospital had raised the possibility that Bella had ingested a button battery, and that she still believed it was a coin.

108. Mrs Rees stated she and her husband made their statements separately on either 8 or 9 February 2015 and signed them on 10 February 2015. She stated that Victoria Police officer Adrian Nickoloff confirmed with them it was a button battery after they had completed their statements.

109. Mrs Rees conceded in cross examination that on 10 February 2015 she suspected or knew it was a possibility Bella had ingested a button battery.[94]

110. She stated, '*My first statement was written within four days of my daughter passing away. I was under the impression it was a coin. It hadn't been confirmed it was a button battery. At no stage did I go and research any condition connected to a button battery [ingestion] before writing that statement. That statement contains a black poo. I wrote that before I knew – before I'd been contacted and informed it was a battery.*'[95]

111. Two witnesses, De'Arne Rees and Ann Rees gave evidence that Mr Rees stated to the triage nurse at the SH ED on 16 January 2015 that he thought Bella might have swallowed something.

112. Both De'Arne Rees and Allison Rees gave evidence Mr Rees told Dr Deane on 16 January 2015 he thought Bella might have swallowed something. Dr Deane has not recorded this in her notes and cannot recall if Mr Rees said this to her.

113. The statements by Mr and Mrs Rees were prepared immediately following Bella's death. Mrs Rees details Mr Rees' concerns to Dr Deane on 16 January 2015 that Bella may have swallowed something, and she herself on 19 January 2015 spoke to nurses and doctors

[93] T 25 & T147.
[94] T 46.
[95] T 52.

'focussed on what she had swallowed.'[96] Mr Rees in his statement told hospital staff on 16 January 2015 Bella might have swallowed something and that on 19 January 2015 '*They seemed to only be worried about the urine sample even though I kept saying she may have swallowed something.*'[97]

114. In cross examination it was put to Mrs Rees that a number of matters were omitted from her statement dated 10 February 2015. These matters included detail of the conversation with Dr Deane on 16 January 2015 regarding what Bella may have swallowed, no mention of her request for an ultrasound on 19 January 2015, or that on 19 January 2015 Dr Deane had said that black poo, fever and high blood pressure were consistent with Bella having a urinary tract infection.

115. Dr Krieser made some interesting observations about what gets recorded in the medical record and referred to '*narrative medicine.*' He noted that '*...very often in the rapid turnover of Emergency Departments that is required, we will ask very directed questions which really only allow people to give very directed answers. And the really important stuff could be on the side of all of that.*'[98]

116. In discussion concerning what ends up in the medical record he noted '*...in the deliberations of the clinician, and...if the parent does say something that then impacts on their assessment and investigation and their management, then that would form part of the medical record.*'[99]

117. I found the evidence of Mr and Mrs Rees to be credible and compelling. I note Mrs Rees evidence during cross examination referenced her frustrations that at times she felt the family were not listened to or believed.[100] She described '*gathering*' evidence, such as the nappy with the black poo on 19 January 2015 and the blood clots from Bella's cot on 4 February 2015 to prove her concerns.[101]

118. I am satisfied the weight of evidence supports a finding on the balance of probabilities that Mr Rees did tell the hospital triage and Dr Deane he suspected Bella may have swallowed something when he presented her to hospital on 16 January 2015. These conversations were each witnessed by two witnesses, firstly by his sister and mother and later by his mother and Mrs Rees.

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[96] Exhibit 1 Coronial Brief 23.
[97] Exhibit 2, Coronial Brief 29.
[98] T 371.
[99] T 372.
[100] T 42.
[101] T 53-54.

119. I accept both Mr and Mrs Rees' evidence that on 19 January 2015 they told Dr O'Loughlin that they were concerned Bella had swallowed something. Dr O'Loughlin, who saw Bella that day, had no independent recollection of Bella's presentation.

120. With respect to the nappy, Dr O'Loughlin had no independent recollection, and Dr Deane could not recall being shown the nappy on 19 January 2015. Dr Kreiser had no recollection of it either, and there is no reference in the medical records.

121. I accept Mr and Mrs Rees' evidence that Mrs Rees showed at least three medical staff, the nappy with what was described as 'black poo' with a small ring of a water balloon in it.

122. I am satisfied from the evidence from the three doctors that they appreciated the significance of a black poo and were familiar and experienced with recognising melaena.

