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TRANSCRIPT OF PROCEEDINGS

INQUIRY INTO THE CONVICTIONS OF KATHLEEN MEGAN FOLBIGG

THURSDAY, 21 MARCH 2019 at 10.00am

PRESENT:

Legal representatives

Gail Furness SC, Senior Counsel assisting the Inquiry
Ann Bonnor, counsel assisting the Inquiry
Sian McGee, counsel assisting the Inquiry
Jeremy Morris SC, Senior Counsel for Ms Folbigg
Robert Cavanagh, counsel for Ms Folbigg
Isabel Reed, counsel for Ms Folbigg
Kate Richardson SC, Senior Counsel for Dr Allan Cala
Ian Fraser, counsel for NSW Health
Ragni Mathur, counsel for Professor John Hilton

Witnesses

Professor Johan Duflou, Forensic Pathologist
Dr Allan David Cala, Senior Staff Specialist at the Newcastle Department of Forensic Medicine
Professor John Miller Napier Hilton, Former Forensic Medicine Consultant
Professor Stephen Cordner, Professor of Forensic Pathology International at Monash University and head of International Programs at the Victorian Institute of Forensic Medicine

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SPECIAL INQUIRY

THE HONOURABLE REGINALD BLANCH AM QC

THURSDAY 21 MARCH 2019

INQUIRY INTO THE CONVICTIONS OF KATHLEEN MEGAN FOLBIGG

PART HEARD

<JOHAN DUFLOU, ON FORMER AFFIRMATION, ALLAN CALA, JOHN HILTON AND STEPHEN CORDNER, ON FORMER OATH (10.07AM)

JUDICIAL OFFICER: Can I just say this. You no doubt saw that yesterday afternoon things got a bit discursive and I'm sure that you're not available to be here to continue this for the next week. I expect that Mr Morris will be focused in his questioning. Can I ask you to be focused in your answering and not talk unnecessarily? It's necessary of course to answer the question but if you could cooperate in that way it might move things along a bit faster. Yes, Mr Morris.

MORRIS SC: Thank you, your Honour. Gentlemen, yesterday Professor Hilton drew attention to the issue of a prior death involving an uvula becoming entrapped in the epiglottis. Do you remember that evidence?

WITNESS CALA: Yes.

MORRIS SC: As I understand it, some further research has been done overnight on this particular topic. Is that correct?

WITNESS CALA: Yes.

MORRIS SC: And you've since been provided with other articles which record the same sort of phenomenon. Is that correct?

WITNESS CALA: Yes.

MORRIS SC: Professor Cordner, you've seen that?

WITNESS CORDNER: (No verbal reply)

MORRIS SC: One of the features, can I suggest, that has become apparent is that - and I'm talking specifically of the article by Marom, 'Otolaryngological Aspects of Sudden Infant Death Syndrome' - from the otolaryngologist's perspective the infant upper airway is developing in the first year of life. Is that correct?

WITNESS CALA: Yes.

WITNESS CORDNER: Yes.

MORRIS SC: Professor Cordner.

WITNESS CORDNER: I'm sure that Professor Hilton has thought about this a lot more than the rest of us. I'll tell you if I disagree.

MORRIS SC: Okay, thank you. I don't want you to feel neglected over there.

WITNESS CORDNER: No, no.

MORRIS SC: And that paper was published in 2011?

WITNESS HILTON: I'll check.

MORRIS SC: Then another--

WITNESS HILTON: 2012.

MORRIS SC: 2012, is it? Then another paper that's come out is Nachman and that really is a case report and that was published in 2010, 'Infantile Asphyxia due to Aberrant Uvula'.

WITNESS HILTON: Yes.

WITNESS CORDNER: Yes.

WITNESS CALA: Yes.

MORRIS SC: Then of course there is the article of Guilleminault, 'Five Cases of Near-Miss Sudden Infant Death Syndrome and Development of Obstructive Sleep Apnoea'?

WITNESS CALA: Yes.

WITNESS CORDNER: Yes.

MORRIS SC: And then finally there's the reply which is 'The Uvula and Sudden Infant Death Syndrome' by Jean-Paul Harpey.

WITNESS CALA: Yes.

MORRIS SC: Professor Hilton, given this additional material and given your observations at autopsy, what have you got to say about the opinion you gave at trial that this was an incident of the autopsy process, the presentation you saw?

WITNESS HILTON: I think I postulated at trial it may well be a post mortem artefact and it may still have been a post mortem artefact but it's nice to have

supporting evidence from other eminent people that it may well not be a post mortem artefact. It may be real and in fact it may be true in the particular case that we're considering.

MORRIS SC: Does anybody else wish to add to that?

WITNESS CORDNER: No.

WITNESS CALA: No.

MORRIS SC: To that extent we did have some sleep apnoea or snoring evident with Sarah, didn't we?

WITNESS HILTON: Yes.

MORRIS SC: I don't wish to go over the evidence yesterday but one of the features or postulates in the Nachman article is that there may have actually been airway obstruction although the uvula may have caused laryngospasm.

