QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Summer Alice STEER**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Sunshine Coast
FILE NO:	2013/2322
DELIVERED ON:	3 November 2015
DELIVERED AT:	Brisbane
HEARING DATES:	5 June 2015, 7 - 9 July 2015
CORONER:	Mr John Hutton
CATCHWORDS:	Coroners: inquest, button / coin / disc / lithium battery ingestion; aorta-oesophageal fistula; blood loss; hospital investigations

REPRESENTATION:

Counsel Assisting:	Mr Peter De Waard (Office of the State Coroner)
Ramsay Health (Noosa Private Hospital):	Ms Donna Callaghan (instructed by Dibbs Barker)

Sunshine Coast Hospital and Health Service (Nambour General Hospital):	Ms Fiona Burns (Queensland Health)
Queensland Ambulance Service:	Ms Jennifer Rosengren (Instructed by QAS)
Dr Andrew Spall (Doctors of Tewantin):	Ms Melinda Zelner (instructed by Avant Law)
Dr Carita Shield:	Mr Andrew Luchich (instructed by Ashurst Australia)

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Introduction

1. Summer Steer was 4 years old when she died on Sunday 30 June 2013 after swallowing a 2cm lithium button battery in the days to weeks prior to her death.

2. These findings address the following issues, which were settled at a pre-inquest conference on 5 June 2015:

    a. the identity of the deceased person, when, where and how she died and what caused her death;

    b. the adequacy of the clinical diagnosis and medical treatment of the deceased; and

    c. whether any recommendations can be made to reduce the likelihood of deaths occurring in similar circumstances or otherwise contribute to public health and safety or the administration of justice.

Findings required by s. 45

3. I make the following findings pursuant to s. 45(2) of the *Coroners Act 2003*:

Identity of the deceased –	The deceased person was Summer Alice Steer.
How she died –	As per the circumstances outlined below.
Place of death –	Summer died at the Royal Children's Hospital, Brisbane, in the state of Queensland.
Date of death –	Summer died on Sunday 30 June 2013.
Cause of death –	The medical cause of Summer's death was a haemorrhage, due to an aorta - oesophageal fistula, which was caused by the ingestion of a button battery that was lodged in her oesophagus.

Findings as to the adequacy of the clinical diagnosis and medical treatment of the deceased

Dr Andrew Spall (Doctors of Tewantin)

4. I make the following findings, which are relevant to Dr Spall's clinical diagnosis and medical treatment:

    a. Summer is likely to have ingested the button battery prior to her consultation with Dr Spall on 17 June 2013.

    b. Summer is likely to have had black stools at the time of her consultation with Dr Spall on 17 June 2013.

c. It is unlikely that Summer had a consultation with Dr Spall in the week prior to 17 June 2013.

d. Dr Spall is unlikely to have known that Summer had black stools during his consultation with her on 17 June 2013.

e. Dr Spall's note keeping in relation to his consultation with Summer on 17 June 2013 was inadequate because he failed to sufficiently outline Summer's history, his assessment, and his diagnostic thinking. Dr Spall should have kept a note of the information provided to him by Ms Shoesmith that Summer was improving on 21 June 2013. Dr Spall should also have kept a note of his meeting with Ms Shoesmith in the two weeks after Summer's death. A failure to keep notes was inadequate.

f. Dr Spall's decision to treat Summer for Giardia on 17 June 2013 was adequate in the circumstances. However, when treating for Giardia on speculation with Summer's symptoms, there was still a reasonable differential, which should have been considered by Dr Spall, including other causes of gut pathology like campylobacter or salmonella. This would usually have triggered a question to Ms Shoesmith as to whether there was blood in Summer's stools. Dr Spall's failure to consider this reasonable differential and to ask further questions was inadequate in the circumstances.

g. Even if Dr Spall had discovered a Maleana and referred Summer to an appropriate paediatric service for consideration of an endoscopy, the endoscopy is unlikely to have been performed urgently. The outcome for Summer is unlikely to have been any different.

Dr Jacobus du Plessis (Noosa Private Hospital)

5. I make the following findings, which are relevant to Dr du Plessis' clinical diagnosis and medical treatment:

a. Dr du Plessis' notes were inadequate because they were a composite summary of a series of questions and investigations over a four and a half hour period. Timings were not recorded. Summer's discharge 15 minutes after her initial presentation was not recorded and she was not re-triaged.

b. Dr du Plessis is unlikely to have known that Summer had black stools during his treatment of Summer at the Noosa Private Hospital on 30 June 2013.

c. Dr du Plessis' history taking was inadequate because it was too narrow and should have considered a more specific history of gastrointestinal blood loss.

d. Dr du Plessis' decision to discharge Summer within 15 minutes of arrival at the Noosa Private Hospital by ambulance in the middle of the night was unreasonable. However, the decision was adequate, given his provisional diagnosis of Epistaxis.

e. Dr du Plessis took reasonable steps to assure himself that the diagnosis of Epistaxis was correct. However, Dr du Plessis should have been thinking more laterally. He missed subtle signs that should have made him more alert to changing his diagnosis and questioning whether the bleeding was actually coming from lower down (ie. Haematemesis), rather than from Summer's nose. Particularly in the context of: no post-nasal bleeding; a rising trend in Summer's heart rate whilst she was resting; a heart rate at the high end of the normal range for a four year old; and the number of vomits containing blood.

f. Summer should have been weighed upon her initial presentation to the Noosa Private Hospital and the 24 Hour Fluid Balance Chart should have recorded inputs and outputs, rather than just outputs. A failure by hospital staff and Dr du Plessis to do this was inadequate.

g. Dr du Plessis should have taken steps to monitor and be more aware of Summer's blood loss relative to her circulating blood volume (accepting that there are challenges in estimating blood loss volume in vomits). A failure to do so was inadequate.

h. Even if Dr du Plessis had have adopted a diagnosis of Haematemesis as early as when Summer first presented, the outcome for Summer is unlikely to have been any different.

Dr Carita Shield (Noosa Private Hospital)

6. I find that Dr Carita Shield's clinical diagnosis and medical treatment of Summer was adequate.

Dr Timothy Funaki (Nambour General Hospital)

7. I find that the medical advice and support provided by the Nambour General Hospital Paediatric Registrar, Dr Timothy Funaki, to Dr Jacobus du Plessis at the Noosa Private Hospital, was adequate.

Dr Herminia Narvaez (Nambour General Hospital)

8. I find that the medical advice and support provided by the Nambour General Hospital Paediatric Registrar, Dr Herminia Narvaez, to Dr Carita Shield at the Noosa Private Hospital, was adequate.

Queensland Ambulance Service

9. I find that the response times, provisional diagnosis, and medical treatment by the Queensland Ambulance Service employees was adequate.

Retrieval Services Queensland

10. I find that the response times, clinical diagnosis, and medical treatment of Retrieval Services Queensland was adequate.

Royal Children's Hospital

11. I find that the medical treatment of the Royal Brisbane Children's Hospital was adequate.

Findings as to the adequacy of the Noosa Private Hospital's investigation

12. I find that the Noosa Private Hospital's initial limited investigation of this incident was inadequate. It was not until May 2015 (a month before the inquest began) that a systems review was conducted by the Hospital. Had a more adequate investigation been conducted by the Hospital earlier, there would not have been a need to undergo such an extensive coronial investigation and inquest.

Evidence, discussion and general circumstances of death

Background

13. In an age of technology, batteries are getting smaller and more accessible to children. Button batteries are everywhere. They are in children's toys, t.v remotes, cameras, watches, calculators, musical greeting cards, kitchen and bathroom scales, hearing aids, and remote control devices – to name a few. The battery compartments within common household products are often unsecure.

14. When a lithium button battery is ingested, saliva triggers the battery to generate an electrical current, resulting in chemical burns caused by the electrolysis of tissue fluids and hydroxide produced. Even so called 'flat' button batteries, which will not operate devices, can generate enough current (1.3 volts) to cause serious tissue damage if ingested.

15. Summer died because the button battery she ingested lodged in her oesophagus, which caused hemorrhaging, and led to an aorto-oesophageal fistula.

16. The police investigation into this incident was conducted professionally. The police investigator, Detective Senior Constable Martin Willis, from the Child Protection and Investigation Unit, Noosa Heads Station, responded promptly to a number of my requests for further information and he was present during the inquest.

17. The matter was the subject of an expert review by Dr Ruth Barker, an Emergency Paediatric specialist with around 25 years of clinical experience. Dr Barker has also held the position of Director of the Queensland Injury Surveillance Unit since 2009. Dr Barker is also a member of the Australian Standards Committee for child resistant packaging.

18. Dr Barker's review was comprehensive. Dr Barker was at all times upfront about her own experiences and she has gone to great lengths to put herself in the shoes of each medical practitioner involved in Summer's care and to understand their thought processes. Dr Barker's dedication to the task was

unquestionable and she was instrumental in enabling me to conduct such a comprehensive coronial investigation. I commend Dr Barker for her efforts.

The source of the battery is a mystery

19. The source of the battery that was swallowed by Summer is, to this day, a mystery.

20. Soon after Summer's death, investigating police officers searched Summer's residence, her Grandmother's residence, and her Child Care Centre for the source of the battery, without success.

21. However, in a statement dated 1 May 2015 and in oral evidence, Summer's family GP, Dr Andrew Spall, claimed that Summer's Mother, Ms Andrea Shoesmith, informed him that she had seen Summer playing with the "item containing the battery" after Summer's last consultation with him on 17 June 2013. This information is alleged to have been provided to him during an 'informal meeting' that took place at his practice, around two weeks after Summer's death.

22. Ms Shoesmith presented as an honest witness, clearly distressed by the loss of her daughter, with understandable memory lapses in some areas, but accurate accounts in other key areas. Whilst Ms Shoesmith acknowledges that the meeting took place so that she could inform Dr Spall about what had happened to Summer, she denied that she ever informed him that she knew the source of the battery. Ms Shoesmith has *racked her brain* to try and determine where the battery could have come from. Ms Shoesmith did mention in her first statement to police three days after Summer's death that Summer's brother had been playing with a remote control car at her grandmother's house, which had stopped working. Summer's grandmother's partner couldn't get the cover off the batteries, so he took it back to the shop and got his money back. Further enquiries by the police confirmed that this toy was not the source of the button battery. I do not consider this to be proof that Ms Shoesmith said to Dr Spall that she saw Summer playing with the item containing the battery. I accept Counsel Assisting's submission that if Ms Shoesmith had any idea where the battery came from, this is not something she would have forgotten.

23. Dr Spall did not keep any notes of the meeting. He presented as a less than credible witness and his evidence was self-serving. I prefer Ms Shoesmith's evidence over Dr Spall's in this regard.

Summer is likely to have ingested the button battery prior to 17 June 2013

24. It would have taken Summer two seconds to swallow the battery and unfortunately there were no witnesses. Summer didn't tell anyone she had swallowed the battery, which is not unusual for a child of that age who swallows something.

25. The first anyone knew that Summer had swallowed the battery was around 11:30am on 30 June 2013 when it was discovered by chance in an x-ray. Summer was dead by 1:45pm.

26. The autopsy findings indicate that the battery had been lodged in Summer's oesophagus for *at least* three days prior to her death on 30 June 2013. I accept Counsel Assisting's submission that the medical evidence supports a conclusion that it is likely that Summer had swallowed the battery around the date that she first developed black stools. This is because it is now relatively clear with the benefit of hindsight that the black stools was Melaena (blood in the stools) caused by slow bleeding from the battery ulceration site.

27. There is variable evidence in terms of the exact date the Melaena began. I assess that it is likely that Summer had Melaena (black stools) at the time of her consultation with Dr Spall on 17 June 2013. This means that Summer is likely to have swallowed the battery more than 13 days prior to her death. (My reasoning is explained further below).

Summer's absence from Child Care on Thursday 6 June and Monday 10 June 2013

28. I note that Summer's Child Care Attendance records indicate that she was absent on her scheduled child care days on Thursday 6 June 2013 and Monday 10 June 2013. The reason for Summer's absences is unknown and this was not explored with Ms Shoesmith.

Did Summer have a consultation with Dr Spall in the week prior to 17 June 2013?

29. There was considerable uncertainty during the inquest as to whether Dr Spall had seen Summer in the week before his consultation with her on 17 June 2013. It is important to resolve this issue because it impacts on my assessment of the adequacy of Dr Spall's care on 17 June 2013.

30. Ms Shoesmith participated in an audio-recorded interview with police about three hours after Summer had been pronounced deceased on 30 June 2013. Ms Shoesmith subsequently provided a statement to the police on 3 July 2013. In response to my further enquiries, Ms Shoesmith provided another statement to police dated 19 March 2015 and then some further information to the police on 10 June 2015.

31. It was not until Ms Shoesmith spoke with police on 10 June 2015, that she mentioned that she had taken Summer to see Dr Spall a week prior to her consultation with Dr Spall on 17 June 2013. Much was made of this as a potential recent invention by Dr Spall's legal representative. However, in fairness to Ms Shoesmith, it does not appear that the question was properly raised with her until 10 June 2015. Ms Shoesmith's earlier statements dated 3 July 2013 and 19 March 2015 made no mention at all of Summer's consultations with Dr Spall.

32. In response to questions from Counsel Assisting at the inquest, Ms Shoesmith could not remember the method in which she made the appointment but she said that the appointment was specifically for Summer and she was sure that the appointment was with Dr Spall.

33. Ms Shoesmith recalled that she had taken Summer to see Dr Spall on the first occasion because Summer was generally unwell, she had a temperature, and she had been specifically complaining of a stomach ache. Ms Shoesmith could not recall how high Summer's temperatures were but she did measure them and the temperatures were sufficient for her to be keeping them down with panadol. Ms Shoesmith did not think that Summer had been prescribed any medication as a result of the first appointment.

34. Ms Shoesmith recalled that Summer had developed black stools a few days after her first consultation with Dr Spall and that was the primary reason she took Summer back to see Dr Spall on 17 June 2013.

35. In cross examination by Dr Spall's legal representative, Ms Shoesmith conceded that it was *possible* that after two years she was confused, and that it was possible that Summer had just the one consultation with Dr Spall (ie. on 17 June 2013 only). However, whilst Ms Shoesmith conceded that it was possible, she then went on to say that she just couldn't remember.

36. Whereas, Dr Spall consistently denied in oral evidence having ever seen Summer in the week prior to 17 June 2013. He assured the court that his medical records were accurate and they could be relied upon to determine the issue.

37. When questioned by Counsel Assisting as to whether he always kept a medical record of his consultation with patients, Dr Spall said he always tries to generate a clinical record. He said a note is either made by clinical staff or by the doctor. If discussion about a patient occurs during an appointment with another patient (ie. discussion about a child during a parent's appointment), Dr Spall said that he would make an entry on the patient's record if appropriate and if there was time. Dr Spall advised that a Medicare card is always provided by patients for appointments and that children are usually bulk billed. Dr Spall also advised that he sees, on average, 35 patients per day.

38. To get to the bottom of this issue, I obtained the billing records from Doctors of Tewantin and the Medicare records for both Summer and Ms Shoesmith (to compare them against their Patient Health Summaries I already had from Doctors of Tewantin).

39. A review of those documents revealed that there were *no* records of *any* medical appointments on or around 10 June 2013 for Summer. The only medical appointment recorded for Summer prior to 17 June 2013 was a 'Healthy Kids Check' at Doctors of Tewantin on 1 February 2013. This tends to support Dr Spall's evidence.

40. However, Counsel Assisting did identify a discrepancy in relation to the records of an appointment that Ms Shoesmith was recorded to have had with Dr Candran Ramaswamy at Doctors of Tewantin on 14 June 2013. Ms Shoesmith's Patient Health Summary held by Doctors of Tewantin recorded

that the treating doctor was Dr Ramaswamy. Whereas, the Medicare Records for that consultation indicated that Dr Spall's provider number was billed for one of the items relating to the medical procedure on that day. Summer's Child Care records also indicated that Summer did not attend Child Care on 14 June 2013. This leaves open the possibility that Summer attended Doctors of Tewantin with Ms Shoesmith on 14 June 2013 (in the week prior to her consultation with Dr Spall on 17 June 2013). This possibility was not explored with Ms Shoesmith.

41. In response to my further enquiries, Dr Spall provided a further statement dated 10 August 2015. Dr Spall stated that although he has no independent recollection of 14 June 2013, he believes he was absent from his practice on that day and that there was an administrative error whereby the practice staff inadvertently billed the item number to his provider number, rather than Dr Ramaswamy's provider number. Dr Spall's explanation, which is supplemented by supporting evidence, appears to be reasonable.