123. Although Mrs Rees has described the poo as black, I accept the professional expertise of the three doctors that although they did not recall being shown the nappy, they would have been able to recognise melaena.

124. The conclave of experts who gave evidence heard at Inquest were unanimous that if it was melaena in Bella's nappy on 19 January 2015, it could not be due to an aorto-oesophageal fistula because that would cause high volume bleeding which would present acutely.[102]

    (The absence of melaena in the large bowel at autopsy was also consistent with Bella having a sudden large volume bleed from the aorto-oesophageal fistula, namely an acute, sudden event.)[103]

125. I am satisfied that Mrs Rees did request an ultrasound and accept her evidence that the balloon remnant in the nappy was '*evidence she [Bella] had swallowed something.*'[104]

126. Although I am satisfied that Mrs Rees did request an ultrasound on 19 January 2015, I note this request was overtaken somewhat by the results of the urine microscopy which confirmed the presence of a urinary tract infection. Dr Krieser noted in his evidence that such an ultrasound would not have revealed the presence of the button battery if it was there at the time.

127. Dr Krieser's evidence was that the note taking of Dr Deane and Dr O'Loughlin was not ideal and incomplete. I accept his conclusion and find there were omissions in the record keeping by hospital staff.

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[102] T 407.
[103] T 409.
[104] T 88.

128. I am satisfied that Mr and Mrs Rees did tell the SH ED nursing and medical staff that Bella may have swallowed something at both presentations on 16 and 19 January 2015.

ISSUE 1.

WAS BELLA'S TREATMENT AT THE SUNSHINE HOSPITAL EMERGENCY DEPARTMENT ON 16, 19, 21 JANUARY 2015 AND 4 FEBRUARY 2015 REASONABLE AND APPROPRIATE?

129. The five experts' witnesses were provided with each other's reports, the coronial brief and the medical records.

130. At Inquest, the experts gave 'concurrent' evidence. On Friday 16 November 2018 they met and considered 10 questions as well as some potential recommendations. They then gave their expert evidence together and they nominated Associate Professor Craig as spokesperson.

131. One question they were asked to consider was whether the medical care at the SH ED was reasonable. (Dr Barnes was not part of the consensus as, whilst not dissenting, he was of the view he did not have the requisite expertise in the field to answer that question.)

132. The consensus was that medical care was reasonable, although Dr Barker stated: '*...although I agree with the statement, I think the management was reasonable and appropriate, I think that I probably would have done a chest X-ray on the 19th on the basis of high fever and grunting in a child of that age...but I totally agree that not everyone would do that, ...I still think that the management was reasonable.*'[105]

Associate Professor Craig elaborated on the consensus view:

'*...with regard to the first three presentations, we believe the care was reasonable and appropriate...there is a difference of opinion between our group, as Dr Barker's mentioned, regarding whether or not an x-ray would have been taken on 19 January...with regard to Bella's presentation on 4 February, we also believe the care was reasonable and appropriate, and that all measures were taken to save her life. We believe that it may have been appropriate to allocate a triage category 2 instead of a triage category 3 ... on arrival. However, we do not believe that this would have changed any outcome.*'[106]

133. The complexity and challenges of diagnosis became apparent with the experts' answer to whether Bella's symptoms on her hospital presentations were consistent with battery ingestion.

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[105] T 410.
[106] T 410-411

134. They were of the opinion that it was entirely possible Bella's signs and symptoms on each occasion were consistent with a battery ingestion but went on to clarify that those signs and symptoms were not specific for battery ingestion and could be reasonably explained by other conditions, such as the urinary tract infection which was diagnosed and treated.[107]

135. The experts were asked about the symptoms if a button battery lodges in a child's oesophagus. They agreed the answer depends on where the button battery lodges, i.e., high or low in the oesophagus.