WITNESS HILTON: That's a - that's a - there is no way of proving that because laryngospasm is an act of a living phenomenon but it's a nice postulate.

MORRIS SC: It's possible that laryngospasm can trigger unexpected death, isn't it?

WITNESS HILTON: Laryngospasm means tightening up of the larynx and obstruction. Now, it's possibly not all that terribly uncommon but if you like we can take comfort from it, at the moment of death or moment immediately prior to death there may well be a relaxation and the laryngospasm disappears. So I really don't know - I cannot give you a definitive answer to what you're asking me.

MORRIS SC: Does anybody else have a view or would you defer to an otolaryngologist on that issue?

WITNESS DUFLOU: Well, just if I can comment, I think again this shows the problem that we have as forensic pathologists and that we are not ENT surgeons. This is an area of expertise of its own that we have, I believe, limited knowledge of overall.

MORRIS SC: Does anybody wish to add to that?

WITNESS CALA: I've heard what Professor Hilton said about laryngospasm and I agree with him around the time of death the larynx would relax and so a pathologist would not be able to identify it so this is one of the areas where the autopsy is a relatively blunt tool. We're able to look at morphology, that is, structure, but we're not very good at identifying functional abnormalities.

MORRIS SC: Thank you. Does anybody wish to add to Dr Cala's statement?

No. If we take that basic postulate that's set out in those articles, do any of those articles and the statements made in them state that during the first year of life the upper airway of the infant is developing? Does that provide any illumination with respect to the possible cause of death of Caleb? Professor Hilton?

WITNESS HILTON: Caleb was, Caleb was reported as having on clinical grounds, laryngomalacia and then the clinician who made that comment sort of backed away from it sometime after Caleb was born. Laryngomalacia, if it were present, and there was certainly clinical indications that it was present, is likely to persist and laryngomalacia has been recorded as being a potential cause of death in small children.

MORRIS SC: And with respect to Caleb, it's a potential cause of death?

WITNESS HILTON: Yes.

MORRIS SC: Dr Cala?

WITNESS CALA: I don't - are you talking specifically about laryngomalacia.

MORRIS SC: Let's talk broadly about laryngomalacia and then specifically about Caleb?

WITNESS CALA: My understanding of it and it's not an inherently dangerous condition, that children who have it, have stridor, in other words they have an inspiratory type wheeze when they breathe, that it's felt to be a process that the child literally outgrows, as the larynx further develops with time and the cartilage within the larynx relatively normalises, in reference to Caleb, yes he had it but Dr Springthorpe was of the view that this was a relatively benign process and I would defer to his expertise, being a paediatrician who has probably seen countless children with this type of abnormality.

MORRIS SC: I mean Dr Springthorpe recommended conservative treatment, just a wait and see approach?

WITNESS CALA: Yes.

MORRIS SC: It's possible isn't it that Dr Springthorpe may have felt that this would resolve in due time and that it would not become a problem, which I suppose leaves open the possibility that it may not have resolved over time, correct?

WITNESS CALA: No, I'd agree with him, with his approach that this is a condition that's been known of for some time, over many years, and that children do not die from this condition and that is why he was prepared to just watch and wait and see, and allow the child to develop.

MORRIS SC: Dr Cala, it's been known that children do die of this condition, isn't it?

WITNESS CALA: If it's, if it's severe, although I haven't - I don't have any references to an autopsy study or even a case report on a child that has died of convincing laryngomalacia.

MORRIS SC: To that extent you don't have - do you consider you have the expertise to form a view about what level of laryngomalacia is likely to kill somebody and what doesn't?

WITNESS CALA: I don't, I don't have that expertise.

MORRIS SC: Just to put it blankly, withdraw that, it is possible that a laryngomalacia may not resolve with conservative wait and see treatment, do you agree with that?

WITNESS CALA: In theory it's possible.

MORRIS SC: Now, Professor Cordner, with respect to laryngomalacia, both broadly as a topic as a potential cause of death and in relation to Caleb's condition, what's your view?

WITNESS CORDNER: Look, I've really got nothing to add to the discussion that's been already had.

MORRIS SC: Professor Duflou?

WITNESS DUFLOU: I've certainly not seen any confirmed cases of laryngomalacia myself but I am aware that there is research which indicates that 90% of patients represent a benign self-limiting condition, disappears by the age of two to five years, and the remainder if untreated, 10% of cases can prove fatal.

MORRIS SC: If we look at Caleb and Sarah together, with their upper airways issues, Caleb's stridor and his difficulty feeding, Sarah with her snoring, the presentation of the uvula and the laryngomalacia, and assume that for a moment that Craig Folbigg was a big snorer, does that suggest that there may be a potential familial link to the structures of the upper airway in this case? Professor Hilton?

WITNESS HILTON: There may be but that's a very open - a moot point.

WITNESS CALA: I can't answer that, I don't know.