42. The question remains whether Dr Spall could have seen Summer on a different day in the week prior to 17 June 2013 (ie. on 10 June 2013 when Summer was absent from Child Care). There is no Medicare record of such an appointment existing but Medicare records are known to sometimes be inaccurate and they are only as good as the billing and record keeping processes of a medical practice.

43. Based on a limited review, a number of discrepancies were found with Dr Spall's recording practices.

44. For example, Dr Spall said in oral evidence that he thought that he would have attended to Summer for the Healthy Kids Check on 1 February 2013. He said he would normally make a note of his consultation, but there is no record in Summer's Patient Health Summary of him having done so. The nurse, on the other hand, kept notes of her examination and the immunisations provided to Summer on that day.

45. Another example is 21 June 2013. Dr Spall says that during a consultation with Ms Shoesmith, he asked her whether Summer was improving on the medication he had prescribed Summer for Giardia four days earlier, to which she replied "yes". This is a situation that Dr Spall had earlier indicated in his evidence that he would keep a record of if appropriate and if there was time. No such record was kept and Dr Spall's excuse was that it was "just a question in passing".

46. Yet another example was the meeting that Dr Spall had with Ms Shoesmith around two weeks after Summer's death. During that meeting, Dr Spall says that Ms Shoesmith advised him that Summer had swallowed the battery after his consultation with her on 17 June 2013 and that Summer had improved on the medication he had prescribed her.

47. I have assessed that Dr Spall was elusive in relation to his responses to questions about his recording of this meeting. In oral evidence on the first

day of the inquest, Dr Spall informed the court that he *had* kept a record of the meeting in Ms Shoesmith's "medical chart", just not detailed notes but that he did record how Summer had died. In response to a leading question by Dr Spall's legal representative, Dr Spall later said that he did not keep a record of the meeting. Counsel assisting had asked Dr Spall whether he had a copy of Ms Shoesmith's medical record with him in court and he said he didn't. I therefore ordered the police to attend Dr Spall's practice with him at the conclusion of the day's proceedings to obtain the record. Before that occurred, Counsel Assisting was handed a copy of Ms Shoesmith's Patient Health Summary outside of court by Dr Spall's legal representative and I decided to cancel my order to the police to attend. An examination of Ms Shoesmith's Patient Health Summary revealed there was *no* record of any type in relation to the meeting.

48. On the second morning of the inquest, Dr Spall was re-called. Dr Spall denied having said the day before that he had kept a record of his meeting with Ms Shoesmith. When asked why he kept no record, he then drew a distinction between 'formal appointments' and 'informal appointments' with patients. He said that because Ms Shoesmith's meeting with him was not an appointment she made formally, and because he did not charge for the appointment, and had another patient with him at the time in his usual consultation room, he did not keep a record of the meeting.

49. Dr Spall's legal representative has submitted that there has been a misunderstanding regarding Dr Spall's evidence and that Dr Spall had confused two different dealings with Ms Shoesmith. Dr Spall did in fact make a note about how Summer had died in an appointment with Ms Shoesmith about four weeks after Summer's death on 29 July 2013.

50. However, despite some examples of poor record keeping and billing practices and my assessment that Dr Spall has been elusive; I have determined that the evidence only supports a conclusion that Dr Spall had a consultation with Summer on 17 June 2013. It is unlikely that Summer had a consultation with Dr Spall in the week prior to 17 June 2013.

Summer's absence from Child Care on Monday and Tuesday 17 – 18 June 2013

51. I note that Summer's Child Care Attendance records show that she was absent on her scheduled child care days on Monday and Tuesday 17 – 18 June 2013. Ms Shoesmith advised in oral evidence that this was because Summer was unwell.

Summer is likely to have developed black stools prior to 17 June 2013

52. Ms Shoesmith claimed in response to questions from Counsel Assisting that Summer had black poo prior to her consultation with Dr Spall on 17 June 2013. She said in oral evidence that Summer developed the symptom about three days before her consultation with Dr Spall on 17 June 2013.

53. Evidence against such a conclusion is that the third Noosa Private Hospital doctor involved in Summer's care on 30 June 2013, Dr Eric Van

Puymbroeck, took a history from Ms Shoesmith after discovery of the button battery by x-ray and noted that Summer had 'black stools' for the *7 days* (ie. from about 23 June 2013).

54. Also, Summer's Grandmother's statement indicated that when she observed Summer's black poos whilst Summer was staying with her between 24 – 28 June 2013, she was "surprised", indicating that she may not have been aware that Summer had black poo earlier.

55. Further, Ms Shoesmith also appears to have advised the police in an interview about three hours after Summer's death that Summer only had diarrhoea and there was no blood.

56. Furthermore, the information Ms Shoesmith provided to the police on 10 June 2015 was contradictory. On the one hand, Ms Shoesmith indicated that Summer had black poo a couple of days before going to see Dr Spall (on 17 June 2013), and then on the other hand, she indicated that Summer had the black poo a couple of days before going to her Grandmother's house (on 24 June 2013). Dr Spall's legal representative has also submitted that Ms Shoesmith was asked a leading question by the police officer obtaining the information from her on 10 June 2015, which assumed that there had been black stools at the time Summer saw Dr Spall, which had never been stated during any interview after the events, despite ample opportunity to do so. It is submitted that this evidence is tainted.

57. During cross examination by Dr Spall's legal representative, Ms Shoesmith listened to an extract of the audio recording of her police interview on 30 June 2013. After listening to the audio recording, Ms Shoesmith conceded that it was *possible* that the black poo began after her consultation with Dr Spall because they (as in Ms Shoesmith and her Mother) did at one stage wonder whether Summer's Flagyl medication (which was commenced on 18 June 2013) had been causing it.

58. However, the evidence in support of a conclusion that Summer had the black stools prior to 17 June 2013 is as follows.

59. Dr Van Puymbroeck had explained that he only questioned Ms Shoesmith when they found the battery and he did not take a *full* history from Ms Shoesmith. Whereas, the treating Noosa Private Hospital doctor before him, Dr Carita Shield, *did* take a full history. Dr Van Puymbroeck explained that it was for that reason that he actually referred at the conclusion of his notes to Dr Shield's notes.

60. Dr Shield's notes clearly indicate that Ms Shoesmith had advised her on 30 June 2013, prior to the discovery of the battery, that Summer had 'abnormal stools dark and small' two weeks ago (meaning from around 16 June 2013). During a telephone conversation Dr Shield had with Dr Raoul, a fellow from the paediatric intensive care unit at the Royal Children's Hospital on 30 June 2013, Dr Shield said, "She gives a history of also about two weeks ago of what they call Giardia with black sticky poos who saw the GP but no stools

were done." In her conversation with Dr Frances Connor (gastroenterology consultant), Dr Shield said, "Mum gives a history of about two weeks ago she had about four days of dark loose stools. Went to the GP who said it was probably Giardia. No stool was sent at that time. So whether that was melena or not, we don't know…" In her statement of 30 April 2015, Dr Shield states, "Summer's mother also reported that Summer at times over the past 2 weeks had complained of a sore tummy and dark bowel motions. She was seen by her GP, and diagnosed with Giardia". In response to questions by Counsel Assisting, Dr Shield said that she remembered Ms Shoesmith talking about dark poo or dark bowel motions or whatever words she used. She couldn't recall whether that had been for the whole two weeks or whether it had just been an episode two weeks ago but it was as a result of the dark poo or dark bowel motions and the sore stomach that Ms Shoesmith said that she had taken Summer to the GP.

61. It is also important to review the police interview that Ms Shoesmith participated in three hours after Summer's death in context. The precise question that was asked by the police officer was:

"And you said you took Summer to the doctor about two weeks ago, was there just diarrhoea or was there blood?"

62. Ms Shoesmith's full reply was:

"No, it was just a little bit of diarrhoea. Nothing major but she was saying she had [a] stomach ache and she'd had a couple of chucks…um threw up a couple of times. I said to him you know a few weeks ago I had Giardia and that it was the same stomach pain like. It seems like that's what she's complaining of and he said yeah I think you've hit the nail on the head and thinks she's got Giardia and he put her on antibiotics".

63. Prior to this question and answer, Ms Shoesmith had just finished explaining to the police officer in detail how Summer had been *vomiting* blood over an extended period of time. I accept Counsel Assisting's submission that the question was not framed in such a way that it was clear that the police officer was asking whether there was blood in Summer's stools. This is understandable given that the police officer was non-medically trained and blood in the stools (or black stools) would not have been something he was necessarily concerned about at the time. In such circumstances, it is likely that Ms Shoesmith thought that the questioner was asking whether two weeks ago there was just diarrhoea or whether there was also *vomiting* of blood? Not only was the question ambiguous, but also Ms Shoesmith's response was provided after she had just been through a traumatic and upsetting experience having lost her daughter and she had not slept for around 18 hours. It is little wonder that she may not have recalled details accurately from two weeks ago, in the circumstances.

64. Then there was Ms Shoesmith's evidence that the primary reason she took Summer to see Dr Spall on 17 June 2013 was because she had black poo. I have been unable to determine whether there was a previous appointment

around a week prior to 17 June 2013. But even if there wasn't, Ms Shoesmith's evidence about the black poo, combined with Dr Shield's evidence, supports a conclusion that Summer was likely to have had black stools at the time she saw Dr Spall on 17 June 2013.

65. From a medical perspective, Dr Ruth Barker's evidence was that it was certainly possible that Summer had black stools prior to her consultation with Dr Spall on 17 June 2013.

66. I have therefore determined that on balance, it is likely that Summer had black or dark stools at the time she saw Dr Spall on 17 June 2013.

Summer's consultation with Dr Spall on Monday 17 June 2013

67. It is clear that Summer had a consultation with Dr Spall on Monday 17 June 2013. What is less clear is the precise information that was conveyed to Dr Spall by Ms Shoesmith in relation to the symptoms Summer had been experiencing at the time.

Dr Spall's medical notes

68. With the exception of prescription information, Dr Spall made a two-line note in relation to his consultation with Summer on 17 June 2013.

?Giardia
Crampy abdo pain

Actions:
Prescription printed: Flagyl S 200mg/5mL Suspension (Metronidazole Benzoate) 5 ml Three times a day

69. Dr Spall rejected my suggestion that his notes were woefully inadequate. Dr Spall said that he believed his notes were adequate, for the purposes of the diagnosis. Dr Spall's legal representative has since submitted that on reflection, Dr Spall acknowledges there was some discrepancy in his medical records and in his recording practices.

What symptoms was Dr Spall aware of?

70. Ms Shoesmith has stated that she informed Dr Spall that Summer had:

    a. a sore stomach;

    b. temperatures; and

    c. black and wormy like poo. It wasn't solid but it wasn't diarrhoea.

71. Ms Shoesmith initially said in oral evidence that the primary reason she took Summer to see Dr Spall was because of the black poo. Under cross examination by Dr Spall's legal representative, Ms Shoesmith conceded that it was *possible*, given the length of time that has passed, the stress that has occurred since Summer's death, that she is mistaken and did not actually report to Dr Spall that Summer had black poo.

72. Ms Shoesmith said that she queried whether Summer might have had Giardia, given that she had recently had it. Dr Spall was of the opinion that she had "hit the nail on the head".

73. Ms Shoesmith didn't think that Dr Spall had examined Summer's stomach but she was not certain. She said that she recalls that Summer was sitting beside her during the consultation and didn't think that Summer got up on the bed or anything like that.

74. Ms Shoesmith said that she was provided instructions to give Summer the Flagyl medication three times a day for five to seven days. She thought that Dr Spall would have said to come back if there were any issues.

75. Despite Dr Spall's lack of notes and the fact that the consultation was over two years ago, he claims to have a detailed recollection of the consultation. He claims to have such a detailed recollection because when he learned of Summer's death two weeks after his consultation, he "reflected" on his consultation and "committed it to memory".

76. Dr Spall decided not to record any of the additional detail he had "committed to memory" because he thought this would be "mischievous", based on all of the private reading he had done into medico-legal cases. He says that although the police obtained Summer's medical notes from him within a couple of days of her death on behalf of the Coroner, he didn't expect to have any further part in the coronial process because he was confident his actions had not contributed to Summer's death. He later admitted that he knew that he might be required to provide a statement to the Coroner.

77. The first time Dr Spall recorded what he had "committed to memory" on paper was in his statement dated 1 May 2015, in response to a request for information from the Coroner.

78. Additional detail that does not appear in Dr Spall's notes, that he recalls, is as follows:

    a. that Ms Shoesmith reported that Summer had "loose bowel motions" *in those exact words*;

    b. that Ms Shoesmith reported that Summer's crampy abdominal pain had been *intermittent* for the *past three days*;

    c. that he examined Summer by gently palpating her abdomen. Her abdomen was soft and non-tender. He found nothing abnormal. In particular, there was no distension or bloating and no focal tenderness;

    d. that he took Summer's temperature and she did not have a fever;

    e. that Summer was not distressed and did not otherwise look unwell;

f. that he instructed Ms Shoesmith to give the medication to Summer for five to seven days; and

g. that he advised Ms Shoesmith to bring Summer back if she did not improve or got worse.

79. Dr Spall insists that he was not told that Summer had black poo because that was a “very ominous sign”, if reported in a child or adult, and such information would have changed the complexion of his diagnosis and clinical suspicion.

80. A number of questions were asked of Dr Spall by Counsel Assisting as to why he didn’t record all of the extra information in his notes at the time. Dr Spall provided a variety of excuses.

81. In relation to the symptom of “loose bowel motions”, Dr Spall initially said to Counsel Assisting that Ms Shoesmith had used those exact words in her description of Summer’s symptoms to him. However, I assess that this is highly unlikely given that Ms Shoesmith has not ever used anything close to those words in her police interview, statements to police, or oral evidence.

82. During leading questions by Dr Spall’s legal representative, Dr Spall later said that loose bowel motions were part of a common set of symptoms for Giardia and by recording ‘Giardia’ in his notes, he could tell that Summer had loose bowel motions without having to specifically record it.

83. In relation to the time period for the abdominal pain, Dr Spall said that a timeframe is really important to a diagnosis and is a question that is always asked, but not necessarily recorded. However, he said he would normally record it.

84. In relation to Dr Spall’s examination of Summer’s abdomen, he said that he did not record the method of his examination or his findings because there were no adverse findings.

85. In relation to taking Summer’s temperature, Dr Spall said that it was his routine practice to take a temperature when seeing an unwell child but he does not record it unless a fever is detected.

86. I accept Counsel Assisting’s submission that the other additional detail that Dr Spall recalls is plausible, and largely consistent with the symptoms Ms Shoesmith has reported to the police. I accept Dr Spall’s ‘independent recollection’ of the symptoms, even though it is unlikely that Ms Shoesmith said in the exact words that Summer had “loose bowel motions”. Whilst I have determined that it is likely that Summer had black stools on 17 June 2013, I consider that it is unlikely that this information was provided to Dr Spall.

Why did Dr Spall diagnose Summer with Giardia?

87. In Dr Spall's statement dated 1 May 2015, he stated that constipation is, by far, the most common cause of abdominal soreness that he sees in children. There is also Giardia in the local community due to the use of tank water. He stated that based on the presenting symptoms and his examination of Summer, he considered that Summer likely had Giardia, and, therefore, he provided her with a prescription of antibiotics - Flagyl.

88. The expert who reviewed this matter, Dr Barker, has advised that Giardia is a parasitic condition that causes abdominal discomfort and sometimes vomiting or diarrhea. It is contracted both from drinking or swallowing contaminated water and from the handling of contaminated body fluids or inadequate hand hygiene.

89. In oral evidence, Dr Spall clarified that he made an "educated guess" (as with all practice of medicine) when he diagnosed Summer with Giardia, and he made his assessment, based on the following:

    a. that Summer had crampy abdominal pain;

    b. that Summer had 'loose bowel motions';

    c. that Ms Shoesmith had been diagnosed by him on 5 March 2012 with Giardia and had responded to treatment, indicating that the diagnosis was correct; and

    d. the most common method of transmission of Giardia is by person-to-person contact.

90. It is noted that Dr Spall did not mention in his statement that he had taken into consideration Ms Shoesmith's earlier diagnosis of Giardia. However, Ms Shoesmith certainly agreed that she raised this upfront with Dr Spall as a possible explanation for Summer's stomach pain.

91. It turns out that Ms Shoesmith was not connected to tank water and was never asked by Dr Spall whether she was on town water or tank water. However, Dr Spall insisted in oral evidence that his diagnosis of Giardia in Summer's case had nothing to do with tank water and he would have made the same diagnosis anyway.

Why didn't Dr Spall order a stool culture test to confirm his diagnosis of Giardia?