136. If it lodges high, there is likely to be irritability and drooling because of pain and difficulty of swallowing, but if it lodges low, there may be very little in the way of symptoms.[108] Because of the partial obstruction, swallowing may be more difficult and soft food or drink can go down, but solid food may not. With the passage of time, obstructive symptoms will subside, but it was unclear as to why that was. [109]

137. The other symptom noted is the possibility of catastrophic bleeding. If the button battery is in the oesophagus, it causes ulceration or superficial damage so there might be a little bit of bleeding. A small volume will usually go down with saliva '*and there's a chance that it might be altered through the body and we call blood which has been altered through the bowels ...melaena.*' [110]

138. When asked about the course of treatment if the medical records had recorded Mr and Mrs Rees' concerns that Bella might have swallowed something, Dr Barker stated:

'*I think it's very difficult. 'May have swallowed something' is a really, really, really broad category...So...the best you can say is well, it may have changed the course and it may not have changed the course.*'[111]

139. Dr Barker stated: '*It's kind of over-simplistic to think because the kid swallows something, we would necessarily get an X-ray or an ultrasound. Because depending on what they may or may not have swallowed, you need to do the appropriate test to find the thing. And the majority of things that they swallow, like cockroaches, rocks, bits of balloon, bits of crayon, bits of playdough, don't cause any of those problems.*'[112]

140. Associate Professor Craig noted that the response to a parent's concern, for example, a parent saying their child '*might have swallowed something*' is a different conversation to

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[107] T 411.
[108] T 398.
[109] T 399.
[110] T 400.
[111] T 422.
[112] T 416.

them saying '*I'm really worried she swallowed something...she puts things in her mouth all the time and something's happened*', or '*I heard a choking thing.*'

141. He stated, '*it depends on how it's raised and the level of how specific the concern is.*' [113]

142. Associate Professor Craig stated '*If I'd been told they might have swallowed something or not, well I would probably, in my mind, still think that urinary infection's pretty common, and we've got evidence of a urinary infection. I don't think I would do further testing at that point.*' [114]

143. Dr West stated, following his review of the medical notes, that his '*...overall impression was not one that would've led me to do something different than what was done.*'[115]

144. I accept the consensus view of the experts that the medical care was reasonable.

145. I take into account the difficulty in discerning symptoms of a battery ingestion. I note Bella's symptoms were fever and vomiting. She was diagnosed with a urinary tract infection which was proved by pathology. I have found that Mr and Mrs Rees did make their concerns known to hospital staff that Bella may have swallowed something.

146. I note the expert evidence does not support the view that had those concerns made it to the hospital records, the treatment regime would necessarily have been different.

147. Mr and Mrs Rees' concerns that Bella may have swallowed something were vague and not specific: an incident of swallowing, gagging or choking was not witnessed. I am not satisfied that the recording and noting of their concerns by hospital staff would have changed the course of Bella's medical treatment.

ISSUE 2.

WHEN WAS THE BUTTON BATTERY INGESTED?

148. As already noted, both Mr and Mrs Rees were clear in their evidence at Inquest they believed Bella swallowed the button battery on 16 January 2015.[116]

149. The experts were asked to consider how long symptoms of battery ingestion take to manifest.

150. Associate Professor Craig advised that the answer depends on many things, such as the charge of the battery, size, residual voltage, the direction the battery is facing and its whereabouts in the oesophagus. The immediate symptoms of swallowing would be choking

[113] T 414.
[114] T 425.
[115] T 426-427.
[116] T 25 & T147.

and gagging and the symptoms of complications such as fever, bleeding, coughing have been reported within hours to…many days and then even after removal there is significant complications reported.[117]

151. If the battery remains in the oesophagus, tissue damage can occur within hours but can persist and worsen over many days to weeks. The type of injury depends on the adjacent structures. The button battery causes an alkaline burn which does not cause a scar which means that tissue damage can continue to persist and get worse and worse over time.[118]

152. Associate Professor Craig advised the prognosis trajectory for a child of Bella's age was that significant complications occur even after a very rapid recognition of the fact a button battery had been swallowed.

153. With respect to when the battery was ingested, Associate Professor Craig stated the consensus was they believed that Bella may have ingested the battery at any time from the day before her first presentation, so 15 January 2015, up until about a week prior to her death, around 27 January.[119] He went on to say:

'*We believe that....it wasn't in the ...few days leading up to her last presentation because of all the reports that we've seen or are aware of, bleeding complications haven't been reported to happen immediately but they've often been a lag of , you know, a few days up to a week so we believe that would be the most recent but it could have been any time up - ...from perhaps 15 January onwards.*' [120]

154. Mr Pillay, counsel for Western Health submitted the evidence supports the most likely time for ingestion is between 27 January 2015 and 1 February 2015. In addition to evidence of Bella's changed behaviour towards the end of January, he noted Dr Parson's revised evidence, that there were acute inflammatory response markers, indicated the battery was ingested a couple of days before the 4 February 2015.