WITNESS HILTON: Could I add one thing arising out of the previous little bit of discussion, Caleb died at a very young age which means if in fact laryngomalacia were present, he really didn't have the time to grow out of it.

MORRIS SC: We had some mention of risk factors and so forth in the last couple of days and one of the issues was co-sharing of a bed, and really it goes to this, co-sharing of a bed can lead to accidental smothering?

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

WITNESS CORDNER: Yes.

WITNESS DUFLOU: Yes.

MORRIS SC: And also it's even without accidental smothering, you can have a child die co-sharing, is that right?

WITNESS CALA: Of other conditions.

MORRIS SC: Yes?

WITNESS CALA: Yes.

MORRIS SC: Is it thought that the temperature modulation in the infant might be affected by co-sharing which can lead to SIDS?

WITNESS CALA: I think that's one theory yes.

WITNESS DUFLOU: I agree.

MORRIS SC: Professor Hilton?

WITNESS HILTON: It's a theory.

MORRIS SC: Just in relation to signs of smothering, it's fair to say that the smothering is a sort of two-way activity if I can put it in - the perpetrator does not know the reaction of the victim?

WITNESS HILTON: True.

WITNESS CALA: Correct.

MORRIS SC: And so if the child struggles, the perpetrator doesn't have any control over what the victim is going to do, how the victim is going to react?

WITNESS CALA: Correct.

MORRIS SC: Correct?

WITNESS CALA: Yes.

MORRIS SC: In that regard, the perpetrator when setting out on the deliberate smothering of a child, doesn't have any control over the child's reaction?

WITNESS CALA: Correct.

MORRIS SC: And if the child does start to struggle, the perpetrator may have to apply more force than initially started, initially planned upon in order to complete the smothering, is that correct?

WITNESS CALA: Possible.

MORRIS SC: To that extent, if more force was applied, then there's a greater risk of signs of smothering, do you agree with that?

WITNESS CALA: Yes.

WITNESS DUFLOU: Possibly.

WITNESS CORDNER: Yes.

MORRIS SC: And in terms of forensic practice, whether there's signs of smothering or not is a binary matter isn't it, there will either be signs of smothering or there won't?

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

WITNESS DUFLOU: Effectively yes.

MORRIS SC: And that is something which the perpetrator may be unable to control when they set about the smothering process, correct?

WITNESS HILTON: Yes that's true.

WITNESS DUFLOU: Absolutely.

MORRIS SC: And that includes facial bruising, the autopsy signs include facial bruising?

WITNESS CALA: Yes.

MORRIS SC: Commonly damage to the, is it the frenula?

WITNESS HILTON: Frenula, yep.

MORRIS SC: And that's the inside of the lips?

WITNESS HILTON: It's the wee mucosal fold in the midline in both the upper and to some extent the lower lip, yes.

MORRIS SC: And that is quite commonly bruised I take it because of pressure applied to the mouth and nose?

WITNESS HILTON: Yes.

WITNESS CALA: Bruised and torn.

MORRIS SC: Bruised and torn?

WITNESS CALA: Can I interrupt and say I don't necessarily agree commonly but it can happen.

MORRIS SC: And sorry, Professor Cordner?

WITNESS CORDNER: I'm agreeing with you.

MORRIS SC: And is the frenula especially vulnerable to downward pressure on it?

WITNESS HILTON: As I say they're little delicate folds of lining tissue and because of the anatomical position, they are prone to damage and not in every case of course, the sort of forces that may be applied in the case of deliberate suffocation may pull, stretch or deform the frenula beyond the point which the good Lord designed it to be pulled and stretched and it will tear, a lesser degree of force may only bruise them. Or a lesser degree of force again may do nothing to them whatsoever.

MORRIS SC: So if there's any twisting, as the force is being applied, that could lead to a tear of the frenula?

WITNESS HILTON: Yep.

WITNESS DUFLOU: Can I just add one thing, an important aspect of the torn frenula is that it generally remains torn and scarred for a prolonged period of time, so it doesn't only show acute injury around the time of death, but it can show previous episodes of injury as well.

MORRIS SC: Is that relevant to your assessment of Patrick?

WITNESS DUFLOU: Well it's certainly something that you'd consider, in all infant deaths you look at the frenula and you look for acute and longstanding injury.

MORRIS SC: Just in terms of forensic pathology process, this crime scene examination suggested in the literature, is--

WITNESS CORDNER: Can I just make one comment before you move away from injury?

MORRIS SC: I'm sorry, yes?

WITNESS CORDNER: Because really you have mentioned bruises, you've mentioned bruises to the face and you've mentioned bruises really on the

inside of the mouth and damage to the frenulum, but there can also be abrasions to the skin of the face.

MORRIS SC: Is infant skin vulnerable to abrasions?

WITNESS CORDNER: Well everybody knows the texture of baby's skin versus their own, so I don't think I've got anything special to say about that and also the bruising that Dr Cala mentioned yesterday, that can be hidden from easy view that has to be gone and looked for, by dissection.