92. Dr Spall conceded that crampy abdominal pain was a complex symptom with a range of possible causes, not just Giardia. With this in mind, the question becomes whether Dr Spall should have undertaken further tests to confirm that his diagnosis was correct and to rule out other more serious possibilities.

93. Whilst Dr Spall eventually admitted in oral evidence that his diagnosis of Giardia was not definite, he defended his decision not to order a stool culture test to confirm Giardia on the basis that:

94. Dr Spall's experience was that Giardia was a common condition in the local community. He diagnoses on average 1 – 2 patients with Giardia per fortnight, subject to variations due to seasonal differences;

95. The stool specimen has to be received by the examining laboratory at Tewantin within half an hour of it being collected. This is often difficult for parents to achieve in relation to children;

96. The stool culture testing only has a 60% chance of actually isolating the organism – so it is not a 100% diagnostic test; and

97. Dr Spall's practice is to treat patients for Giardia first if he is of the opinion clinically that they have Giardia. If there is no response to the medication, he will then initiate further investigation. The idea behind this is to not let the diagnosis delay the treatment.

98. I suggested to Dr Spall that he could have commenced treatment and at the same time sent a stool away for testing. However, Dr Spall was of the opinion that this was too difficult, given that the stool has to be collected prior to the commencement of medication.

99. I therefore made further enquiries after the inquest proceedings with the pathology service Dr Spall stated that he invariably used back in 2013 (Sullivan Nicolaides Pathology).

100. By letter dated 31 August 2015, the CEO of Sullivan Nicolaides Pathology, Dr Michael Harrison, confirmed that Dr Spall was correct in saying that in the past a significant minority of infections could not be diagnosed by the laboratory and patients were often given treatment "on spec" – that is on the suspicion that Giardia was present. The less than 100% sensitivity of the laboratory tests at that time did mean that in children and mildly affected patients a trial of treatment was often used rather than formal diagnostic testing. If they showed improvement to standard Giardia treatment regimes, this was considered to be diagnostic. Generally, it is considered that the chance of making a laboratory diagnosis is significantly reduced after or during treatment.

Improvements in Giardia testing since August 2013

101. From Dr Spall's explanation during the inquest, it appeared to me that he was not aware of the advancements in technology since Summer's death in relation to Giardia testing. However, Dr Spall has assured me in his submissions that he is aware of the new PCR test and started requesting that test as soon as it became available and certainly from the time that Sullivan Nicolaides Pathology circulated their newsletter advising of the availability of the new test in November / December 2013.

102. Dr Harrison has advised that they introduced Multiplex PCR for faecal parasites on 21 August 2013. Multiplex PCR has significantly improved the sensitivity of Giardia detection by laboratories (to close to 100%) with this now considered to be the 'gold standard'. This is also now a simplified process. Fresh specimens are no longer required and can be collected at the patient's home and delivered to either the GP's practice or a pathology collection centre without any regard to delays in transport. Turnaround time is quick and the majority of tests requested by GPs are bulk billed by pathology providers. It is usual practice to always bulk bill tests requested on children.

What would Dr Spall have done if he knew about the black stools?

103. In oral evidence, Dr Spall said that if it had been reported to him that Summer had black stools, he would have probably examined her himself with a gloved finger to see if there was blood in the stool (Melaena). This is a procedure he would always undertake with adults and he would always record this in his notes.

104. Dr Spall explained that if he were to find blood in Summer's stool, it would have suggested to him that Summer was bleeding from some point in her gastrointestinal tract. Dr Spall said that if he were suspicious that Summer had a lot of blood loss, he would have sent her directly to hospital. In hospital, if there was a lot of blood loss, they may have conducted an endoscopy or a procedure to determine where the blood was coming from.

105. Alternatively, Dr Spall said that he might have referred Summer for an x-ray (to see whether she had constipation or had ingested a foreign body) and for a blood test to make sure she wasn't anaemic from a lot of blood loss.

Why didn't Dr Spall arrange a follow up appointment with Summer?

106. Dr Spall said that he made no arrangements for a follow up appointment with Summer because it was his usual practice to always say to the parent that if the child is not improving or gets worse, he wants them back. He said that he had an open door policy with children.

107. Dr Spall recalls seeing Ms Shoesmith four days after his consultation with Summer, for a separate consultation Ms Shoesmith had with him on 21 June 2013. Dr Spall says that he asked Ms Shoesmith whether Summer was improving on the medication and Ms Shoesmith said "yes".

108. What this highlights is the dangers of relying on a parent's perception of improvement, without a follow up appointment. With the benefit of hindsight, had Dr Spall arranged a follow up appointment with Summer, he may have determined that Summer had black stools and still had a sore stomach. This may have led to the further investigations he has identified above, which may have led to the discovery of the battery. Although, I accept that there are difficulties in always arranging for follow up appointments and that such assessments must be made on a case-by-case basis.

Summer's commencement of the Flagyl medication on Tuesday 18 June 2013

109. The Medicare PBS records reveal that Summer's medication was purchased from a pharmacy on 18 June 2013. I have therefore determined that it is likely that Summer commenced the Flagyl medication on that day (the day after her consultation with Dr Spall).

Ms Shoesmith's perception that Summer had improved on Friday 21 June 2013

110. Ms Shoesmith accepts that she had a consultation for herself with Dr Spall on Friday 21 June 2013 (four days after Summer's consultation on 17 June 2013). However, Ms Shoesmith cannot recall the appointment at all and she cannot recall whether she advised Dr Spall that Summer had improved on the medication.

111. Under cross examination by Dr Spall's legal representative, Ms Shoesmith accepted that she would have advised Dr Spall that Summer had improved, given that she had returned Summer to Child Care that day and given that she had advised the police in her interview with them on 30 June 2013 that Summer had improved after seeing Dr Spall.

112. On balance, it is my view that despite Dr Spall's failure to keep a note, it is likely that Ms Shoesmith had the perception that Summer was improving on 21 June 2013 and would have informed Dr Spall of this, if asked.

113. As mentioned earlier though, this highlights the dangers of not having follow up appointments and relying on "questions in passing", without the full picture. Dr Spall should also have kept a record.

'Sore throat / spitting incident' on Friday 21 or Saturday 22 June 2013

114. In Ms Shoesmith's statement dated 1 May 2015, she recalled that in the two to three days before Summer went to her Grandmother's house (i.e. Friday 21 or Saturday 22 June 2013), Summer "spat out off the veranda" at their house. Ms Shoesmith recalled that this happened in the afternoon.

115. Ms Shoesmith recalled this because it was not a thing Summer usually did. Ms Shoesmith recalls questioning Summer: "what are you doing?" Summer answered with words to the effect: "there is something in my throat". Ms Shoesmith stated to the police that this happened two or three times but not enough to worry her.

116. Ms Shoesmith said in oral evidence that when she referred in her police interview on 30 June 2013 to Summer having a 'sore throat' in the two weeks prior to her death, it was this spitting incident that she was referring to.

117. Much was made of this 'spitting incident' by Dr Spall's legal representative as the possible moment when Summer swallowed the battery. Whilst this is certainly a possibility, I accept Counsel Assisting's submission that there are other reasonably explanations for why this incident may have occurred.

118. Dr Barker is of the opinion that it is likely that Summer's Flagyl medication will have made her feel nauseated and although she is unlikely to have been able to describe it, she would have had a metallic taste in her mouth. This will not necessarily have occurred at the time the medication was first commenced, because there can be a delayed effect due to the build up of the medication levels in the system. I accept Counsel Assisting's submission that it is possible that this in part, accounted for the spitting and description by Summer that there was something in her throat. It is also possible that Summer was experiencing pain in her throat due to having swallowed the battery in the days earlier, or for some other reason.

119. In the circumstances, and given that it is likely that Summer had developed Melaena earlier, I accept Counsel Assisting's submission that the spitting incident on Friday 21 / Saturday 22 June 2013 is unlikely to have been when Summer swallowed the battery.

Summer's symptoms whilst she stayed with her Grandmother from Monday 24 – Friday 28 June 2013

120. About a week prior to her death, Summer spent four nights at her Grandmother's house at Kin Kin during the school holidays from Monday afternoon 24 June until Friday afternoon 28 June 2013.

121. Summer's Grandmother provided a statement to the police dated 15 July 2013. Summer's Grandmother stated that she gave Summer the Flagyl medicine each day (until it ran out). She also described that Summer had black bowel motions during her stay with her:

"Summer was able to go to the toilet unassisted, she could wipe her own bottom. I remember on the Monday Summer went to the toilet and I went into the toilet with her to keep an eye on her. Summer did a poo and I saw that it was black. I thought that was a bit unusual so I tried to keep an eye on her toileting. I remember Summer going to the toilet and doing a poo each day while she was at my house. I went with her to the toilet each time. Every day it was the same, Summer did a black poo. She never complained to me about going to the toilet."

122. Summer's Grandmother stated that she noticed that Summer had a temperature every day (a hot forehead), but she did not measure her temperature. She assumed that the temperature was also due to the Giardia. Summer's Grandmother remembers saying to Summer: "Your forehead's hot". Summer responded: "I'm not hot Grammie".

123. Summer's Grandmother stated that Summer ate very well during her stay, without any complaints.

124. Summer's Grandmother also described in her statement how Summer had slept well, and she was playful and interactive at times during her stay.

'Choking incident' on Tuesday 25 June 2013

125. Summer's Grandmother recalls that on Tuesday 25 June 2013, Summer came to her and held her hand to her upper chest and said: "I think it's choking". At the time, Summer's Grandmother assumed that Summer was just saying that it hurt. Summer's Grandmother was aware that Summer's Mother had been sick with the flu and she assumed that Summer might have caught it.

126. Again, I accept Counsel Assisting's submission that this is unlikely to have been the time when Summer swallowed the battery due to the earlier Melaena. However, this may have been indicative of the effects that Summer was feeling as a result of the Flagyl medication and/or the effects of having swallowed the battery in the days before, or for some other reason.

Summer's return home on Friday 28 June 2013

127. Her Grandmother returned Summer to Ms Shoesmith's house at Tewantin on Friday 28 June 2013 at around 3:00pm.

128. In oral evidence, Ms Shoesmith said that by the time Summer had returned home, she had finished the Flagyl medication. Summer was still complaining of a sore stomach whenever she went to the toilet. Summer was going to the toilet more than normal upon her return (around three times per day). Summer didn't complain of a sore stomach when eating. She was running around normally. Ms Shoesmith cannot recall whether Summer had a temperature at that time.

129. In Ms Shoesmith's statement dated 3 July 2013, she stated that on the Friday night, Summer had dinner as usual, a bath, and then went to bed at about 8:30pm. Summer slept well.

The day prior to Summer's death - Saturday 29 June 2013

130. Ms Shoesmith stated that on Saturday 29 June 2013, the weather was not great, so they didn't do much. Summer and her brother made a cubby house under the kitchen table.

131. In oral evidence, Ms Shoesmith said that Summer was still complaining of a sore stomach when going to the toilet on the Saturday. She did not complain of a sore stomach when eating. For dinner, Summer ate chicken nuggets and chips and then had a popsicle water ice block.

132. After dinner at around 8:00pm, Ms Shoesmith brought a mattress out into the lounge and they lay down and watched a movie on t.v. The kids fell asleep on the mattress and Ms Shoesmith fell asleep on the lounge.

First vomit of blood on Sunday 30 June 2013 (around 12:30am)

133. Ms Shoesmith stated that it was at about midnight on Saturday 29 June 2013, when she awoke to her son calling out for her attention and saying that Summer had a blood nose. Ms Shoesmith observed a small, dark red, blob of blood under Summer's nose above her top lip. (Given that the 000 call was logged at 12:55am, I accept Counsel Assisting's submission that

this incident is likely to have happened at around 12:30am on Sunday 30 June 2013).

134. In oral evidence, Ms Shoesmith said that after observing the blob of blood under Summer's nose, she went to the kitchen to get a tea towel or something, and by the time she had gotten back, Summer had vomited blood in the lounge area. Ms Shoesmith explained that she didn't observe Summer vomit, but she did observe the vomit on the lounge room floor, between the mattress and the lounge she had been sleeping on.

135. It is acknowledged that Ms Shoesmith did not actually witness Summer vomit in the lounge room and she seemed unsure whether the source of the collection of blood was from the nose or the mouth when she called 000 (and perhaps even during the police interview on 30 June 2013). However, I accept Counsel Assisting's submission that it is likely, with the benefit of hindsight, that the source of the blood was from a vomit. Summer could have even potentially vomited from her nose.

136. According to the information Ms Shoesmith provided to the police on 10 June 2015, the blood in the lounge room was 'darker blood'. Ms Shoesmith stated that "it wasn't thin, it wasn't bright red, possibly a cup full. The area the blood covered was about the size of a dinner plate on a timber floor".

Second vomit of blood (between 12:30 – 12:55am)

137. In oral evidence, Ms Shoesmith explained that after observing the vomit in the lounge room, she went back to the kitchen to grab another tea towel or something.

138. Summer and her brother followed Ms Shoesmith into the kitchen and then Summer's brother said words to the effect: "she has just spewed blood". Ms Shoesmith turned around and saw that Summer had vomited blood onto the dining room chair closest to the kitchen.

139. Ms Shoesmith stated that the vomit on the chair covered the whole seat of the chair and a bit on the floor. In oral evidence, Ms Shoesmith estimated the volume of blood to be about 200ml. It was dark, not bright red. It was not thin or runny. It was the same as the first vomit in the lounge room. However, the vomit on the chair was estimated by Ms Shoesmith to be twice as big as the vomit in the lounge room.

First '000' call (12:55am)

140. After Summer's second vomit, Ms Shoesmith picked Summer up and rang '000' on her mobile phone. She didn't have a chance to clean up the blood. The Queensland Ambulance Service Electronic Ambulance Report Form (QAS EARF) indicates that the 000 call was made at 12:55am on 30 June 2013.

141. The transcript of the 000 call illustrates that Ms Shoesmith was not sure at the time whether the blood was coming from Summer's nose or whether she was vomiting it up. She advised the operator at one stage that her son had

told her that the blood had come from Summer's mouth. She advised the operator at another point that she thought the blood might have been coming from Summer's nose *and* her mouth. Ms Shoesmith emphasized to the operator a number of times that there was a lot of blood. Ms Shoesmith also informed the operator that Summer was looking pale.

142. Whilst the ambulance crew was on their way, the operator gave Ms Shoesmith instructions to pinch Summer's nose. Ms Shoesmith advised that she had done that and the bleeding had stopped. Ms Shoesmith informed the operator that Summer hadn't knocked her nose or anything, Summer had just woken up with it, and she wouldn't have called if it was just for a blood nose but there was a lot of blood.

First QAS attendance at Summer's home (1:26am)

143. The QAS EARF indicates that the ambulance was dispatched from the Nambour station at 1:00am (as 'category 1' – time critical), and arrived at Ms Shoesmith's house at Tewantin at 1:26am. The ambulance crew spent 10 minutes with Summer (from 1:28am to 1:38am) before Summer was loaded into the ambulance.

144. It is not clear what information was passed on to the ambulance crew by the operations centre, but it would appear that what the crew took from it was that they were attending to a blood nose only.

145. Statements were obtained from the two ambulance paramedics who attended to Summer, Ms Felicity Rutyna (the driver) and Mr Jake Curnow (the Patient Care Officer). Paramedic Rutyna had the best recollection, whereas Paramedic Curnow's recollection was limited.

146. In Paramedic Rutyna's statement dated 22 June 2015, she stated that on arrival, her and her partner entered Ms Shoesmith's home. Paramedic Rutyna recalls that Summer was sitting with her Mother on the dining table in the dining room when Paramedic Curnow assessed her. Summer appeared quiet and did not seem to be distressed.

147. Paramedic Rutyna recalls that Ms Shoesmith advised them that Summer had had a nosebleed, which had stopped. She does not recall Paramedic Curnow asking any specific questions about the blood. Ms Shoesmith indicated that Summer was not normally that quiet and did not often experience nosebleeds.

148. Paramedic Rutyna stated that she observed two small collections of blood, both of which she estimates to have been around 20mls. One collection of blood was on a wooden seat in the dining room and the other was on the floor next to a mattress in the living room. They didn't observe any blood on Summer's nose, mouth or anywhere on her face. They couldn't recall any blood on Summer's clothes. Summer didn't have any active bleeding while they were with her. Both Paramedic Rutyna and Paramedic Curnow advised that there was nothing about the blood to make them think that the blood had *not* come from Summer's nose.