155. Associate Professor Craig rejected this stating:

'In this case, we're dealing with something that is still happening. The battery's in and it's causing injury today, tomorrow, potentially you know a week later if it's still in, so without being an expert, it wouldn't surprise me to see continuing, if you like, the immediate response

[117] T 402.
[118] T 403.
[119] T 406.
[120] T 406.

to an injury as well as some of the longer-term responses. This is a very, very unusual pathological process if you like, it's a continuing alkaline burn over days or longer...'[121]

156. Dr Choo agreed and stated '*...if you've got a chemical, an ongoing chemical reaction from the battery, so it's really hard to interpret...*'[122]

157. Dr Barker stated: '*None of us are pathologists but I'm not sure that I'm convinced by the argument that just because there were predominantly acute inflammatory cells there, it meant that the battery was only down there for a few days.*' [123]

158. In his report Associate Professor Craig noted granulation tissue describes the body's attempts to initiate healing and involves connective tissue cells and endothelial cells. '*My understanding is that as long as there is persisting tissue damage (such as that caused by a button battery), there is likely to be persisting inflammation, persisting attempts at healing and persisting granulation tissue.*' [124]

159. I accept the evidence of the experts which encompasses a broad time frame for ingestion from 15 to 27 January 2015. This supports Mr and Mrs Rees' belief ingestion occurred on 16 January 2015.

ISSUE 3.

WHAT IS BEST PRACTICE FOR IDENTIFYING AND TREATING AN OCCULT INGESTION OF A BUTTON BATTERY IN THE SETTING OF A HOSPITAL EMERGENCY DEPARTMENT?

160. A number of suggestions were put to the experts about how hospital staff should 'take notice' of parental concerns.

161. The experts were asked to comment on Dr Richard Barnes' report where he considered improving triage or history taking by medical practitioners, to raise awareness of the dangers of button batteries and stated, '*There are likely to be cases where an informed response to a subtle clue can convert an occult ingestion to a suspected ingestion.*'

162. The experts were also asked to comment on the utility of formally recording any concerns raised by the family at presentation in the medical record.

163. Associate Professor Craig stated:

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[121] T 436.
[122] T 436.
[123] T 437.
[124] Exhibit 19

'Based on our clinical practice, we don't believe its practical to document all concerns raised during each encounter between health professionals and family as you'll be recording a conversation almost verbatim a lot of the time.' [125]

164. Having said that, Associate Professor Craig then suggested that prominent signage or consumer advice should be displayed in hospitals to *'encourage patients and families to make sure their concerns have been addressed.'* [126] Such initiatives have been referred to in the coronial finding into the death of Lachlan Black[127] where Coroner Rosemary Carlin noted policies at Monash Health and the Northern Hospital to allow for the escalation of care by concerned family members, such as by posters in ED waiting rooms advising parents of that right.

165. It was then suggested to the experts that a space be designated in the triage document for listing any parental concerns. Associate Professor Craig responded, *'I'm just not sure how practically it would work, and sometimes different questions or concerns will come up at different points of the journey.'*[128]

166. Mr Nathwani, counsel for Mr and Mrs Rees suggested to the experts including a *'standard question'*, such as, *'Do you believe the child has swallowed something?'*[129]

167. Dr West stated: *'You're likely to ask that question many thousands of times and maybe...never get an answer that's relevant.'*[130]

168. The experts had little appetite for suggested improvements in the way in which note taking or parental concerns were recorded at triage or in the medical notes in hospitals.

169. While Mr and Mrs Rees suggested that a specific area for parental concerns be included on triage and medical notes, I note that parental concerns already form the basis of and are vital to the triage assessment and the complete paediatric assessment, along with observable symptoms and signs. In practice, particularly in non-verbal children, in paediatrics the whole history is really a reflection of parental concerns. The *'history of presenting complaint'* and parental concerns are generally not two separate things. It is difficult to envisage a clear way of preventing these concerns being overlooked other than by parents being increasingly assertive. It is difficult to imagine in this case how Mr and Mrs Rees could have been more assertive.

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[125] T 412.
[126] T 412.
[127] COR 2014 2405
[128] T 413.
[129] T 422-423.
[130] T 424.

170. The expert conclave also discussed the merits of some of the recommendations proposed which were included with the questions they considered.

171. Dr Barnes recommended the national adoption of the document prepared by Dr Barker and the Queensland Injury Surveillance Unit, available at http://www.qisu.org.au.