MORRIS SC: And also other things we've talked about which is petechial haemorrhage in the eyes and so forth?

WITNESS CORDNER: Yes well they're not so much injury as a likely consequence of the obstruction to the airway.

MORRIS SC: We're all agreed there are no such indicators in any of these children?

WITNESS CORDNER: Yes.

WITNESS HILTON: Correct.

WITNESS CALA: Yes

MORRIS SC: Just in terms of forensic process and the definition of SIDS and particularly SIDS class 2, the crime scene examination or the - not crime scene, the examination of the place of death, do forensic pathologists in this country ever head out and examine the place of death of a child who has died of sudden infant death?

WITNESS HILTON: Yes.

MORRIS SC: You have--

WITNESS HILTON: Have done yep.

WITNESS CALA: Occasionally happens.

WITNESS DUFLOU: I think I've only done it where there are concerns by police at the scene.

WITNESS HILTON: Can I just point out the possible relevance of the examination, examination by scenes of crime officers, they are not - certainly they're not medically trained, although nowadays they're scientifically trained. The examination of the scene by a pathologist is perhaps gold standard and desirable. But what everyone has to bear firmly in mind is, by the time either the SOCO or the doctor gets to the crime scene, it's been heavily contaminated, it's been disordered, the body's probably been moved, the body may not even be there. So, there's great limitation on the value of scene

investigation.

MORRIS SC: Right.

WITNESS HILTON: It's - I'm not saying it's not helpful, it can be.

MORRIS SC: Everybody agree with that?

WITNESS CORDNER: Yes, I agree.

WITNESS DUFLOU: I agree.

MORRIS SC: And is--

WITNESS CORDNER: I would - I would think that attendance by a pathologist at a non-suspicious infant death scene would be very much the exception and not the rule.

MORRIS SC: And, so, is it the case that basically you are reliant on whatever material is provided to you by other people, in terms of consideration of the scene?

WITNESS HILTON: In practical terms, here and now, yes.

WITNESS CALA: Yes.

MORRIS SC: I take it that one of the issues that you look for is you try and get the best evidence you can, that is, the best evidence you can of what was in place immediately at the time of discovery of the child?

WITNESS CORDNER: Yes.

MORRIS SC: Correct?

WITNESS CALA: Yes.

WITNESS DUFLOU: Yes.

MORRIS SC: And the very first accounts given by those people who were involved in finding the child?

WITNESS CORDNER: Yes.

SPEAKER: Yes.

WITNESS CALA: Fair enough, yeah.

MORRIS SC: I take it because there's the risk of pollution or contamination of both observation and statement, correct?

WITNESS CORDNER: Yes.

WITNESS CALA: Yes.

MORRIS SC: In terms of the forensic process, does one look more broadly at family history in the case of sudden infant death?

WITNESS CALA: Yes.

WITNESS DUFLOU: It's certainly an important aspect of any death investigation at this time.

MORRIS SC: I see. And just in relation to filicide, the murder of infants, that is a very rare event, is it?

WITNESS HILTON: Beg your pardon?

MORRIS SC: It's a rare event?

WITNESS HILTON: I hope so.

WITNESS CALA: Yes, we believe it is.

WITNESS DUFLOU: I think it is, yes.

WITNESS CORDNER: Yes.

MORRIS SC: And, generally--

WITNESS CORDNER: Well, perhaps just to clarify, if we're talking about covert filicide--

MORRIS SC: Yes?

WITNESS CORDNER: --you know, we don't know, I suppose. But we don't have any reason to think it's other than rare, and overt filicide is uncommon and could be rare, yes.

MORRIS SC: Yes. And, generally speaking, in the case of overt filicide the perpetrators are usually male?

WITNESS DUFLOU: Yes.

WITNESS CALA: Yes.

WITNESS HILTON: Yeah.

MORRIS SC: And there are many methods of covert (as said) filicide, including striking the child, strangulation, stabbing and - correct?

WITNESS CALA: I would say--

WITNESS DUFLOU: Overt, you mean?

FURNESS SC: Your Honour, I raise to inquire the relevance of these questionings to--

JUDICIAL OFFICER: Yes, what is the relevance of that, Mr--

MORRIS SC: Well, your Honour, I'm developing something with respect to your Honour's observation the other day about the rarity of myocarditis deaths and it really is the counterpoint - and I'll develop it quickly.

JUDICIAL OFFICER: Yes, thank you--

MORRIS SC: Yes.

JUDICIAL OFFICER: --if you wouldn't mind.

MORRIS SC: Yes. In terms of overt filicide, there are many causes of death which leave marks and so forth, correct?

WITNESS CALA: Yes, certainly, yes.

MORRIS SC: So, smothering of a child represents a very small proportion of filicide cases, is that correct?

WITNESS CALA: Yes, we hope so.

MORRIS SC: Yes.

WITNESS CALA: Yeah.

MORRIS SC: So, even though filicide is rare, smothering cases, being a subset of those cases, is rarer again?