149. Paramedic Rutyna attached a monitor to Summer to get a pulse rate and took her temperature while she was sitting on the table. She recalls that Paramedic Curnow palpated down Summer's trachea, near her epiglottis, and Summer did not flinch or indicate any pain. She distinctly recalls that Ms Shoesmith was quite distressed. They decided to transport Summer to the Noosa Private Hospital as a precaution.

150. In oral evidence, Ms Shoesmith said that the ambulance crew asked her questions about Summer's blood nose. Ms Shoesmith informed them that there was only a small amount of blood and she wasn't worried about the blood nose. She informed them that she was more worried about the vomiting of blood.

151. The QAS EARF indicates that the ambulance departed Summer's home at 1:38am. Summer was transported directly to the Emergency Department of the Noosa Private Hospital (as 'category 2' – non-time critical) and they arrived at the hospital within 6 minutes at 1:44am.

The ambulance crew's provisional diagnosis of Epistaxis

152. Paramedic Curnow selected a provisional diagnosis of 'Epistaxis' (ie. bleeding from the nose) from the drop down box in the 'Final Assessment' section of the QAS EARF. He stated that there were a lot of available options, including 'Haematemesis' (vomiting of blood), but he felt Epistaxis was the most appropriate option because it was consistent with the history provided by Summer's Mother and the blood he observed at the house.

153. The case notes in the QAS EARF described the incident as:

> *…[A] spontaneous nosebleed at around 1am…Bleeding resolved prior to QAS arrival.*

154. Next to the heading 'Secondary Survey', were the words:

> *Bleeding >> bleeding from the nose and mouth. Nil bleeding with QAS.*

155. It is therefore clear, that although the QAS ambulance crew were of the opinion that the blood they observed was consistent with a nosebleed, Ms Shoesmith *did* in fact report to them that Summer had also been bleeding from the *mouth*.

156. It is noted that the QAS ambulance crew did not record the volume, colour or consistency of Summer's blood loss at home. This is perhaps understandable, given their belief they were only dealing with a nosebleed.

First presentation to the Noosa Private Hospital (1:45am)

157. When Summer first arrived at the Noosa Private Hospital, it would appear that the Emergency Department was relatively quiet. Paramedic Rutyna didn't think there were any other patients in the department. RN Kylie

Conlon, who provided a statement dated 2 July 2015, believes Summer was the only patient in the Department at the time.

158. Paramedic Curnow provided a verbal handover to the triage nurse and to the Senior Medical Officer on duty at the Emergency Department, Dr Jacobus du Plessis. The handover was not recorded by the ambulance crew or the hospital staff and no one can recall what was said. However, in Ms Shoesmith's statement provided three days after Summer's death, she stated, "The ambulance people spoke with the Doctor. I heard them say that Summer had vomited blood."

159. The Noosa Private Hospital medical records indicate that Summer was triaged between 1:45am and 1:47am on 30 June 2013. On initial assessment, Summer was assessed as physiologically stable and allocated a 'category 5 triage' (meaning she was assessed as being able to wait for two hours).

160. Despite being allocated a low priority, Summer was promptly seen by a nurse at 1:50am and then shortly afterwards by Dr du Plessis.

161. The triage notes state:

0100 Spontaneous nose bleed. Bleeding resolved spontaneously. Nil bleeding on arrival.

162. This appears to have been a direct transfer of the case description in the QAS EARF, which was printed out at 1:52am and left at the hospital. It is noted that the information in the QAS EARF regarding Summer's 'bleeding from the mouth' appears to have initially escaped the hospital staff conducting the triage.

163. There was no estimation in the triage documentation as to the volume, colour, or consistency of the blood loss at home.

164. Summer was not weighed upon initial presentation at the Noosa Private Hospital, despite this being standard procedure for children and despite weight being important for medication and monitoring of fluid loss purposes.

Dr du Plessis' initial consultation with Summer

165. Dr du Plessis provided statements to the Coroner dated 5 May 2015, 14 May 2015 and 9 June 2015. He also provided oral evidence at the inquest.

166. Dr du Plessis kept much more extensive notes than Dr Spall. It would appear that he typed some of his notes along the way, but typed the majority of his notes between around 2:00 and 3:30am (after he attended to a patient with a heart attack). His notes cover a period of close to five hours and they are very unclear in terms of when he conducted various examinations and made his observations.

167. Dr du Plessis had an independent recollection to fill in some of the gaps in

his notes. Dr du Plessis presented as a reliable and credible witness, who was upfront about his mistakes, and who has genuinely tried to learn from this experience.

168. By the time Summer saw Dr du Plessis, his notes indicate that he had at least realised that Summer had *also vomited* blood at home. He noted:

pt with nosebleed tonight and then had a vomit with blood.

169. Ms Shoesmith said in oral evidence that she informed Dr du Plessis that it started with a blood nose and then Summer had vomited at home *twice*.

170. Dr du Plessis said that he would have asked about the colour, consistency and volume of the blood vomited at home but acknowledged that he did not record this information, even though he agreed that it was important information to record. Ms Shoesmith says that she informed Dr du Plessis that she did not know how much blood was vomited the first time but that the second vomit was quite big.

171. Ms Shoesmith says that Dr du Plessis kept reassuring her that the blood that Summer had vomited was ingested from her nose bleed and that it was quite a common condition. Ms Shoesmith says that she kept raising a concern with Dr du Plessis' diagnosis of Epistaxis on the basis that there had not been that much blood coming from Summer's nose.

172. Dr du Plessis acknowledged that it was important to weigh children upon presentation to the Emergency Department. He said he would usually check that this was done but did not do so on this occasion.

173. Dr du Plessis says that when Summer first presented, he examined her nose and throat and there was no active bleeding. He did, however, believe that Summer had had a nosebleed at home due to the information the ambulance crew provided him, the information from Ms Shoesmith, and his observation that Summer had dry blood in and around her nose.

174. Dr du Plessis did not record his observation of dry blood in and around the nose. Whilst it is acknowledged that the ambulance crew said they did not observe any blood on Summer's nose, mouth or anywhere on her face, I accept Counsel Assisting's submission that this doesn't necessarily mean, that Dr du Plessis didn't observe this. It is possible that the ambulance crew's recollection of this detail two years later is incorrect, or that there was dry blood in and around Summer's nose but the ambulance crew didn't see it.

175. Dr du Plessis acknowledged in oral evidence that the dry blood he observed in and around Summer's nose could also have indicated that Summer had vomited through her nose.

176. Dr du Plessis recorded that Summer had not been unwell and had never had a nosebleed or a vomit with blood before. In oral evidence, Dr du Plessis

couldn't recall the questions he asked Ms Shoesmith to determine that Summer had not been unwell. He said the sorts of questions he would usually ask were: whether the patient had been unwell in the last week or two; had they had a runny nose' and did they have any other complaints that needed attention. He would not normally ask whether the child had seen a doctor recently.

177. Dr du Plessis couldn't recall being told by Ms Shoesmith that Summer had been diagnosed with Giardia or that she had been taking Flagyl medication. He said that if he had been informed of this, he would have expected that he would have kept a note of it.

178. Dr du Plessis could not recall being told that Summer had a history of a sore stomach. Again, he thought he would have made a note of that, if he was informed about it.

179. Dr du Plessis did not check Summer's temperature but he said that if Ms Shoesmith had advised him that Summer had a history of temperatures, he would have kept a note.

180. Dr du Plessis noted that Summer's observations were stable and within normal parameters for a child of 4.5 years, and she was alert and orientated. Ms Shoesmith agreed in oral evidence that during Summer's first presentation to the hospital, she looked well. She thought Summer was just tired really.

Why did Dr du Plessis diagnose Summer with Epistaxis?

181. Dr du Plessis stated that he based his diagnosis of Epistaxis on:

    a. the advice he received from the ambulance crew and Ms Shoesmith that Summer had experienced a nose bleed;

    b. his observation of dried blood in and around Summer's nostrils;

    c. his observation that there was no active bleeding from the nose; and

    d. his holistic view that Summer appeared well.

Did Dr du Plessis know that Summer had black stools?

182. Ms Shoesmith stated to the police on 10 June 2015 and again in oral evidence that she told Dr du Plessis that Summer had black poo.

183. Ms Shoesmith does not appear to have been questioned by the police during her police interview on 30 June 2013 or in relation to her statement dated 3 July 2013 about the information she provided to Dr du Plessis. I therefore accept Counsel Assisting's submission that the absence of such information in these statements should be given no weight. However, Ms Shoesmith's statement dated 19 March 2013 *does* specifically address this issue and Ms Shoesmith made no mention of black stools. She only stated that she advised Dr du Plessis of the recent stomach pains and diagnosis

of Giardia by Dr Spall. I therefore accept Counsel Assisting's submission that there is a relevant inconsistency between Ms Shoesmith's statements dated 19 March 2013 and 10 June 2013.

184. During cross-examination by Dr du Plessis' legal representative, Ms Shoesmith said that she definitely told the "first doctor" (ie. Dr du Plessis) about all of the symptoms and the symptoms included black poo.

185. Dr du Plessis said in oral evidence that he couldn't recall being told about the black stools but he would have expected himself to keep a note of that because it would have been "quite relevant" and he would have taken specific action.

186. As mentioned earlier, it is my assessment that Dr du Plessis was a reliable and credible witness, and his notes were relatively extensive in terms of the information he received (just uncertain in relation to the times he conducted various examinations and made observations).

187. Ms Shoesmith was also a credible witness, but her memory would no doubt have been affected and it would be difficult to recall two years later specifically what she said to each doctor and nurse she would have spoken to at the Noosa Private Hospital over an 11 hour period involving three separate presentations, and during what would have been a very traumatic experience.

188. I therefore accept Counsel Assisting's submission that Dr du Plessis is unlikely to have been aware of the history of black stools.

189. There is no doubt, however, that Summer did in fact have a history of black stools at the time she presented to the Noosa Private Hospital. The fact that Dr du Plessis did not know about it could be an indication that he was not asking the right questions, due to his focus on Epistaxis. It could also be an indication, as submitted by the Noosa Private Hospital's legal representative, that Ms Shoesmith did not attach any significance to this history at the time. I do not, however, accept the Noosa Private Hospital's submission that Ms Shoesmith was not aware of the black stools when Dr du Plessis saw Summer.

What would Dr du Plessis have done if he knew about the black stools?

190. Dr du Plessis said in oral evidence that had he have known about the black stools, he would have investigated it, especially in the context of Summer vomiting blood.

191. Dr du Plessis explained that black stools would not have been caused by acute Epistaxis, so this symptom would have caused him to start to think of other causes of the bleeding. The types of tests he would have performed would have depended on how unwell Summer was.

First discharge from the Noosa Private Hospital (around 2:00am)

192. Within 15 minutes of Summer's arrival at the Emergency Department of the

Noosa Private Hospital by ambulance on 30 June 2013, Dr du Plessis discharged Summer (at around 2:00am).

193. The discharge was recorded in the nursing notes but not in Dr du Plessis' notes.

194. Dr du Plessis says that he advised Ms Shoesmith that if she noticed any bleeding or if there was anything she was concerned about, to come back. Ms Shoesmith says that she was given a vomit bag to take home with her.

Why did Dr du Plessis discharge Summer so quickly?

195. Dr du Plessis explained in oral evidence that he discharged Summer within 15 minutes of her arrival on the basis that:

    a. there was no active bleeding;

    b. all results were within parameters;

    c. Summer was stable; and

    d. Summer looked fine.

196. As mentioned earlier, it would appear that Summer was the only patient (or one of the only patients) in the Emergency Department when she first presented. RN Conlon stated that she has been informed that after Summer's initial presentation, there were five patients in the Emergency Department between 2:00am and 6:00am. Dr du Plessis acknowledged that there was no urgency to discharge Summer to free up spaces within the Department. However, he questioned whether that should influence decisions and emphasised that they have so many presentations of children in the mornings that they couldn't keep everyone in for observation.

Third vomit of blood outside the Emergency Department (around 2:05am)

197. Ms Shoesmith stated that the hospital called them a taxi. They only walked about three metres away and exited the building, when Summer vomited blood onto the concrete path near the exit. This is estimated to have occurred within 1 – 5 minutes of discharge (at around 2:05am).

198. Ms Shoesmith said in oral evidence that no blood came out of Summer's nose. Ms Shoesmith estimated that the amount of vomit outside the hospital was about double the amount of the vomit earlier at home on the dining room chair. On 10 June 2015, Ms Shoesmith drew for the police a circle on a concrete path, indicating the circumference of the area of vomit had a diameter of around 66 cm.

199. Ms Shoesmith said that the blood was "bright red" (different to the dark blood vomited at home) and that she thought the lighting outside the hospital was fluorescent. It was sufficient for her to see the colour. Ms Shoesmith said she was sure that it was bright red because it scared the hell out of her and so much of it was bright red. (It is noted, however, that in prior statements,

Ms Shoesmith had stated that the first vomit that was bright red was around 8:00am after they returned home later that morning).

200. Ms Shoesmith yelled to her son to press the emergency button. Ms Shoesmith says that the 'South African Doctor', whom she now identifies as Dr du Plessis, came out and carried Summer back into the Emergency Department.

201. Dr du Plessis denied that he went outside to retrieve Summer. He says "they" came back in and brought Summer into the cubicle and they told me she had vomited outside. He re-assessed Summer and afterwards went outside to have a look at the vomit. He wasn't sure how long afterwards but estimated it would have been more than 10 minutes later. He said it was a "darkish" area but there was enough light for him to see the colour of the blood. There wasn't anything that he could see that was (bright) red blood. Dr du Plessis estimated the diameter of the vomit on the cement to be around 50 – 60cm.

202. The nursing notes in the 24hr Fluid Balance Chart indicate that Summer's vomit at around 2:00am was 200ml and 'blood stained'. This record was originally made by RN Conlon in the 1:00am row but was later crossed out and re-recorded in the 2:00am row by RN Mark Jessep. RN Conlon said that she didn't personally see the vomit and she does not recall who made the report to her. There was no comment about the colour of the blood on the Fluid Balance Chart, but it was recorded as "containing clots" in the nursing notes. RN Conlon has explained that when she records 'clots', she means coagulated blood.

203. After the oral evidence at the inquest, further enquiries were made with Noosa Private Hospital and the cleaner who was on shift at the time, Mr Andrew McKechnie, provided a statement dated 24 July 2015. Mr McKechnie stated that he did not see Summer vomit the blood but he recalls pushing the green buzzer that opens the doors to let Ms Shoesmith, Summer, and Summer's brother into the hospital at around 2:00am. He stated that he recalls thinking that Summer must have had a large nosebleed, because she had blood under her nose and around her mouth.

204. Mr McKechnie stated that he looked at the mess, then went back into the hospital's dirty utility room to get a mop and bucket and a few minutes later, he returned and cleaned up the mess. He didn't have a close look at it because it represented a hazard and he promptly cleaned it. He said the colour of the blood was that of a "nosebleed – red". He noticed some lumps in it, and would estimate the pool on the concrete as about 30cm in diameter. He described the lighting in the area as "subdued". The light wasn't bright or strong, but adequate to clean up.

205. Dr du Plessis' evidence that he observed the blood ought to be accepted, noting though that his estimation of time does not match up with the cleaner's. Ms Shoesmith's perception that the blood was bright red is not the perception that Dr du Plessis had. I accept Counsel Assisting's

submission that if Dr du Plessis thought the blood was bright red (arterial), it is highly likely he would have taken immediate action.

Second presentation to the Noosa Private Hospital for observation (from around 2:05am to 6:30am)

206. Dr du Plessis stated that he re-assessed Summer's condition upon re-presentation. Ms Shoesmith agreed that Dr du Plessis spoke to her at length and took another history from her at the time.

207. At this time, a 24-Hour Fluid Balance Chart was commenced by RN Conlon to record *output only* (ie. the vomits), no inputs (ie. water).

208. In oral evidence, Dr du Plessis said that as part of his re-assessment, he re-examined Summer's nose and throat and determined that there was no active bleeding. He was still of the opinion at the time that the vomit of blood was from Epistaxis and he reassured Ms Shoesmith of this.

209. Dr du Plessis decided to keep Summer in a monitored bay in the Emergency Department for ongoing observation. Dr du Plessis explained in oral evidence that his main concern at the time was that Summer had vomited and he wanted to ensure that the vomiting settled down.

210. At 2:15am, Summer was administered 2mg of Zofran under the tongue for nausea by RN Jessep, as ordered by Dr du Plessis.

211. Summer was observed for a period of around four and a half hours (from about 2:05am to 6:00/6:30am). Ms Shoesmith said that Summer slept the whole time during the observation period, except for when she woke up to vomit. Ms Shoesmith says that her son was colouring in at the end of Summer's bed and didn't sleep. She rejected the suggestion by the hospital's legal representative that her son was playing or interacting with Summer during the observation period.