172. In his view the 'first response' is the key to preventing or limiting harm. All potential health system first responders should have easy access to a single, national guideline regarding the emergency management of possible battery ingestion.

173. Another improvement suggested by Associate Professor Craig was to educate health professionals so that the possibility of button battery ingestion was on the radar when detecting occult cases. Mr and Mrs Rees suggested a number of recommendations, including mandatory education for doctors on the signs and symptoms of battery ingestion.[131]

174. The experts were of the view that the QISU guideline '*Disc Batteries: Who and What do I x-ray?*' developed by Dr Barker would be helpful and applicable to Victoria.

175. Dr Barker noted the importance of managing ingested button battery cases through an expert group, such as the Poisons Information Hotline. She has also developed State-wide Referral/Retrieval Guidelines which link retrieval services with an ear nose and throat clinician at the QLD Children's Hospital to give early acute advice.

176. Dr Barker was of the view that each state needed to develop its own response, using information from other states so far as applicable.

177. Associate Professor Craig noted the challenges with recommendations for identifying button battery ingestion: '*Given the large number of non-battery related presentations who have symptoms consistent with possible battery ingestion (such as vomiting) it is difficult to make clear recommendations regarding any changes to clinical assessment of young children, without leading to a large increase in unnecessary x-rays.*'[132]

ISSUE 4.

WHAT PREVENTATIVE MEASURES ARE POTENTIALLY AVAILABLE REGARDING THE SAFETY OF BUTTON BATTERIES?

178. I requested the Coroners Prevention Unit to provide advice about potential recommendations. This involved reviewing the expert reports in this case, as well as examining the

[131] Coronial Brief p 134
[132] Exhibit 19

recommendations of Coroner Hutton in the Summer Steer Inquest held in Queensland and to prepare current recommendations relevant to the Victorian context.

179. Associate Professor Craig, in his report made the obvious point that the most important aspect of treatment is prevention. '*There should be no circumstances where unsecured batteries can be accessed by young children. All devices requiring button batteries should be secured with a screw (or similar) rather than just a plastic cover.*'[133]

180. Dr Barker echoed this, noting products where the battery 'pops out' or does not have a secure compartment. She expressed the need for the Commonwealth government to put in place horizontal legislation requiring battery compartments to be secure. [134]

181. Many of the recommendations by Coroner Hutton in the Inquest into the death of Summer Steer have already been implemented or are in the process of being implemented in Victoria.

182. Advice from the Australian Competition and Consumer Commission (ACCC) dated 15 November 2018 detailed the work of the ACCC to raise awareness about button battery safety, particularly through the National Button Battery Safety Strategy (the National Strategy). The National Strategy was formed in July 2016 in response to the coronial recommendations in the Findings of Inquest into the death of Summer Steer.

183. The current Industry Code for Consumer Goods that contain Button Batteries is voluntary. The National Strategy is currently being evaluated with an expected completion date of late 2019. The evaluation includes consideration of whether the voluntary Industry Code has been sufficient in changing supplier behaviour and product design, reduced the number of button battery safety incidents reported and reduced the risks of serious injury or death occurring by button battery products.

184. The outcome of the evaluation presents an opportunity for the ACCC to make recommendations to government as to any further intervention that may be required.

185. The advice from the ACCC noted that current Australian consumer law does not contain a general safety provision, meaning there is no general legislative prohibition on unsafe goods. Although it is not clear how Bella ingested the button battery, unsafe consumer products are rife and button batteries are ubiquitous in consumer products. The ACCC notes that an estimated 20 children per week present to an Australian Emergency Department because they have swallowed or inserted a button battery. The ACCC strongly advocates for a change in

[133] Exhibit 19
[134] T 432.

the law that would see the introduction of a general safety provision in the Australian Consumer Law.

186. Mr and Mrs Rees submitted a proposed recommendation that all manufactured items containing a battery (not just button batteries) should be locked in a compartment secured with a screw. [135]

187. Mr and Mrs Rees also proposed a recommendation regarding low intensity scanners, currently used in South Africa, as a safer alternative to the use of x-ray. The literature on low intensity scanners looked at whether they could be used in place of x-ray as a safer alternative, mainly in the setting of suspected or definite foreign body ingestion, or for following the progress of a coin, obviating the need for follow up x-rays. It appears they would not assist with the detection of a foreign body when it was uncertain as to whether the child had swallowed something, as there was no certainty in a negative result.