WITNESS CORDNER: Yes.

MORRIS SC: And one of the aspects of filicide in terms of the overt and covert causes, if that is attributed to an anger or loss of temper, one would expect to see - I'm sorry, I'll withdraw that. Each of you, in your reports, note that there is no sign of previous abuse in - no clinical signs of previous abuse in any of these four deaths?

WITNESS CORDNER: Yes.

WITNESS CALA: Yes.

WITNESS HILTON: Yeah, there's no signs of, of, of - there are no real signs of physical abuse in three of the four. There are no signs of certain physical -

certain signs of physical abuse in any of them.

MORRIS SC: Do you agree, Professor?

WITNESS CORDNER: Yep, there were no signs of any abuse, recent or old, in any of the children, as far as I am aware.

MORRIS SC: And no physical signs of any - no signs of any prior injuries which might be consistent with prior physical abuse, correct?

WITNESS CORDNER: Yeah.

WITNESS CALA: Correct.

WITNESS DUFLOU: Correct.

MORRIS SC: What you'd be looking for is bruising, broken bones and so on and so forth?

WITNESS HILTON: There was nothing of that nature in any of them.

MORRIS SC: And one of the issues, from the forensic pathologist's point of view, is that if there had been signs of prior abuse then that might suggest that the perpetrator was not able to control their anger or loss of temper, is that correct?

WITNESS HILTON: Well, it's a logical - a, a logical argument. I don't know that it's actual - from a forensic pathologist's point of view, I don't know that it's - that it's proof of anything, really.

JUDICIAL OFFICER: You need a psychiatrist, perhaps.

MORRIS SC: Well, we may do, your Honour. But I'll take you to some evidence later on in the Inquiry. Is one of the matters considered by forensic pathologists whether the perpetrator demonstrated any sign of Munchausen's (as said) syndrome by proxy? Is that a matter for forensic pathology or not?

WITNESS HILTON: Forensic pathology - forensic pathologists can talk about Munchausen syndrome by proxy, but the proof of Munchausen syndrome by proxy is often furthered, furthered by closed-circuit TV, as his Honour alluded to the other day, where someone is actually seen on CCTV doing something very nasty to a child, with a view to producing an illness, not death. An illness which results in the psychology - a psychiatry that is said to be resulting in the perpetrator getting a, a bit of satisfaction from the attention that all arises.

MORRIS SC: So, is that really something that's more psychiatric opinion or more a psychiatric examination to determine whether there are any features of it or not?

WITNESS CALA: Yes, it's, it's pretty well clearly outside our realm.

MORRIS SC: Right. Professor Cordner, did you wish to add anything to that?

WITNESS CORDNER: No, no, I - forensic pathology, I regard as the sort of autopsy-based medical specialty of death investigation. And so, you know, sort of, the further you get away from the autopsy base then the sort of more dilute our ability to comment becomes. And I agreed with what was said by Dr Cala that, really, talking about the perpetrator, I, I can't recall a time that I've sort of talked ever about the behaviour, really, or that's related to the mental state or, or anger much of perpetrators.

MORRIS SC: So, really, we've sort of reached the limit of the utility of forensic pathology?

WITNESS HILTON: Yes.

WITNESS CORDNER: Mm.

WITNESS CALA: Yes.

MORRIS SC: Now, Dr Cala, your concern at about the time of the trial was that Patrick's ALTE was caused - may have been caused by suffocation?

WITNESS CALA: That was a concern I had.

MORRIS SC: Yes. And, to that extent, the concern was that it may have been an unsuccessful attempt at smothering, correct?

WITNESS CALA: Yes.

MORRIS SC: You'd accept that it's a very serious allegation to make?

WITNESS CALA: Yes.

MORRIS SC: And one would want to look very, very closely at the clinical records surrounding the circumstances of that ALTE, do you agree?

WITNESS CALA: Yes.

MORRIS SC: Now, were you ever provided with Patrick's clinical records, at the hospital, after the ALTE?

WITNESS CALA: Yes.

MORRIS SC: You were. And did you look at them closely?

WITNESS CALA: Yes.

MORRIS SC: Did you seek any other professional opinion with respect to those clinical records?

WITNESS CALA: No.

MORRIS SC: You'd agree that one of the critical issues in determining whether the ALTE was cause by an attempt at smothering would be the onset of symptoms of brain dysfunction, do you agree?

WITNESS CALA: Yes.

MORRIS SC: To that extent, were you aware of the evidence of Dr Dezordi, who attended upon Patrick at the hospital?

WITNESS CALA: I'm aware a doctor of that name attended to him.

MORRIS SC: Yes. If I might go to exhibit H, please, your Honour - which I think is the forensic pathology tender bundle - and if we might have up on the screen page 76, your Honour? It would--

FURNESS SC: Tab 27, your Honour, if that helps?

MORRIS SC: Tab 27, thank you. The point is that back-arching in an infant is a well-known cause of cerebral irritation, is it not?