Fourth vomit of blood (around 3:00am)

212. The next recorded vomit by RN Conlon in the 24-Hour Fluid Balance Chart was at 3:00am. The estimated volume was 150ml. The description was "blood stained". This appears to have occurred in a vomit bag, meaning that more reliability can be placed on this estimation, although RN Conlon stated that she tends to over-estimate rather than under-estimate. RN Conlon stated that she would estimate that no more than a quarter of the vomit was blood. She stated that the blood was not purely fresh blood because if it were, she would have taken further action.

213. RN Conlon stated that she recalls that Dr du Plessis did see the 3:00am vomit. Ms Shoesmith and Dr du Plessis both said that the 3:00am vomit was dark red in colour. Ms Shoesmith did not consider the 3:00am vomit to be a large vomit. She estimated the volume of the 3:00am vomit to be around a quarter of the size of the vomit on the dining room chair at home.

214. Dr du Plessis re-assured Ms Shoesmith again that the vomit of blood was from Summer swallowing the blood from her earlier nosebleed.

215. Just after the 3:00am vomit, RN Jessep administered 2mg of Zofran under the tongue to stop nausea and vomiting, as ordered by Dr du Plessis.

Was there another vomit of blood at around 4:00am?

216. Ms Shoesmith says that Summer vomited blood again into a vomit bag at around 4:00am and that it was about the same volume and colour as the 3:00am vomit. She thought the male nurse came in to look at it but couldn't recall whether Dr du Plessis came in.

217. Neither Dr du Plessis nor any of the nurses on shift at the time who cared for Summer could recall a vomit at 4:00am. There was also no record of a 4:00am vomit in any of the medical records. Nor was there a record of any Zofran being administered at this time (unlike the 2:00am and 3:00am vomits). Also, given that Ms Shoesmith and Summer were in a bay opposite the nursing station, and Summer was being checked on regularly, this is unlikely to have gone unnoticed and unrecorded.

218. I accept Counsel Assisting's submission that it is unlikely that Summer vomited at around 4:00am.

Fifth vomit of blood (around 6:00am)

219. Dr du Plessis' notes record a vomit of 10ml in the morning of "old blood" but the time is not stated. Dr du Plessis recalled in oral evidence that Ms Shoesmith showed him this vomit in a hand towel at around 6:00am. Both Dr du Plessis and Ms Shoesmith agreed in oral evidence that the blood in the 6:00am vomit was dark red. The vomit was not recorded in the 24-Hour Fluid Balance Chart.

220. A statement was obtained from RN Clayton Jessep dated 1 July 2015 and a supplementary statement dated 24 July 2015. He was on shift until 7:15am on Sunday 30 June 2013. He recalls observing small amounts of vomit that was smeared on some tissues at around 6:00am. He documented it in the ED Progress Notes. He recalls that the colour of the blood was "red, and it looked fresh". RN Jessep recalls questioning Dr du Plessis if there could be something more serious (other than Epistaxis), and Dr du Plessis advised he was going to contact the Paediatrician at the Nambour General Hospital, which he did.

221. Dr du Plessis said in oral evidence that it was the 6:00am vomit that prompted him to phone the Paediatric Registrar at the Nambour General Hospital to get advice as to whether it would be safe to discharge Summer.

Dr du Plessis' phone consultation with a Paediatric Registrar from the Nambour General Hospital (around 6:00am)

222. The Noosa Private Hospital does not have Paediatricians on staff. Dr du Plessis therefore sought advice from a Paediatric Registrar, Dr Timothy Funaki, at the Nambour General Hospital. Although a time is not recorded

in his notes, Dr du Plessis recalled that this was around 6:00am (just after the 10ml vomit).

223. Dr Funaki provided a statement dated 21 May 2015. He did not keep any notes of the information he received from Dr du Plessis or the advice he provided. He could not recall the time of the phone call. Dr Funaki stated that it was not usual clinical practice to document advice given over the phone to another facility like Noosa Private Hospital, as the patient was not a patient of the Nambour General Hospital and may not have had a medical record to file the documentation. Dr du Plessis kept notes of Dr Funaki's advice, but not of the information that was provided to him in order to obtain the advice.

224. Dr Funaki had no independent recollection of his involvement in the treatment of Summer. He provided his statement based on the Noosa Private Hospital medical records for Summer.

225. Dr Funaki was under the impression that Summer had had an earlier nosebleed followed by a few vomits of blood. It is unlikely that Dr Funaki had a full appreciation of the volume, colour and consistency of those vomits. It would also appear that the number of vomits had been understated, given that Summer at that stage had had 1 – 2 vomits of blood at home also.

226. It is unknown whether Dr du Plessis provided the raw data or simply summarised Summer's vital signs as "normal" when he spoke with Dr Funaki. Dr du Plessis said in oral evidence that he would usually provide the actual numbers. It is unlikely, however, that Dr Funaki was fully aware that there was a rising trend in Summer's heart rate over a period of time in which she had been sleeping. It is unknown whether he was aware that Summer's heart rate was at the higher end of normal (around 133 - 137).

227. On the basis of the information conveyed to him, Dr Funaki was satisfied for Dr du Plessis to send Summer home, with advice to Summer's Mother that if Summer's condition worsened, or if she had recurrent nose bleeds and/or vomiting, she was to promptly return to the hospital. No blood tests were required at that time, however, if she did re-present, Dr Funaki advised that blood tests would be required.

Second discharge from the Noosa Private Hospital (around 6:30am)

228. Dr du Plessis stated that he discharged Summer and provided the above advice to Ms Shoesmith. Ms Shoesmith says she was given a vomit bag and a Zofran tablet in case Summer vomited again. They departed the Emergency Department between 6:30am and 7:00am

229. RN Jessep, who had previously raised a question with Dr du Plessis as to whether Summer could have had something more serious than Epistaxis after the 6:00am vomit, stated that he was reassured by Dr Funaki's clearance to discharge Summer.

Should Dr du Plessis have reconsidered his diagnosis of Epistaxis?

230. Given the number of vomits containing blood, and Summer's rising heart rate, Dr du Plessis was questioned by Counsel Assisting as to whether he accepted that he had made a diagnosis of Epistaxis presumptively rather than based on diagnostic findings.

231. Dr du Plessis emphasised that at the time, he really thought the vomiting was from a nosebleed but in retrospect, he accepts that he made a tragic misdiagnosis.

232. Dr du Plessis conceded that in hindsight the dried blood in the nostrils that he observed was probably from vomiting through the nose.

233. Dr du Plessis said that if he had considered Haematemesis as a possibility back then, he would most likely have sent Summer much earlier to Nambour General Hospital for observation, or even have phoned a Gastroenterologist at the Royal Children's Hospital.

234. Dr du Plessis acknowledged that as a result of this incident, he has learnt that he should not fixate sometimes on one specific diagnosis.

Summer's arrival home (around 7:00am)

235. Ms Shoesmith, Summer and Summer's brother arrived home by taxi between 6:30am and 7:00am. Ms Shoesmith described arriving home and settling Summer down to sleep.

Dr du Plessis' handover with Dr Carita Shield (between 7:30am – 8:00am)

236. Dr du Plessis finished his shift and Dr Carita Shield took over at 8:00am. In the 30 minutes prior, they conducted a hand over. Dr du Plessis did not provide a formal hand over in relation to Summer's case (presumably because Summer had discharged). He did, however, provide a brief summary to Dr Shield in case Summer presented again. This information was not recorded and Dr Shield can only recall the nature of the information that was communicated to her.

237. It is unknown whether Dr du Plessis' hand over to Dr Shield contained any factual inaccuracies. Dr Shield was under the impression from the information passed to her that there had only been a little bit of vomit, containing gastric contents. She was surprised in the inquest that the volume of the vomits during the observation period at hospital alone was estimated as 360ml. Dr Shield said she did not consider that to be a little bit. Dr du Plessis was not asked about the information he provided to Dr Shield in terms of the volume of vomit.

Sixth vomit of blood (around 8:10am)

238. Ms Shoesmith stated that about one hour after they got home and Summer went to sleep, Summer sat up on the lounge and projectile vomited bright red blood onto the floor. Ms Shoesmith stated that the blood looked different to the blood she vomited at the hospital because it was brighter red. Then Summer tried to stand up and collapsed onto the floor beside the lounge.

Second '000' call (8:13am)

239. Ms Shoesmith again phoned '000'. The call was logged by QAS as having been received at 8:13am. The information provided to the operator by Ms Shoesmith was that Summer had been at hospital, had been discharged and was now vomiting bright red blood.

240. The ambulance was dispatched from the Coolum station under Code 1 conditions (time critical - lights and sirens) and arrived on scene at 8:20am (within 7 minutes of the 000 call).

241. Whilst the ambulance was on its way, the operator asked Ms Shoesmith if she had her door unlocked and this appears to have prompted Ms Shoesmith to take Summer outside onto the front yard. The operator instructed Ms Shoesmith to put Summer into the recovery position and to clear her airway and listen for breathing. Ms Shoesmith confirmed that Summer was breathing.

242. On arrival, Summer was lying on the grass near the footpath. She was conscious and Paramedic Suzanne Dickson asked Ms Shoesmith to pick her up. Summer appeared weak, pale and flaccid. Ms Shoesmith informed Paramedic Dickson that they had been up at the hospital overnight with a nose bleed and vomiting.

243. Paramedic Dickson requested Ms Shoesmith to carry Summer into the ambulance. This occurred within one minute of the paramedics arriving at the scene. Their priority was to transport Summer to hospital urgently, so they didn't go inside the home to observe the nature and extent of the blood. Paramedic Dickson observed dried blood over Summer's torso. She couldn't recall whether Summer's mother told her that Summer had vomited about one cup of blood or whether this was an estimate of the volume of blood she observed on Summer's torso. The volume of the blood was recorded in the QAS EARF as approximately one cup of blood (250ml). They did not report on the bright (arterial) nature of the blood.

244. It was recorded that Summer was not particularly tachycardic, but she was pale, having an altered level of consciousness. Blood pressure was not recorded en route. Summer was given oxygen therapy.

245. The hospital was phoned en route and on arrival, a male nurse met the paramedics outside.

Third presentation to the Noosa Private Hospital (8:26am)

246. Summer arrived at the Noosa Private Hospital Emergency Department at 8:26am (6 minutes after departure from Summer's home).

247. At triage, Summer's weight was recorded as 12kg. Summer was triaged as a 'category 2 patient' (able to wait 10 minutes). An initial set of observations was recorded at 8:40am: blood pressure 70/50 (hypotensive), heart rate 150 (tachycardic), hypothermic, and an altered level of consciousness (GCS 14, responding to voice).

Management by Dr Carita Shield

248. Summer was promptly assessed by the new Medical Officer on shift at the Emergency Department, Dr Carita Shield. Dr Shield provided three statements dated 30 April 2015, 25 May 2015 and 30 June 2015 and provided oral evidence at the inquest. Dr Shield presented as an honest and reliable witness. Her clinical notes were extensive.

249. Dr Shield's notes show that Ms Shoesmith had reported to her that in the past two weeks, Summer had a sore stomach at times and dark bowel motions. Summer was seen by her GP and diagnosed with Giardia. Dr Shield could not recall whether "dark bowel motions" were Ms Shoesmith's exact words. She said that it was possible that she had used the words "black poo". Dr Shield said that this information was "volunteered" by Ms Shoesmith very early on and that Ms Shoesmith had said to her that she went to the GP because of the above symptoms. Dr Shield thought that the dark stool was unusual, so she asked some further questions about it.

250. Dr Shield promptly initiated further investigation and commenced management shortly afterwards, including insertion of two IV cannulas, taking of blood samples, and a cross match and fluid resuscitation. The efficiency and efficacy of the initial response by Dr Shield and the Clinical Nurses assisting her, CN Sonya Bassa and CN Bryce McCarthy in the circumstances is commended.

251. Dr Shield's initial impression was that Summer had a gastrointestinal bleed and the dark stools Ms Shoesmith had described was Melaena. Dr Shield explained in oral evidence that she also continued to accept that there was a past history of Epistaxis as diagnosed by Dr du Plessis, because she had no reason to doubt it. It was, however, clear to her that there was something more serious than a simple nosebleed happening.

252. It does not appear that Dr Shield was aware that Summer's vomit at home was of 'bright red blood'. This information would not have been passed onto her by the ambulance crew because they did not witness it and did not record it in their notes.

Dr Shield's phone consultation with a Paediatric Registrar from the Nambour General Hospital (around 8:50am)

253. Dr Shield phoned the new on-call Paediatric Registrar on shift at the Nambour General Hospital, Dr Herminia Narvaez, at around 8:50am. Dr Shield estimated that the phone call would have gone for around 10 minutes. The purpose was to discuss Summer's case and to arrange possible transfer to the Nambour General Hospital.

254. Dr Narvaez provided a statement dated 20 May 2015. Dr Narvaez stated that she had an independent recollection of the phone call. However, Dr Narvaez did not keep a note of the phone call. According to Dr Narvaez, the phone call occurred prior to Dr Shield inserting a cannula or taking any bloods. Nothing turns on this fact. However, it would appear that the phone call in fact took place after Summer had already been cannulated, in

accordance with Dr Shield's primary statement and the statements of the relevant nurses – CN Sonya Bassa and CN Bryce McCarthy. Dr Narvaez's impression was that Summer had an upper gastro-intestinal bleed and that urgent action was required. She provided general advice to Dr Shield and advised her to contact Retrieval Services Queensland to co-ordinate retrieval to the Royal Children's Hospital.

255. Dr Shield did not accept, in oral evidence, that given the seriousness of Summer's condition, she should have bypassed phoning the Paediatric Registrar at the Nambour General Hospital and gone straight to contacting Retrieval Services. Dr Shield explained that at the time she contacted the Paediatric Registrar, she still didn't have the full blood results back yet, so she did not have the full picture as to how serious Summer's condition was.

First Careflight retrieval call (9:01am)

256. As a result of Dr Narvaez's advice, Dr Shield made a phone call to retrieval services at 9:01am. The phone call included Retrieval Coordination, the Paediatric Intensive Care Unit Fellow (PICU), and in the later part of the call, the Paediatric Gastroenterologist and went for 21 minutes.

257. I obtained the audio recordings of seven retrieval phone conversations made between 9:01am and 12:45pm. The content of some of those conversations is summarized below for the purposes of demonstrating the impact that the earlier (incorrect) diagnosis of Epistaxis (and the underestimation of Summer's vomits of blood) had in terms of the communication and management of Summer's retrieval. However, none of this is likely to have made any difference to the end result.

258. In the call at 9:01am, Dr Shield clearly states in her initial introduction to the Retrieval Coordinator that Summer was "quite unstable" and "hypotensive". She then described her blood loss/ condition as "grumbling for a few weeks", describing the Melaena, and a "small vomit" overnight, followed by vomiting a cup of "fresh blood" that morning.

259. In introducing Dr Shield to the PICU fellow, the coordinator described Summer as being "a bit tachy(cardic)" but did not relay the information that she was hypotensive. Dr Shield then summarised the case again for the PICU fellow, the salient (some incorrect) points being; Summer had had a "small Epistaxis" and a 5 ml vomit of old blood overnight, a further large vomit of old blood and then some fresh blood at home this morning, haemoglobin was 78 (low), blood pressure was 75/42, heart rate was 120, she was pale with sluggish capillary refill, that she had given Summer a 500ml fluid bolus, and that after the bolus her heart rate and blood pressure had not altered.

260. The significance of the hypotension, which is a late sign of circulatory shock, appears not to have been recognised by the PICU fellow. He did not immediately suggest blood resuscitation. He did suggest an acid-lowering agent (on the assumption that bleeding was related to gastric ulceration) and asked Dr Shield whether Summer needed retrieval.

261. Working on a presumed diagnosis of unexplained upper gastrointestinal bleeding, the PICU fellow requested that the Paediatric Gastroenterologist join the call. Dr Shield again repeated the history and management. The Paediatric Gastroenterologist asked whether Summer had a palpable spleen (being a marker for undiagnosed portal hypertension which can cause bleeding oesophageal varices). Dr Shield reported that Summer did not have a palpable spleen and the Paediatric Gastroenterologist commented that this was an odd story and questioned whether she was sure that the Epistaxis wasn't just "vomit out the nose**"**. It is significant to note that this appears to have been the *first* time that the earlier diagnosis of Epistaxis had formally been questioned.