188. Having regard to this suggestion, I requested the CPU investigate the utility of hand-held security wands, or hand-held metal detectors in emergency departments. The research revealed they were not reliable in excluding the presence of ingested metal foreign bodies other than coins and included low sensitivities and unacceptable false negative rates.[136]

189. The research confirmed x-ray is the gold standard investigation for suspected button battery ingestions.

COMMENTS

Pursuant to section 67(3) of the Coroners Act 2008, I make the following comments connected with the death

190. As previously noted, button batteries are ubiquitous, used in a broad variety of manufactured household products. Whilst innocuous when held in the hand, they are extremely dangerous if ingested or inserted internally.

191. Their shiny smooth surface makes them attractive to small children.

192. The non-specific nature of symptoms following ingestion makes diagnosis, especially in young children, particularly difficult.

193. The ACCC considers button battery safety to be a key issue for the Australian community.

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[135] Coronial Brief pp136-137.

[136] Schalamon J, Haxhija EQ, Ainoedhofer H, Gossler A, Schleef J. The use of hand-held metal detector for localisation of ingested foreign bodies – a critical investigation. Eur J Pediatr.2004;163(4-5):257-9. Doi:10.1007/s00431-004-1401-5; Muensterer OJ, Joppich I. Identification and topographic localization of metallic foreign bodies by metal detector. Journal of Paediatric Surgery. 2004; 39(8):1245-1248. https://doi.org/10.1016/j.jpedsurg.2004.04.011.

194. The ACCC notes that despite many suppliers complying with the voluntary Industry Code, it remains concerned about the safety incidents reported.

195. The ACCC notes that based on the best available figures (as at November 2018) an estimated 20 children per week present to an Australian Emergency Departments because they have swallowed or inserted a button battery.

196. I accept the view of the experts in this Inquest that primary prevention is the most important aspect of treatment, namely that all devices requiring button batteries should be secured with a screw (or similar) rather than an unsecured cover.

197. I acknowledge and endorse the substantial work that has already been done to implement recommendations arising from the Summer Steer Inquest and to improve awareness and management of button battery ingestion. These include the Monash Children's Hospital, Safer Care Victoria and the Royal Children's Hospital (ViCTOR) fluid balance project trial and implementation[137] of a state-wide paediatric fluid balance chart; the development of Kidsafe Victoria (the Child Accident Prevention Foundation of Australia) "Button Battery – A Little Known Risk" information sheet[138] with associated resources for clinicians and the public to promote public awareness; the Royal Children's Hospital Melbourne Kids Health Info Fact Sheet[139] on button battery safety, prevention and emergency action; and the Australian Paediatric Surveillance Unit Severe Injury Related to Disc Battery (SIRDB) study to investigate incidence and nature of injuries and formulate evidence based recommendations for the prevention of severe injuries from button batteries.

198. I note the substantial work by the ACCC with respect to their National Button Battery Strategy, which includes market surveillance and assessment of products containing button batteries, promoting compliance with the voluntary Industry Code for Consumer Goods that contain Button Batteries, voluntary recalls of unsafe products by suppliers, working with the medical profession to improve the identification and treatment of button battery injuries, promoting the Poisons Information Centre approach to prioritise potential button battery ingestion cases at hospitals and collecting evidence to assess the need for regulatory intervention.

199. The National Button Battery Strategy is currently being evaluated by the ACCC and expects to report to the Government in the second half of 2019.

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[137] https://www.victor.org.au/wp-content/uploads/180270-ViCTOR-Fluid-Chart-Paeds-web-WM.pdf.
[138] https://kidsafe.vic.gov.au/home-safe/button-batteries/
[139] https://www.rch.org.au/kidsinfo/fact_sheets/Button_batteries/

200. I note the work done by Dr Barker and QISU is of particular significance and relevance as it attempts to tackle the main issue for medical practitioners which arose in this case as to *when* to suspect a button battery may have been ingested and advocates a high index of suspicion.

201. I also commend the Rees family on the creation of 'Bella's Footprint – Button Battery Awareness' social media page to increase battery awareness amongst parents, grandparents, friends and the wider community.