WITNESS CALA: It may be a sign of cerebral irritation.

WITNESS HILTON: Not a cause, but a sign, yeah and, and evidence of.

MORRIS SC: Evidence of--

WITNESS CALA: Yeah.

MORRIS SC: --cerebral irritation?

WITNESS CALA: Yes.

MORRIS SC: Other conditions can cause it, such as gastroesophageal reflux, do you agree?

WITNESS CALA: I'm not aware of that.

MORRIS SC: You're not aware?

WITNESS CALA: No.

MORRIS SC: Professor Cordner?

WITNESS CORDNER: That's one of the - that - in that long list of conditions that is associated with or can cause an acute life-threatening event.

MORRIS SC: The fact that, if it is a potential cause of - if back-arching is

potentially caused by cerebral irritation, it is a significant clinical factor in this setting, do you agree?

WITNESS HILTON: Yes.

WITNESS CALA: It's a significant sign to appreciate at the bed side.

MORRIS SC: Yes. And, clearly, the statement of Dr Dezordi indicated that he turned his mind to this clinical factor as being a significant clinical factor, if you look at page 76? Has it not come up? Could we go down to the bottom, to paragraph 6? Have you read that?

WITNESS CALA: Yes.

MORRIS SC: It's fair to say that from the time of this ALTE through to the time of Patrick's death he was suffering from an encephalopathy, wasn't he?

WITNESS CALA: Yes.

WITNESS: Yes.

WITNESS CORDNER: Yes.

MORRIS SC: It's important to try and identify when signs of that encephalopathy may have first commenced?

WITNESS HILTON: If you can.

MORRIS SC: If you can.

WITNESS CALA: Yes.

MORRIS SC: If any of this falls outside of your expertise and you would defer to another practitioner such as a neurologist I'd like you to tell me. If this was a smothering event as you were concerned about, Dr Cala, and I'm not being critical of your concern.

WITNESS CALA: Yes.

MORRIS SC: But one would expect to see the commencement of signs and symptoms which may have been consistent with cerebral irritation to have commenced sometime after the index event. Do you agree with that?

WITNESS CALA: If the event is of significance, whatever the cause is, and it has caused a degree of brain damage to an individual I don't know precisely how long afterwards a doctor or an observer would expect to see signs of cerebral irritation but it may be actually rather soon, I mean, within hours and I can't put a figure on it.

MORRIS SC: Am I to take this, that you can make the broad observation but

you'd defer to a specialist as to the onset of symptoms?

WITNESS CALA: Yes, but could I just say that with respect to the elicitation of physical signs in any disease, there is a high degree of variance, individual variance among people with those conditions, so I would defer, ultimately I would defer to a neurologist but I'd simply say that it is a spectrum of time over which a person with whatever affliction, let's say encephalopathy, begins to show signs that are visible to an observer.

MORRIS SC: With respect to the expected progress of signs after a hypoxic episode--

WITNESS HILTON: I'm excusing myself for a brief period.

MORRIS SC: Yes, certainly.

JUDICIAL OFFICER: Just while Professor Hilton is going, have you gentlemen got access to water?

WITNESS CALA: Yes.

WITNESS DUFLOU: Yes, we do.

JUDICIAL OFFICER: Okay, thank you.

IN THE ABSENCE OF WITNESS HILTON

MORRIS SC: Your Honour, I don't know whether--

JUDICIAL OFFICER: Do you want to--

MORRIS SC: I just would rather wait because I'd appreciate Professor Hilton's input.

JUDICIAL OFFICER: Okay.

MORRIS SC: Your Honour, we could attend in the meantime to bringing up on screen some documents which I don't think are yet tendered before your Honour which is that set of first tranche documents which are the clinical records of the hospital. We made arrangements with counsel assisting.

FURNESS SC: Your Honour, perhaps my friend can indicate what the documents are in order to have the exhibit list clear.

MORRIS SC: Your Honour, late last year a four-volume brief of documents in the possession of the Crown Solicitor's Office was served upon us. Unfortunately, that bundle of documents contains a great number of superfluous or duplicate records and it wasn't in an ordered manner and I'm sure the explanation for that is that the Crown Solicitors didn't receive it in an ordered manner and they simply copied it the way they received it from

whomever they got it from. So what we sought to do was to extract Patrick's clinical records from that bundle of documents in the order in which we received them from the Crown Solicitor's Office and what we did in order to make sense of it was to paginate the documents in the bottom right-hand corner.

What we did was we extracted those documents holus-bolus although not all of them are relevant. There's probably a dozen relevant documents and we distributed those to the Crown Solicitor's Office last week in a bundle and as I understand it, have they been put up on screen? They have. So, your Honour, what we'll be able to do is I'll be able to take you and the witnesses to the page numbers in the bottom right-hand corner and show them the relevant documents.

IN THE PRESENCE OF WITNESS HILTON

JUDICIAL OFFICER: Are we going to tender this?