262. The concern of the retrieval team at this point was whether Summer had an underlying low platelet count (also related to possible portal hypertension) and the suggestion was that she might be further stabilised using packed cells, other blood products and possibly an Octreotide infusion (which can slow gut circulation and reduce bleeding) prior to transfer.

263. Antibiotics were recommended. Ear Nose and Throat (ENT) colleagues were requested to be notified so that they could be present when the endoscopy was performed (because of the history of Epistaxis). Blood transfusion and fresh frozen plasma (to improve coagulation) was suggested by the PICU fellow towards the end of the phone conversation in the event of further bleeding.

264. The Careflight retrieval team was tasked at 9:35am. The initial plan was that Summer would go to the Royal Children Hospital's Emergency Department and the senior Emergency Department clinician was contacted. Summer was described again as having had an Epistaxis, followed by two episodes of Haematemesis (old and then fresh blood), that her haemoglobin was 78, blood pressure 75/42, and that she had had borderline perfusion and "then had half a litre of normal saline". It seems from the way that this was stated, that Summer's failure to clinically respond to the 40ml/kg bolus of normal saline had not been fully appreciated by the PICU fellow.

265. The diagnosis of Epistaxis was again questioned by the Emergency Department clinician. The PICU fellow commented that Summer had had the Epistaxis "last night but not today" (with the implication that she was not actively bleeding). The consensus at the end of the conversation was that Summer was 'basically stable'.

266. According to Noosa Private Hospital nursing notes, Summer was transfused with two units of packed cells between 10:00am and 11:15am.

Arrival of Director of Emergency Department, Dr Van Puymbroeck (around 10:30am)

267. At around 10:30am, the Director of Emergency at the Noosa Private Hospital, Dr Van Puymbroeck, began his shift. He replaced the usual 10:00am doctor who had called in sick.

Arrival of the Careflight retrieval team (around 10:40am)

268. The Careflight retrieval team departed by helicopter at 9:55am and landed at the Noosa Private Hospital helipad at 10:28am. They were at Summer's bedside at about 10:40am. Upon arriving, they recognised the need for escalation of care and resuscitation, and telephone a situation report via retrieval services at 11:19am.

Seventh vomit of blood (around 10:40am)

269. At around 10:40am (the same time the Careflight retrieval team arrived), Dr Shield and Dr Van Puymbroeck were conducting a hand over and discussing patients near Summer's bedside; Summer was sitting up having a blood transfusion; when she suddenly collapsed and had a large vomit of blood (estimated by Dr Shield in her statement to be two cups (500ml)).

270. This large vomit was not recorded in the Fluid Balance Chart. Dr Shield explained in oral evidence that it was not recorded because they were occupied with the emergency. Dr Shield and Dr Van Puymbroeck described the vomit in oral evidence as "fresh blood" and "bright red". This is supported by Ms Shoesmith's evidence and the triage notes. It is assumed this was arterial blood, given the nature of Summer's pathology.

271. Summer was appropriately intubated (airway protection in the context of an altered level of consciousness and ongoing large volume Haematemesis) and ventilated.

272. This was reported to the PICU fellow in the 11:19am phone call. At that time, the second unit of blood was running and fresh frozen plasma, vitamin K, and Octreotide was again discussed. Summer's vital signs were not reported at that time. The last blood pressure of 75/43 was taken at approximately 11:00am and a heart rate of 163 (according to the Noosa Private Hospital nursing observations).

Discovery of the button battery by x-ray (around 11:30am)

273. A routine post intubation chest x-ray was taken soon after the intubation (at around 11:30am) and revealed a 2cm diameter button battery sitting in Summer's mid oesophagus.

274. At 12:00pm, the PICU fellow was informed that the chest x-ray had shown a button battery in the mid oesophagus. Summer's carbon dioxide was said to be 35-40mmHg. A blood gas taken at 11:55am showed extreme biochemical de-compensation with a pH of 6.75 pCO2 of 98 and a lactate of 11, reflecting a profound mixed metabolic and respiratory acidosis, which Dr Barker would attribute to hypovolemic shock.

275. As a result of the discovery of the button battery, the Senior PICU fellow activated the relevant theatre teams at the Royal Children's Hospital: Anaesthetic Registrar and Consultant; Paediatric; Surgical; ENT; and Gastroenterology Consultants.

Departure from the Noosa Private Hospital (12:35pm)

276. The retrieval team departed the Noosa Private Hospital at about 12:35pm.

277. Ventilation appears to have been uncomplicated. Transfusion of packed cells continued in the helicopter. The retrieval team were unable to record a blood pressure throughout the flight but they reported that Summer still had a palpable femoral pulse.

278. However, during the flight, Summer had significant fresh red blood loss welling up and out of her mouth and nose.

279. Summer was being manually ventilated shortly before landing at approximately 1:00pm.

Arrival at the Royal Children's Hospital (1:00pm)

280. Summer went into cardiac arrest upon disembarking the aircraft. Cardiopulmonary resuscitation (CPR) was commenced, as she was urgently wheeled into the operating theatre along the corridors of the Royal Children's Hospital.

The attempt to control the bleeding in the operating theatre was unsuccessful (1:10pm – 1:45pm)

281. Summer was in the operating theatre by 1:10pm, where a large team of paediatric specialists were waiting. Dr Peter Borzi performed a thoracotomy operation (incision to open the chest cavity). Dr Borzi provided two statements dated 15 May 2015 and 4 June 2015.

282. The surgeons located the approximate site of the aorta injury and could palpate the button. However, the fistula was in an inaccessible location behind the arch of the aorta.

283. They attempted to control the aortic bleeding by passing a ligature above and below the arch of the aorta. However, the situation was irreparable, with a large haematoma around the oesophagus which, when disturbed, bled heavily. No sooner than the blood transfusion was given, it was lost from the severe bleeding. External cardiac massage continued but Summer remained in cardiac arrest.

284. The Paediatric Intensive Care Specialist, Dr Julie McEniery, provided two statements dated 25 May 2015 and 30 June 2015. Dr McEniery advised that a cardiopulmonary bypass as a strategy was discussed but it was agreed there was no hope of achieving this given the size of the aortic defect

Summer was pronounced deceased on Sunday 30 June 2013 (1:45pm)

285. After discussion between the team members, a team decision was regretfully reached that the situation was futile. Resuscitation was ceased and Summer was pronounced deceased at 1:45pm.

Autopsy results

286. A full internal autopsy was conducted by a forensic pathologist, Dr Nadine Forde on 2 July 2013. The autopsy report was concluded on 20 August 2013.

287. Toxicology testing was also conducted and a Certificate of Analysis was completed on 20 August 2013. No drugs (other than an aesthetic agent used during treatment) or alcohol were detected.

288. Summer's weight was recorded at autopsy as 11.6kg.

289. The autopsy examination showed a partially corroded lithium button battery in the mid oesophagus with erosion through the oesophageal wall into the thoracic aorta (large artery leading from the heart), just distal to the branch of the subclavian artery, forming a fistula (tract) between the two structures. The defect within the aortic wall measured approximately 4mm in diameter. There was blood within the surrounding soft tissues and also within the chest cavity. A thoracotomy incision was noted. There was also a large amount of blood within the stomach and distal gastrointestinal tract.

290. Dr Forde commented that the oesophagus and aorta showed acute inflammation and there was fresh haemorrhage consistent with an acute bleed. However, the chronic inflammatory changes and evidence of healing (granulation tissue) were consistent with the battery being present for *at least* a few days prior to Summer's collapse on 30 June 2013. Specific timing as to when the battery was ingested was difficult to determine.

291. Dr Forde commented that the perforation resulted in catastrophic haemorrhage from the aorta (the main artery leading from the heart) into the gastrointestinal tract.

292. Dr Forde was of the opinion that the medical cause of Summer's death was:

    1(a). Haemorrhage, due to, or as a consequence of
    1(b). Aorto-oesphageal Fistula, due to, or as a consequence of
    1(c). Oesophageal Foreign Body (Battery).

Limited investigation by Noosa Private Hospital

Initial reporting

293. At 11:23am on 1 July 2013, the then Director of the Emergency Department of the Noosa Private Hospital, Dr Eric Van Puymbroeck, inputted some information regarding Summer's death into a form termed in Ramsay Health's Incident Management System as a 'Comprehensive Report'. I accept Counsel Assisting's submission that the information that was inputted into the system by both Dr Van Puymbroeck and the Clinical Department Manager at the time was anything but comprehensive.

294. There were only two paragraphs of information in the entire 'Comprehensive Report' of any substance. No mention was made of Summer's three

presentations and two discharges from the hospital prior to her death. The number of vomits containing blood at the hospital and at home were misrepresented. There was also no recognition in the report that Epistaxis was in fact a misdiagnosis, and there was no effort to analyze whether that misdiagnosis was reasonable in the circumstances.

Dr Van Puymbroeck's discussion with Dr Spall

295. Dr Van Puymbroeck made an entry in the system at 4:08pm on 1 July 2013 stating that he had discussed the issues and the patient with the GP (Dr Spall) and Dr Spall had been invited to attend the debriefing. Dr Van Puymbroeck kept no record of what was discussed with Dr Spall and both doctors say they cannot recall the detail of their discussion. Dr Van Puymbroeck said in oral evidence that Dr Spall had called him because he was upset after hearing that Summer had presented to the Noosa Emergency Department after he had diagnosed Summer with Giardia and he questioned what happened. Dr Spall explained in his statement dated 10 August 2015 that he never attended the debriefing because he didn't speak to Dr Van Puymbroeck again and was never informed of the time, date or place of the debriefing meeting.

Direction by Ramsay Health executives

296. On 17 July 2013, Ramsay Health executives made two entries in the Incident Management System. One entry directed that a 'Mortality Review' be conducted, and the other entry noted that the incident had been reviewed at a weekly Ramsay Group Clinical Governance Unit meeting, and the incident was to be downgraded from 'Ramsay Risk Code 1' (deceased patient) to 'Ramsay Risk Code 2' (deteriorating patient) because Summer did not die at the Noosa Private Hospital. An incident categorised as Risk Code 1 would have warranted immediate action and active management, whereas an incident categorized as Risk Code 2 only required senior management attention or regular monitoring.

What did Dr Van Puymbroeck's review entail?

297. After a number of further requests for information (which were responded to by the Noosa Private Hospital promptly) and the oral evidence at the inquest of both Dr Van Puymbroeck and the current Director of Clinical Services at the Noosa Private Hospital, Ms Judith Beazley, the following information has been ascertained.

298. Dr Van Puymbroeck and Ramsay Health executives appear to have failed to recognise the potential conflict of interest in allowing him to conduct the review of this incident, given his role in the care of Summer, and the fact that his subordinates were the doctors who cared for Summer beforehand.

299. Dr Van Puymbroeck agreed in oral evidence that it was open to the Noosa Private Hospital to refer the matter to an external expert for review or to another person within the hospital to review but this did not occur. He acknowledged the dangers of 'Caesar judging Caesar' and encouraged a different approach in the future.

300. Dr Van Puymbroeck says that he conducted a review of all the medical records, yet his summary of the incident in the 'Comprehensive Report' seems to have come mostly from his own medical notes. He did not, for example, appear to have taken account of the fact that Dr Shield had taken a full history and recorded that Summer had dark stools *two weeks* prior.

301. Dr Van Puymbroeck held a 'debriefing session' about a week after Summer's death, which included the doctors and nurses involved in Summer's care, the ambulance crew who retrieved Summer from her home, and a Psychologist. Dr Spall was invited to attend but did not attend. The purpose of the debriefing session was primarily to ensure that those involved in Summer's care had the appropriate support services. No records were kept of the debriefing session.

302. It was Dr Van Puymbroeck's view at the time that the 'root cause' was that Summer ingested a button battery and because the treating medical practitioners did not know about this, nothing more could have been done.

303. Dr Van Puymbroeck said in oral evidence that he interviewed each doctor individually as part of his review of the incident and that he made enquiries with the Royal Children's Hospital and Retrieval Services to determine what happened after Summer was transferred from the Noosa Private Hospital. Again, there was no record of any interviews having been conducted. Dr du Plessis and Dr Shield were not questioned about their participation in the debriefing session or the interview process.

304. Ms Beazley said that whilst open and frank disclosure is often encouraged in such meetings and interviews on the basis that limited records are kept, she would have expected that a record should have been made.

305. Dr Van Puymbroeck also held a 'Morbidity and Mortality Meeting' in July 2013. The existence of this meeting was not brought to my attention until 3 July 2015. This is presumably because no records exist of this meeting and it is unclear who attended the meeting or what was discussed.

306. Dr Van Puymbroeck conducted a 'Mortality Screening Review' on 22 July 2013. This was really a form, which did not entail any analysis, but which listed two recommendations that:

    a. A protocol be developed regarding fresh frozen plasma and rapid transfusion protocol (this was implemented in July 2014); and

    b. That written discharge information is given to families.

    c. Neither of the issues above was considered by Dr Van Puymbroeck or the Noosa Private Hospital as having contributed to Summer's death.

307. In addition, information sheets were circulated to staff to raise awareness of the dangers of battery ingestion and remind them of the differential diagnosis.

308. No further investigation was recommended or conducted by the Noosa Private Hospital until the month prior to the inquest in 2015.

309. I accept Counsel Assisting's submission that the initial investigation, review, (and recording of the initial investigation and review) in relation to Summer's death by the Noosa Private Hospital and Ramsay Health was inadequate.

Recent action taken by the Noosa Private Hospital

310. The current Director of Clinical Services, Ms Beazley, provided seven statements between May and July 2015. The first six statements were provided in response to a number of questions by Counsel Assisting on my behalf. The seventh statement was provided by Ms Beazley in a proactive effort to fill in some of the information gaps. Ms Beazley did not commence in the role until November 2014.

311. Ms Beazley was present for the duration of the inquest and was taking note of any possibilities for improvement.

312. Ms Beazley explained that in May 2015 (the month before the inquest), she conducted a 'Systems Review' of Summer's death to identify any opportunities for learning and improvement. Ms Beazley denied that this had anything to do with pressures placed on the hospital as a result of the inquest. Ms Beazley said she was just a "nosey person" and "needed to know what happened". Whatever the case, I accept Counsel Assisting's submission that it is clear that Ms Beazley is now taking appropriate action on behalf of the Noosa Private Hospital and Ramsay Health in relation to this incident and she should be commended for her efforts.

313. Relevant action that has now being taken by the Noosa Private Hospital, as a direct result of Summer's death, includes:

    a. A reminder to staff of the requirement to weigh all children who present to the Emergency Department;

    b. A review of the assessment and documentation processes for a sick child who presents to the Emergency Centre;

    c. A review of the feasibility of telemedicine for consultations between Noosa Private Hospital health practitioners and Nambour General Hospital health practitioners; and

    d. Utilisation of Summer's case as a Case Study as part of the training for all emergency centre staff.

314. A number of incidental actions have also taken place such as:

    a. the funding of more Emergency Medicine specialists;

    b. implementation of Queensland Health's Childhood Early Warning Tool

(including mandating blood pressure measurements for all children who present to the Emergency Department); and

c. the introduction of medical students as scribes to assist doctors with note taking across as many shifts as possible.

315. Ms Beazley also stated that the Noosa Private Hospital strives to improve all aspects of the care it provides, and she was supportive of considering a number of other suggestions discussed during the inquest.

Dr Ruth Barker's expert review

316. Dr Barker produced two reports dated 5 March 2015 and 29 May 2015. The former report discussed issues regarding button batteries generally, whereas, the latter report was focused on a review of Summer's care. Dr Barker was also present for the entire proceedings at the inquest and provided oral evidence at the conclusion.

317. Dr Barker's overall assessment of the clinical diagnosis and medical treatment by each of the doctors involved in Summer's care is as follows. I accept Dr Barker's assessment.

Dr Andrew Spall

If Dr Spall didn't know about the black stools

318. If Dr Spall didn't know about the black stools, in the context of Summer looking well, and presenting with a history of crampy abdominal pain and loose bowel motions, Dr Barker is of the opinion that:

a. It was not unreasonable to treat Summer for Giardia 'on speculation' (ie. without a stool culture test), given that Dr Spall was practicing in an area where Giardia is reasonably common and Ms Shoesmith had recently had Giardia.

b. It would have been unreasonable, however, to treat Summer for Giardia 'on speculation' if a quick and reliable stool culture test was available at the time. (It is noted that the new Multiplex PCR testing with close to 100% accuracy was not available to Dr Spall until 21 August 2013).

c. When treating for Giardia on speculation with Summer's symptoms, there was still a reasonable differential, which should have been considered by Dr Spall, including other causes of gut pathology like campylobacter or salmonella. This would usually have triggered a question to Ms Shoesmith as to whether there was blood in Summer's stools.

d. When presented with Ms Shoesmith reporting that Summer had crampy abdominal pain, and given the issues associated with young children isolating pain, Dr Spall should have interpreted this as Summer having intermittent visible discomfort or intermittently saying

that her stomach was sore. Dr Spall should therefore have asked further questions such as how Summer was eating and if there was anything that seems to have been triggering the abdominal pain. This is because sometimes pain occurs post eating or prior to moving bowels, or with loose bowel motions. Such information tends to be more indicative of an infective cause. This may have led to a discovery that Summer was experiencing pain when going to the toilet, which would then have led to Dr Spall to looking for blood in the stools.