RECOMMENDATIONS

Pursuant to section 72(2) of the Coroners Act 2008, I make the following recommendations connected with the death:

To: Minister for Consumer Affairs, Gaming and Liquor Regulation (Victoria),

The Assistant Treasurer (Commonwealth)

202. I support the position of the Australian Consumer and Competition Commission and recommend the introduction of a General Safety Provision into Australian Consumer Law. Such a law would impact on design, sourcing and supply of unsafe consumer products including button batteries and products that contain them, and incentivise their safe supply.

To: Western Health

203. Parents should feel empowered to express their concerns and have the ability to escalate concerns. The Sunshine Hospital, as part of Western Health, has adopted the Call for Help program[140] which allows families to escalate clinical concerns. I recommend that Western Health should ensure that it is clear to all families and staff that the '*Call for Help*' policy operates throughout the hospital.

To: The Victorian Paediatric Clinical Network,

Safer Care Victoria,

Royal Children's Hospital

204. I recommend that the Victorian Paediatric Clinical Network, Safer Care Victoria and Royal Children's Hospital develop a state-wide clinical practice guideline for the assessment and management of potential button battery ingestion.

205. This guideline could be new or an amendment to the existing Royal Children's Hospital clinical practice guideline for foreign body ingestion.[141] The guideline should consider or

[140] http://www.westernhealth.org.au/PatientsandVisitors/Pages/Call_For_Help.aspx
[141] https://www.rch.org.au/clinicalguide/guideline_index/Foreign_body_ingestion/

include material from both QISU[142] (which includes Dr Barker's guideline '*Disc batteries: Who and What do I x-ray?*') and NASPGHAN[143] guidelines for button battery ingestion and highlight the need to consider occult ingestion, including in any unexplained presentation of melaena in a paediatric patient.

206. Further, the guideline should promote the Victorian Poisons Information Centre as the first point of information; and be readily available via the Clinician's Health Channel website and in Paediatric Statewide Clinical Practice Guidelines.

To: Kidsafe Victoria

207. I recommend that Kidsafe Victoria consider running button battery awareness campaigns, particularly prior to public events such as Moomba, major sporting events and the Royal Melbourne Show when children may be more likely to be exposed to products containing button batteries, including information about safe storage and disposal. [144]

To: The Royal College of Physicians, Paediatrics and Child Health Division,

The Royal College of General Practitioners,

The Australasian College for Emergency Medicine,

Ambulance Victoria

208. I recommend the use of this finding as an educational tool to raise awareness of occult button battery ingestion and highlight the need for urgent management of ingested batteries; and to ensure there is inclusion within core curricula guidelines for management.

FINDINGS AND CONCLUSION

209. Having investigated the death and having held an Inquest, I make the following findings pursuant to section 67(1) of the *Coroners Act 2008*:

The identity of the deceased was Isabella Estelle Rees, born on 27 November 2013, the death occurred on 4 February 2015 from I(a) Gastrointestinal haemorrhage I(b) Aorto-oesophageal fistula & I(c) Foreign body in the oesophagus (Button battery) in the circumstances described above.

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[142] http://www.qisu.org.au

[143] https://www.naspghan.org/files/documents/pdfs/cme/jpgn/Management_of_Ingested_Foreign_Bodies_in_Children_28.pdf

[144] https://monashchildrenshospital.org/kidsafe-victoria-button-battery-campaign/

210. I convey my sincerest condolences to Bella's parents for the loss of their beloved baby daughter and thank them for their thoughtful contributions to this investigation. I note their tireless advocacy for Bella and their efforts focussed on prevention.

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

Mrs Allison Rees and Mr Rob Rees

K & L Gates on behalf of Western Health

The Hon Marlene Kairouz MP, Minister for Consumer Affairs, Gaming and Liquor Regulation, (Victoria)

The Hon Stuart Robert MP, Assistant Treasurer, (Commonwealth)

Ms Delia Rickard, Deputy Chair, Australian Competition & Consumer Commission

The Victorian Paediatric Clinical Network

Safer Care Victoria

The Royal Children's Hospital

The Royal College of Physicians, Paediatrics and Child Health Division

The Royal College of General Practitioners

The Australasian College for Emergency Medicine

Ambulance Victoria

Product Safety Solutions

Detective Senior Constable Adrian Micallef, Brimbank Criminal Investigations Unit, Victoria Police, Coroner's Investigator.

Pursuant to section 73(1) of the *Coroners Act 2008*, I order that this finding be published on the internet.

Signature:

CAITLIN ENGLISH

CORONER

Date: 4 April 2019