FURNESS SC: I'm happy to tender it, your Honour.

EXHIBIT #S BUNDLE OF CLINICAL RECORDS OF PATRICK TENDERED, ADMITTED WITHOUT OBJECTION

FURNESS SC: Might I just indicate that the documents were provided on summons from I'm assuming the NSW Ministry of Health and at I think my friend's request for the medical records. They were provided as the medical records without any intervention by the Crown as to how they might be ordered.

JUDICIAL OFFICER: Yes.

MORRIS SC: Well--

JUDICIAL OFFICER: Don't worry, we've got them.

MORRIS SC: Yes. Might I first take you to page 493. That is a barium swallow which was performed on 15 June when the child was still young and it showed some minor reflux contrast into the nasal cavity but otherwise no substantial reflux. Do you see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: I want to suggest to you that that was performed as part of a routine examination - I want you to assume it was part of the routine examination with respect to the breathing difficulties that were experienced, okay. I'd now like to take you to page 431 which is an extract from Patrick's blue book. Do you see that?

WITNESS CALA: Yes.

MORRIS SC: And you'll see there 27 - 27 June 1990 at the age of three weeks it says: "Sib SIDS sleep studies normal, blood chemistry normal, barium swallow normal." Do you see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: So that barium swallow ties in with that document. Then I'd like you to go to the next entry which is 6 August 1990 at nine weeks and it says: "Torticollis to left, no tumour in--"

WITNESS HILTON: Sternomastoid.

WITNESS CALA: Sternomastoid.

MORRIS SC: "--sternomastoid," and then in the right-hand column is "Observe."

WITNESS HILTON: Yes.

MORRIS SC: Is it possible for torticollis to be related to some cerebral condition, do you know, or not?

WITNESS HILTON: All torticollis in essence means is that the head tends to be turned and tucked down towards one shoulder or other. It's often said to be associated with birth injury, bleeding into the sternomastoid muscle. Apart from that I don't know much about what the aetiology could be.

WITNESS CALA: No, and as mentioned, sometimes you get benign tumours in that muscle--

WITNESS HILTON: Yes, sure.

WITNESS CALA: --which is the last muscle going from the mastoid process behind the ear down to the sternum.

MORRIS SC: Professor Cordner?

WITNESS CORDNER: I don't know really anything more than what's already been said.

MORRIS SC: Okay. If we go to 3 September 1990: "Three months, torticollis persists, good general progress."

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: The entry is: "Observe further." Do you see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: I just now want to take you to page 526 which is the ambulance report indicating the child with respiratory difficulty and ie, what's that stand for?

WITNESS HILTON: For example - no, it's not; that is, that is. As I read it or as I interpret what I read, the baby had respiratory difficulty, that's self-explanatory and they're looking for an explanation of it or manifestation of it and they're using that intercostal recession as a manifestation of respiratory difficulty. Intercostal recession means an in-pulling of the muscles between the ribs literally. Very often if a child or even an adult is having some difficulty, particularly obstructive difficulty you may well see this in-pulling of the muscles between the ribs, as I understand it.

WITNESS CALA: It's a sign of respiratory difficulty and doesn't go to a cause.

MORRIS SC: Right.

WITNESS DUFLOU: Correct.

WITNESS CORDNER: Yes.

MORRIS SC: "Hard to wake up, has had cold"?

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

MORRIS SC: See that?

WITNESS DUFLOU: Yes.

MORRIS SC: So it's on a background of a "Cold for two days. ?" - is it "VLOC"?

WITNESS CALA: It looks like that. I'm not sure about the first marking but LOC means loss of consciousness.

WITNESS HILTON: Yes.

WITNESS DUFLOU: I think it's a downward arrow.

WITNESS CORDNER: So it could be decreased, downward arrow, level of consciousness.

WITNESS CALA: Sorry, level of consciousness, yes.

MORRIS SC: Yes.

WITNESS CALA: Yes.

MORRIS SC: And "OE," on examination, and I don't know whether you can read those other two letters?

WITNESS CALA: Patient, Pt, patient was pale.

MORRIS SC: "Patient was pale and very listless."

WITNESS CALA: Yes.

MORRIS SC: Of course we go down to the examination, the airway was clear and the breathing was deep. Do you see that?

WITNESS CALA: Yes.

MORRIS SC: We also see the buccal mucosa was pale. Is there any significance to be drawn from that?

WITNESS CORDNER: I don't draw any particular significance, no.

MORRIS SC: The skin temperature was hot.

WITNESS CALA: Yes.

MORRIS SC: Do you see that?

WITNESS CALA: Yes.

MORRIS SC: That's a note from the ambulance officer about the skin temperature.

WITNESS CORDNER: Well, he'd had a cold in the last couple of days, so maybe he has still got a bit of a fever.

MORRIS SC: Yes. The next entry I'd like you to go to is at page 533, please. This is the first entry at the hospital at 6am. Do you see that?

WITNESS HILTON: Yes.