If Dr Spall discovered the black stools

319. If Dr Spall discovered that Summer had black stools, Dr Barker is of the opinion that he should have:

    a. performed a rectal examination or arranged a stool sample to be collected and sent for testing in a lab; and

    b. If it was established that Summer had Melaena, Dr Spall should have referred Summer to an appropriate paediatric service (such as the Paediatric Gastroenterology Unit at the Royal Children's Hospital) for consideration for an endoscopy to look for an upper cause of Gastro Intestinal blood loss.

320. Dr Barker is not of the opinion that a referral to the Paediatric Gastroenterology Unit at the Royal Children's hospital would have precipitated an urgent endoscopy or a chest or stomach X-ray. This was not part of the standard protocol then or now.

321. It was Dr Barker's opinion that even if Dr Spall referred Summer to the Royal Children's Hospital due to Melaena back on 17 June 2013, the battery would not have been revealed until the performance of an endoscopy. This may not have occurred before Summer's major arterial aortic bleed at about 8:10am on 30 June 2013.

322. Dr Barker went on to explain that even if an endoscopy was carried out before the aortic bleed, the battery may still have been found proximate to the aorta and removal of the battery may have led to a delayed bleed. If Summer had her major arterial aortic bleed at the Royal Children's Hospital, there would have been a small chance she could have survived. However, her chances of survival would have been very slim.

Dr Spall's notes

323. Dr Barker was of the opinion that Dr Spall's notes in relation to his consultation with Summer on 17 June 2013 were inadequate because they:

    a. failed to document his positive and negative findings;

    b. failed to sufficiently outline his history, assessment and diagnostic thinking; and

    c. failed to outline his general instructions to Ms Shoesmith.

324. Dr Spall should have kept a note of the information provided to him by Ms Shoesmith that Summer was improving on 21 June 2013.

325. Dr Barker was of the opinion that Dr Spall should have taken the time to keep a note of his meeting with Ms Shoesmith in the two weeks after Summer's death. This was not mischievous and it would have been obvious that it was a note taken after Summer's death. This was important, given that the context of his meeting was in relation to a patient of his who had died.

Dr Jacobus du Plessis – Noosa Private Hospital

Dr du Plessis' notes

326. Dr Barker was of the opinion that Dr du Plessis' notes were difficult to understand in that it was impossible to tell how much he did prior to discharging Summer on each occasion and how much information was a composite summary of a series of a set of questions and investigations over what turned out subsequently to be around a four and a half hour period.

If Dr du Plessis discovered the black stools

327. If Dr du Plessis discovered that Summer had black stools, Dr Barker was of the opinion that he should have followed the same process as outlined above for Dr Spall.

Dr du Plessis should have had a wider focus when taking Summer's history

328. Dr Barker noted that the main focus of Dr du Plessis' history and consultation in relation to the diagnosis of Epistaxis seemed to focus around whether the bleeding could be attributed to a primary problem with coagulation (acquired or inherited), and in particular, platelet dysfunction (eliciting a history of bruising).

329. In Dr Barker's opinion, the skill of history taking is in framing a question that will answer what you need to know. Given that Summer had actually presented with Haematemesis, a more specific history of gastrointestinal blood loss would have been more appropriate.

330. Dr Barker is of the opinion that Dr du Plessis should have asked Summer's Mother about whether there had been any previous vomiting of blood, blood mixed in the bowel motions, or black tarry stools. This may have elicited the history of Melaena. Dr Barker is of the opinion that the narrow field of questioning by Dr du Plessis about previous bleeding issues and the negative response was falsely reassuring.

Should Dr du Plessis have discharged Summer within 15 minutes?

331. Dr Barker was of the opinion that Dr du Plessis' decision to discharge Summer within 15 minutes of arrival was unreasonable because:

a. Ms Shoesmith had called the ambulance in the middle of the night and Summer was transported to the hospital by ambulance;

b. Summer was only four years of age; and

c. It is good practice not to send young children or the elderly home in the middle of the night with a condition that could potentially promptly recur, like bleeding.

332. Dr Barker was, however, of the opinion, that Dr du Plessis' decision was adequate, given the provisional diagnosis of Epistaxis that he was working with, because he:

a. at least examined Summer's ear, nose and throat;

b. established that Summer had some dry blood around her nose; and

c. established that there was no retropharyngeal blood loss.

Dr du Plessis' discharge / re-presentation process

333. Dr Barker noted deficiencies in Dr du Plessis' discharge and re-presentation process. Dr Barker was of the opinion that it is good practice where a patient is discharged and then re-presents soon after, to record that as a discharge. The patient should then be re-triaged so they appear in the system as a second complete new presentation.

334. Dr Barker was of the opinion that it was misleading to have a record where Dr du Plessis observed Summer for around four hours, but didn't actually record that Summer had been discharged within 15 minutes of her initial presentation. (To be clear, it is not assumed that this was deliberately misleading by Dr du Plessis).

Dr du Plessis' management of Summer's second presentation

335. Dr Barker's opinion was that Dr du Plessis made his (incorrect) diagnosis of Epistaxis presumptively, rather than on diagnostic clinical findings. Her impression of Dr du Plessis' evidence was that he took reasonable steps to assure himself that the diagnosis that he was making was correct but he missed some subtle signs.

336. Dr Barker was of the opinion that if Dr du Plessis did not know about the Melaena, by Summer's third large vomit (at 3:00am), he should have been more alert to changing his diagnosis and questioning whether the bleeding was actually coming from the nose in the context of:

a. there being no post-nasal bleeding on all three occasions after each vomit. (Dr Barker was of the view that with the volume of blood that was coming back up out of the stomach, that Dr du Plessis should have expected to see ongoing post-nasal bleeding);

b. a rising trend in Summer's heart rate, whilst she was resting; and

c. a heart rate of 133 (to 137), which was at the high end of the normal range, bearing in mind that the guideline (of 90/95 – 140) is for a 1 – 4 year old age range.

337. It was submitted by the Noosa Private Hospital's legal representative that it was not established on the balance of probabilities that Summer was resting on each occasion that her heart rate was measured. It was pointed out that it was recorded in Summer's medical notes that Summer had vomited at or around the time of the second and third of the three sets of observations that were taken, at 3am and 6am. It was submitted that it is common sense that the heart rate can rise with activity such as vomiting as explained by Dr du Plessis in evidence and conceded by Dr Barker in cross examination.

338. I accept that it is possible that Summer's rising heart rate was because she had vomited at or around the time that her heart rate was measured the last two out of three times. However, the totality of the evidence does not support a conclusion that Summer was in any other way active at those times. Ms Shoesmith said that Summer was resting the entire time. Dr du Plessis said that each time he observed Summer, she was resting.

339. I also accept that it is quite possible that Summer's heart rate was rising due to reasons other than the activity of vomiting. The point is, Dr du Plessis and others did not appear to have recognised this subtle sign of a rising heart rate in the circumstances. Dr Barker advised that it was common practice for nursing staff who are taking a heart rate where a child is noted to be tachycardic, to write an explanation such as 'crying' or 'distressed'. There was no such record in this case. Nor had Summer's activity been mentioned in any of the hospital staff's statements as an explanation for not considering that Summer's heart rate was trending upwards. Dr Barker was of the opinion that in the context of a child who was resting most of the evening; a child who had a heart rate that trended up from the 110s to 130s; a child that was four, at the extreme age range of the normal range; and a child that was vomiting blood – that there was relative tachycardia.

340. In relation to the normal range for heart rate, the Noosa Private Hospital's legal representative has submitted that of the three different tables published by three reputable sources, only the Queensland Health Children's Early Warning Tool (CEWT) shows that the range is from 1 – 4 years old. The Royal Children's Hospital Melbourne Paediatric Guidelines show that the range is for 2 – 5 year olds and the Paediatric Advanced Life Support (PALS) produced by the Australian Resuscitation Council Queensland Health shows that the range of 90 – 140 is specifically for 4 year olds. However, I do not assess that this affects the substance of Dr Barker's concerns. Summer's heart rate was still trending at the high range of all of the guidelines and her age was at the high end in two out of the three guidelines.

341. Dr Barker was also of the opinion that Dr du Plessis should have turned his mind to thinking that the bleeding was coming from lower down, and therefore a Haematemesis, which has a different diagnostic spectrum.

342. This should then have triggered Dr du Plessis:

    a. not to discharge Summer;

    b. to insert an IV cannula;

    c. to check Summer's full blood count and coagulation profile. The reason for checking the full blood count would have been to check whether the platelet count was normal; and

    d. Then, knowing that he was investigating Haematemesis and would need to have a paediatric endoscopy to investigate that, Dr du Plessis should have called the Paediatric Registrar.

343. Dr Barker acknowledged that a failure to recognise subtle signs can sometimes happen despite competent and diligent people doing the job to the best of their ability. It's an ongoing balance between the level of investigation needed and the duration needed to observe a patient, to satisfy yourself about what is going on. Dr Barker recognised that Dr du Plessis was a competent doctor but her view was that he should have been thinking more laterally. Dr Barker recognised that it would not have been easy in the middle of the night and on his own.

344. It is important to also note, however, that it was Dr Barker's opinion that even if Dr du Plessis had adopted a diagnosis of Haematemesis as early as when Summer first presented at 1:45am, the outcome for Summer is likely to have been exactly the same. They may have inserted an IV; they may have done a full blood count; they may have found out that the haemoglobin was a bit low; they probably would have transfused Summer; they wouldn't have performed a chest X-ray; and they probably wouldn't have retrieved Summer until later in the morning. Summer would probably still have been waiting at the Noosa Private Hospital at 8:10am on 30 une 2013, when she had her major arterial aortic bleed.

Dr du Plessis' use of the 24 Hour Fluid Balance Chart

345. Dr Barker noted that starting a Fluid Balance Chart was appropriate but starting it for the purpose of only recording outputs was nonsensical because the output relates to the input.

Dr du Plessis should have been more aware of Summer's percentage of circulating blood volume loss

346. Dr Barker noted that Summer was not weighed during her first presentation to Noosa Private Hospital Emergency Department. Had this occurred, there might have been an opportunity to calculate the volume of blood lost relative to her circulating blood volume.

347. The volume of blood loss for each vomit was also not accurately recorded or monitored (accepting that there are challenges in estimating blood volume).

348. Dr Barker is of the opinion that Dr du Plessis should have taken steps to monitor and be more aware of Summer's blood loss relative to her circulating blood volume.

Dr Carita Shield – Noosa Private Hospital

349. Dr Barker was of the opinion that Dr Shield's initial treatment and management was appropriate. Summer was appropriately triaged and seen promptly.

350. Dr Barker would only question Dr Shield's phone call to the Paediatric Registrar at the Nambour General Hospital. It didn't seem to Dr Barker that Nambour had the facility to provide a paediatric endoscopy or management at that stage, given Dr Shield appears to have believed that Summer had Haematemesis, rather than primarily Epistaxis.

351. Dr Barker recognised that phoning Nambour was the established referral pattern, but noted from a system perspective that doctors such as Dr Shield need to have the confidence to short circuit the process when necessary. To be clear, Dr Barker was raising this as a system issue, not a criticism of Dr Shield.

352. Dr Shield's legal representative has submitted that it was reasonable and appropriate for Dr Shield to seek advice from the Nambour Paediatric Team, given Summer's presentation. The Noosa Private Hospital did not have a paediatric service and Nambour General Hospital was the major referral hospital within the Sunshine Coast Hospital and Health Service. At that very early time, Dr Shield did not yet have the results of the blood tests that were being conducted and as such did not have the full picture of Summer's condition. It was not the case that Dr Shield lacked confidence to short circuit the process and contact Retrieval Services Qld directly, but rather was appropriately seeking the input of relevant specialist clinicians.

353. Ultimately, Dr Barker was not of the view that the fact that Dr Shield sought input from the Nambour Paediatric Team during a phone call of up to 10 minutes would have made any difference to the final outcome.

Other systemic issues

354. From a process perspective, Dr Barker was of the opinion that there are systemic lessons to be learned from Summer's death. She has made the point that these lessons are perhaps not so important for recognising the next case of aorta-oesophageal fistula, but they are in relation to the next patient with internal blood loss or other conditions.

Medical records

355. Dr Barker noted that the best practice in terms of electronic record keeping is to have a system that automatically time stamps when you are entering

notes, and then for the practitioner to document the time that their observation relates to.

356. Dr Barker noted Ms Beazley's advice that the Noosa Private Hospital is introducing a scribe system where medical students accompany doctors on most shifts to record their consultations. Dr Barker was of the opinion that such a system may be useful adjunct, but shouldn't replace the doctors being able to or being required to write their own notes. Dr Barker had some concerns about a scribe's ability to synthesize and document the conversation and diagnostic thinking.

QAS method of recording blood loss

357. Dr Barker is of the opinion that it would have been preferable for the ambulance crew to record their estimation of the volume, colour and consistency of the blood loss during their first attendance at Summer's house. Dr Barker recommended that QAS should consider ways to improve their current processes so that this can be achieved in future, when possible, to assist with the diagnosis down the line.

358. The QAS Medical Director, Professor Stephen Rashford, has advised that the QAS will give consideration to ascertain whether its systems can be further tailored to assist paramedics in recording such information. One identified challenge with this issue is the huge variability in estimates, even amongst trained medical professionals. Both over and under assessment of blood loss can be unhelpful.

359. At the time of Summer's death, the QAS had a Clinical Practice Manual, which mentioned button battery ingestions. The February 2015 Digital Clinical Practice Manual has placed greater focus on the ingestion of button batteries, including that the consequences of ingestions can be fatal.

360. On 15 September 2015, the QAS Medical Director, Professor Stephen Rashford, forwarded an email to all QAS staff, reminding paramedics that where possible, they should record the estimated blood loss for all cases they attend, where this is relevant. He further requested that paramedics record if it is bright red or dark or if large clots are present. Professor Rashford further stated that this is particularly important in children, where the relative loss is more important.

361. The QAS is also in the process of finalizing the development of a new eARF to ensure that an accurate, easy to read medical record will be more rapidly accessible to doctors and nurses at the receiving hospitals. The QAS also plans to explore possibilities of integrating the completed report forms into the hospital emergency department management systems, so as to ensure the ambulance report form is integrated into the patient's hospital medical record.

362. I acknowledge the good work that Professor Rashford and the QAS have already done to address Dr Barker's recommendations. However, in my view, consideration should still be given to improving future training and

standing procedures in relation to recording of blood loss.

Phone consultations with Nambour General Hospital

363. Dr Barker noted the uncertainty as to the information provided by Dr du Plessis to the Paediatric Registrar at the Nambour General Hospital when obtaining advice at around 6:00am to discharge Summer from hospital the second time.

364. Dr Barker has noted that the arrangement between the Noosa Private Hospital and the Nambour General Hospital in relation to primary support and advice for paediatric patients carries the risk of misdiagnosis and mismanagement, particularly when:

    a. those seeking and giving advice are less experienced;

    b. structured responses are not provided or requested (ie. the raw numbers of the vital signs); and

    c. assumptions are made, based on an initial false premise (ie. that Summer ever had Epistaxis).

365. Dr Barker was of the opinion that these weaknesses in the system should be addressed.

24-Hour Fluid Balance Chart

366. Dr Barker noted that the Noosa Private Hospital's recording of blood loss on the Fluid Balance Chart is largely about volume, and is ambiguous in that it is unclear whether vomited blood should be recorded in the vomit or the blood column and does not specifically ask about the colour and consistency of the blood (ie. dark, bright or altered, and whether clots are present). (It is acknowledged that this issue is likely to exist in many hospitals, not just the Noosa Private Hospital).

367. Dr Barker noted that in this case, Summer's vomit at around 10:40am, which was described in the nursing notes as "a torrent of blood", wasn't recorded in the Fluid Balance Chart. Earlier vomits were also recorded in different places within Summer's medical record by different people, all saying slightly different things. Dr Barker was of the opinion that it is important to direct the recording to the one place (ie. the Fluid Balance Chart) and to standardise the collection of information to improve accuracy. This may improve awareness and communication.

368. Dr Barker also considers that it would be helpful if weight were recorded on the Fluid Balance Chart (as it is on the medication chart).

Coronial comments and recommendations

369. Section 46 of the *Coroners Act 2003* provides that a Coroner may comment on anything connected with a death that relates to public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in the future.

370. Despite this inquest's focus on the adequacy of Summer's medical care, it is important to recognise that the real killer here was the button battery itself.

371. As noted at the beginning of these findings, button batteries are everywhere and they are easily accessible to children. As electronic devices become smaller, slimmer and sleeker, so too does the increase in button battery usage. You can find them in children's toys, t.v remotes, cameras, watches, calculators, musical greeting cards, kitchen and bathroom scales, hearing aids, and remote control devices – to name a few.

372. In order to find ways to improve safety, Counsel Assisting has consulted widely on my behalf. The stakeholders consulted include Kidsafe Queensland, the Queensland Injury Surveillance Unit, the Queensland Office of Fair Trading (Product Safety Unit), the Australian Competition and Consumer Commission (Product Safety), and the Australian Battery Recycling Initiative (which includes members from the battery industry).

The hazard

373. The term 'button battery' has been used in this inquest because it is common term used to collectively describe button and coin cells. They are also often referred to as 'disc batteries'.

374. The battery Summer ingested was technically a 20mm lithium '*coin cell'*. The Queensland Office of Fair Trading has advised that 'coin cells' typically use lithium chemistry with 3-volt electrical output. They are coin-shaped and have the highest risk associated with them because of the higher voltage and because of their size (18 – 32mm in diameter). They are more likely to become stuck in the oesophagus if ingested and lead to the most serious outcomes.

375. 'Button cells' typically use alkaline chemistry with 1.5-volt electrical output. They are button shaped and less than 16mm in diameter. Ingested button cells usually pass through the gastrointestinal tract without problems. However, when more than one button cell is ingested at the one time, the voltage accumulates and may exceed 3 or more volts, providing a comparable risk of hydrolysis to that posed by coin cells.

376. The process of hydrolysis can occur with any battery over 1.23 volts. 'Flat' (or spent) 3 volt lithium batteries carry a residual charge of about 1.3 volts. Small cylindrical batteries that are more than 1.23 volts (AA/AAA/others) can also present a similar hazard, but injuries are much less frequent because the batteries do not tend to lodge in the throat.

377. When ingested, saliva triggers the batteries to generate an electrical current, resulting in chemical burns caused by the electrolysis of tissue fluids and hydroxide produced. Failure to remove batteries from the oesphogus within two to three hours can lead to perforation of the oesphogus, fistulas and vocal cord paralysis. Symptoms following ingestion can mimic other common conditions, complicating and delaying accurate

diagnosis, complicating and delaying accurate diagnosis and the timely removal of the batteries. Long-term impairment or death may result.

Death and injury statistics

378. A Victorian Injury Surveillance Unit report in 2013 reported that in the US, 13 children died from ingesting button batteries between 1997 and 2009 alone. Those fatalities involved children between 11 months and 3 years of age. Only one battery ingestion was witnessed. The diagnosis was missed in 7 of the 13 deaths because of non-specific presenting symptoms. Other research-based evidence suggests that in the US there are five deaths per year from battery ingestion.

379. The Queensland Injury Surveillance Unit estimates that over 200 children each year are presenting to Queensland Hospital Emergency Departments with battery ingestion related injuries. Children under the age of 5 are at the highest risk.

380. Summer is the first child in Australia known to have died from button battery ingestion. However, since this inquest was held, I have since become aware of a 1 year old girl who died in Victoria in February 2015 from ingesting a button battery the same size as the one Summer ingested. The Victorian girl also died from a haemorrhage, which was caused by an aorta-oesophageal fistula. The matter is currently under coronial investigation by Coroner Caitlin English. I have provided Coroner English a copy of the Brief of Evidence in relation to Summer's death to assist with the Victorian investigation. What these two deaths highlight is that unless more action is taken at a national and state level, similar deaths will continue to occur.

How do children generally obtain the batteries?

381. Research conducted in the US into battery ingestions suggests that children who were younger than 6 years obtained batteries directly from the product in 62% of cases, were loose in 30% of cases, and were obtained from battery packaging in 8% of cases. It is expected that these trends are likely to also apply to Australia.

Why do children swallow button batteries?

382. Dr Barker has advised that children, particularly in the toddler age group, use their mouths to explore / manipulate objects. This habit appears to persist in some older children, particularly those on the autistic spectrum. Metallic, shiny, smooth objects appear to be particularly attractive both to handle and to place in the mouth. It is one of the great mysteries of paediatrics that even teenagers can be unable / reluctant to swallow pills and yet small children are able to swallow relatively large items, like coins or 2cm diameter button batteries. The swallowing appears to be inadvertent.

383. Young children are often unable or unwilling to disclose what they have done with the battery. Even older children have denied swallowing batteries after being shown x-ray evidence.

Safety measures

Safer battery design

384. I accept Counsel Assisting's submission that it is unrealistic to ban button batteries, so the primary focus should be on designing out the hazard so that the batteries do not cause a chemical reaction when ingested.

385. Kidsafe Queensland has advised that there are some interesting initiatives such as:

    a. US research into the development of a coating for the batteries, to prevent a chemical reaction from occurring when ingested; and

    b. New Zealand research into development of a colourant that stays on the battery and colours saliva a bright colour, if ingested.

386. These initiatives should certainly be encouraged, but unfortunately they are unlikely to be on the market for a number of years yet. In the meantime, other safety measures need to be pursued.

Child resistant packaging and warnings

387. The US Consumer Product Safety Commission has been working with overseas manufacturers to encourage the use of child resistant packaging, safety tabs, and direct safety warnings on the batteries themselves. They are also working to introduce a US Standard to standardise product packaging and warnings.

388. The ACCC has advised that they held a meeting with suppliers of button batteries in July 2013 to discuss voluntary safety improvements to the packaging and warnings of these products.

389. At the request of the suppliers, the ACCC provided a template with acceptable warnings for their packaging. The majority of suppliers agreed to implement child resistant packaging and improved front and back warnings on the batteries. The suppliers indicated they would be able to implement the changes either by the end of 2014 or 2015.

390. A survey was conducted by the ACCC in September and October 2014 indicating that some suppliers had commenced introducing the improved packaging requirements into the Australian market. Acknowledging that it may take some time for retailers to sell their existing stock and is likely to take longer for industry to implement, The ACCC intends on conducting another survey in late 2015. Following this survey, the ACCC has advised that they will consider whether the voluntary changes have been sufficient or whether there is a need for further intervention.

Child resistant battery compartments

391. Dr Barker has pointed out that it is illogical that toys are the only products that are currently required to have child resistant battery compartments in Australia. Yet, a wide variety of relatively inexpensive products that are

marketed to be attractive to young children, but are labeled with a disclaimer: 'this is not a toy', are not. Also, regardless of the definition of the product, young children have access to and regularly play with a broad variety of household products that contain button batteries. The child defines the toy.

392. Dr Barker and Kidsafe Queensland have recommended the implementation of a 'horizontal Standard', requiring any item that contains a button battery to have a robust child-resistant battery compartment to be introduced.

393. The ACCC has advised that it is collaborating with electrical regulators on the requirements for secure battery compartments in audio visual equipment and similar products.

394. Standards Australia has advised the ACCC that there are currently two projects underway to review the Australian Standards relating to the information technology equipment and audio-visual equipment. The technical committee has agreed to adopt requirements for secured battery compartments for those products using button batteries less than 32mm in diameter.

395. The Queensland Consumer Product Injury Research Advisory Group has also apparently made representations to Standards Australia to consider the development of a horizontal battery standard.

Safe disposal of batteries

396. Research conducted by Kidsafe ACT suggests that the availability of a long-standing battery recycling program in Germany and Austria has contributed to their lower rates of battery ingestion injury compared to Australia.

397. The Australian Battery Recycling Initiative (ABRI) estimates that there were 58.2 million button batteries sold in Australia in 2012-13, yet only 2.7% of handheld batteries were recycled.

398. At present, Australia does not have a national battery recycling program. There are some existing services such as those provided by some local councils, Battery World, and ALDI Supermarkets but the solution really requires a national approach.

399. Negotiations have apparently commenced with industry for the development of a 'voluntary national battery stewardship program'. The Queensland Department of Environment and Heritage Protection is leading the negotiations on behalf of all Australian governments. ABRI have also recently lobbied the Federal Minister for the Environment to introduce legislation for the mandatory recycling of handheld batteries.

400. A national recycling initiative would be beneficial but Dr Barker has pointed out that there also needs to be more guidance given to householders about how to store spent batteries prior to disposal, and how to transport them. Anecdotal evidence suggests that people often retain spent batteries to find

an appropriate replacement for the product (using size, shape and number). It is not uncommon when purchasing replacement batteries, to transport a loose spent battery in the handbag or wallet, where it is accessible to children.

401. I agree with Dr Barker's suggested distribution of a child resistant disc battery disposal container for storing and transporting button batteries for recycling as a simple practical step. This will require funding and a suitable distribution network.

Public awareness and consumer behavioural change

402. All of the stakeholders consulted have made a considerable effort to raise public awareness about the dangers of battery ingestion. There is evidence that these efforts have had some success. It is noted that Energizer in particular has led the way in terms of partnering with Kidsafe and the ACCC for some of these initiatives.

403. Kidsafe Queensland has noted that to achieve the most effect, public awareness campaigns must be ongoing. To do this, they need proper and continuous funding. There must also be 'buy in' from the battery manufacturers, product manufacturers, and retailers.

The Health System Response

404. As a last line of defence, health practitioners need to be more aware and better equipped to handle suspected button battery ingestions. Dr Barker continues to work with the health profession to achieve this and she has made a number of recommendations in her report, many of which are picked up in my proposed recommendations below.

405. Counsel Assisting has made a number of submissions in relation to recommendations. I accept the majority of those submissions and I make the following recommendations.

Recommendation 1 – Button battery manufacturers

406. Button battery manufacturers are urged to fund and develop without delay:

    a. Safer button batteries that design out the hazard so that chemical reactions do not occur when ingested by children; and

    b. Cheap battery disposal containers for storage in the household and transport to recycle centres.

407. Button battery manufacturers are called upon to urgently implement the ACCC's suggested packaging and safety warning standards for all button batteries sold in Australia. This should be reflected in the development of an industry 'best practice guideline'.

Recommendation 2 – Manufacturers, distributors and retailers of products containing button batteries

408. All manufacturers, distributors and retailers of products containing button batteries are called upon to:

    a. Place adequate warnings on their packaging, on the products themselves, and within User Manuals that identify the presence of a button battery and that the battery is a health hazard if ingested or inserted; and

    b. Ensure that button batteries are not supplied with their product in a way that is easy accessible to small children. This should be achieved by implementing an existing child resistant packaging standard for battery packaging and by implementing the existing toy standard to ensure that batteries are secured in a child resistant battery compartment within the product.

Recommendation 3 – Australian Competition and Consumer Commission

409. That the ACCC:

    a. Rapidly develop regulation for the federal government's consideration, which mandates (through an Australian Standard or otherwise):

        (i). a horizontal standard, requiring all button battery compartments within products to be secured so that they are child resistant;
    and

        (ii). a current child resistant packaging standard for non-pharmaceutical products (currently AS 5808- 2009 for non re-closable packaging or AS 1928-2007 for re-closeable packaging) to all battery packaging.

Recommendation 4 – Commonwealth Government

410. That the Commonwealth government implement, in conjunction with State governments, industry, and the Australian Battery Recycling Initiative:

    a. A national battery disposal/recycling system for all hand held batteries; and

    b. The provision of practical advice to the public about household storage and transport of hand held batteries to disposal centres.

Recommendation 5 – Queensland Government and industry

411. That the Queensland Government collaborate with the button battery industry and product manufacturers, distributors and retailers to fund organisations such as the Office of Fair Trading and Kidsafe to:

a. conduct an ongoing active public awareness campaign to warn the public about the dangers of button batteries for children and practical ways to mitigate the risk.

Recommendation 6 - All State Health Departments

412. That all State Health Departments:

a. co-ordinate with a view to developing a national reporting system for battery related exposures and injuries;

b. promote Poisons Information Centre services as a first point of information for families following a battery exposure;

c. develop retrieval and management protocols for button battery related injuries for their particular jurisdiction. This protocol should be shared with the Poisons Information Centre network; and

d. Re-design their 24 Hour Fluid Balance Charts and introduce protocols to ensure that it is clear where vomit and blood should be recorded, and to standardise the way in which loss of blood is described (in relation to volume, consistency and colour). The form should include the patient's weight and a formula for calculating circulating volume. (This form re-design is a broader health issue, not just related to button battery ingestion).

Recommendation 7 - All Paediatric Hospital sites

413. That all Paediatric Hospital sites:

a. Increase awareness of the identification of button battery ingestion amongst staff, patients, and patients' families; and

b. Develop algorithms for foreign body related injury and upper gastrointestinal bleeding that highlight the potential involvement of disc batteries. Such algorithms should be accessible externally.

Recommendation 8 - Medical Professional Colleges and Associations

414. The Royal Australian and New Zealand College of Radiologists and the Australian Institute of Radiographers are encouraged to:

a. develop an algorithm for early clinician notification where a button battery is present on X-ray.

415. The Australasian College of Emergency Medicine; Royal Australasian College of Surgeons (general paediatric surgeons and ear nose and throat surgeons); and Royal Australasian College of Physicians (Paediatricians and Paediatric Gastroenterologists) are encouraged to:

a. adopt policy documents, which support prevention of button battery ingestions; and

b. identify management strategies.

Recommendation 9 – Australian Health Practitioner Regulation Agency

416. That AHPRA:

a. Raise awareness amongst clinicians, pharmacists, and radiographers in relation to emerging product safety issues such as button battery ingestion by emailing a brief description of the issue and providing a link to the ACCC reporting site and the Poisons Information Centre.

Recommendation 10 - Noosa Private Hospital (and Ramsay Health)

417. That Noosa Private Hospital (and Ramsay Health):

a. Review and revise the current process for reviews of hospital deaths, including unexpected deaths of patients who have presented at the Emergency Department to ensure that systemic issues are always considered and such processes are recorded and conducted impartially;

b. Introduce a medical record keeping system to ensure that all electronic entries are automatically date and time stamped and that clinicians are educated as to the need to record the date and time of their specific observations and activities;

c. Re-design their 24 Hour Fluid Balance Chart and protocols to ensure that it is clear where vomit and blood should be recorded, and to standardize the way in which blood is described (in relation to volume, consistency and colour). The form should include the patient's weight and a formula for calculating circulating volume. (This form re-design is a broader health issue, not just related to button battery ingestion);

d. Implement a protocol for phone and telemedicine consultations where Noosa Private Hospital medical practitioners obtain primary support from other Hospitals (such as for paediatric support from the Nambour General Hospital) to ensure that:

(i). structured information is provided in a standardised manner (eg. provision of raw number for vital signs). This should minimise the risk of assumptions being made on a false premise and minimise the risk of misdiagnosis and mismanagement; and

(ii). the information conveyed and advice received is recorded.

Recommendation 11 - Nambour General Hospital

418. That the Nambour General Hospital:

a. Implement a protocol to ensure that where the Nambour General Hospital provides primary support to other hospitals (such as paediatric support to the Noosa Private Hospital):

(i). Information is sought and advice provided in a structured and standardized manner (to minimise the risk of misdiagnosis and mismanagement); and

(ii). The advice is recorded by the medical practitioner providing the advice, regardless of whether the Nambour General Hospital holds a patient file for the patient being discussed.

Recommendation 12 - Queensland Ambulance Service

419. That the Queensland Ambulance Service:

a. Develop procedures and training to enable ambulance officers who attend a scene and have an opportunity to observe blood to more accurately record colour, consistency and volume (where clinical circumstances allow).

Recommendation 13 - Dr Andrew Spall

420. That Dr Spall:

a. Focus on making more comprehensive medical notes in relation to his examination of patients in future. If this is not achievable due to his patient load, he should consider decreasing his patient load to achieve this;

b. Record in writing any additional notes or observations that he can recall in relation to consultations should a patient of his die or be involved in a serious incident in the future. Such information should be provided to the Coroner at the earliest opportunity, if the death is a 'reportable death'; and

c. Consider initiating follow up appointments on a case-by-case basis for children who are unwell, wherever possible in future.

I offer my condolences to Summer's family. I close this inquest.

John Hutton
Coroner
3 November 2015