MORRIS SC: Therein is the reference to the brother Caleb having died from SIDS, do you see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: And then history of presenting illness: "Has been snuffly past three days with dry coughs and some vomits post-bottle feeds"?

WITNESS CALA: Yes.

MORRIS SC: "Otherwise well, behaving normally, no fevers," do you see that?

WITNESS CALA: Yes.

MORRIS SC: "Coughs not--"

WITNESS CALA: Paroxysmal.

WITNESS HILTON: Paroxysmal, that is, not coming in spasms.

WITNESS CALA: Yes, I think that's what it means, yes.

MORRIS SC: "Not received any medications and has been in contact with other children, neighbours and coughs and so on," right. Then it says, "Seen by mum 3am because heard him coughing. At 4.30 mum heard him gasping, was blue round the lips, lifeless and floppy, making minimal respiratory effort." Do you see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

MORRIS SC: You'll recall I took you back to the schedule of causes of ALTE which was set out in Professor Duflou's document and this is typical of an ALTE, is it?

WITNESS DUFLOU: To me it could certainly be described as that, yes.

WITNESS CALA: Yes. Yes, it could be.

WITNESS HILTON: Yes.

MORRIS SC: To that extent this event could have been caused by a great number or great variety of disorders, correct?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

WITNESS DUFLOU: Absolutely, yes.

MORRIS SC: Including neurological disorders, do you agree?

WITNESS DUFLOU: Yes.

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

MORRIS SC: Then we have the entry "CPR not performed, later made high pitch cry, revived slightly when paramedic administered oxygen about 20 minutes later", do you see that?

WITNESS DUFLOU: Yes.

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

MORRIS SC: Is there any significance to be placed on that entry?

WITNESS HILTON: Well he improved.

WITNESS CALA: Also, 20 minutes without CPR is a long time, in terms of blood flow to the brain in particular, when the oxygen level is low.

MORRIS SC: But given that he's breathing, is it the actual level of oxygenation that's important?

WITNESS CALA: Yes.

MORRIS SC: So he's actually getting oxygen but it may be reduced, is that - reduced percentage?

WITNESS CALA: He appears, by that description of "Was blue around the lips", that to me tells me that he probably undoubtedly is hypoxic, in other words his blood doesn't have sufficient oxygen and it’s exhibiting itself as being blue, that process, whatever it's caused by, but he's observed to be blue.

MORRIS SC: Dr Cala you've had reference to these previously have you, these documents?

WITNESS CALA: I've seen them, not for some time but I have seen them.

MORRIS SC: We go down "Family history, no history of epilepsy", do you see that?

WITNESS CALA: Yes.

MORRIS SC: And also no history of neurological disease?

WITNESS CALA: Yes.

MORRIS SC: See that?

WITNESS CALA: Yes.

MORRIS SC: Then we've got immunisations, which we don't need to deal with, "Development, smiling under six weeks, laughs, localises, nearly rolls over, supports weight on legs, plays with fingers", do you see that?

WITNESS CALA: Yes.

MORRIS SC: I want you to go over to the next page which is 534, and if you see there in the first line, I think there's, "Temperature, PR" which is - is that--

WITNESS CALA: Pulse rate.

WITNESS HILTON: Per rectum.

MORRIS SC: Pulse rate.

WITNESS CALA: Sorry there's two PRs.

MORRIS SC: Two PRs, is it post-rectal?

WITNESS HILTON: Per rectum.

WITNESS CALA: PR, yeah per rectal.

MORRIS SC: We've got pulse rate, respiration rate, blood pressure?

WITNESS CALA: Yes.

MORRIS SC: Is there any significance in those?

WITNESS DUFLOU: The temperature is a bit low at this stage, 35.

WITNESS CALA: His pulse rate is high but he's suffered some event, so I would expect it to be high. And his respiratory rate is high as well, at 60 per minute is--

MORRIS SC: For an infant?

WITNESS CALA: Oh yes. But having said that, that's not a normal rate, that's much higher than normal but I concede that there would be reasons for that.

WITNESS HILTON: For an infant that age, yeah that's still an elevated pulse rate and it's still certainly an elevated respiratory rate, blood pressure is okay, temperature I agree with Dr Duflou is a bit low.

MORRIS SC: Then we go "Peripherally cyanosed"?

WITNESS CALA: That probably means he's got blue-ish fingers.

MORRIS SC: "Responding only to painful stimuli"?

WITNESS CALA: Yes.

MORRIS SC: See that?

WITNESS CALA: Yes.

MORRIS SC: And dilated pupils I can't read--

WITNESS DUFLOU: I suspect it says "bilateral."

MORRIS SC: "Bilateral reactive." And then we've got "Pulse oximetry 88%"?

WITNESS DUFLOU: Yes.

MORRIS SC: I think it's, "Room air" is it?

WITNESS DUFLOU: Yes.

WITNESS CALA: Yes.

MORRIS SC: And that indicates a suppression of his oxygenation?

WITNESS CALA: That's severely down from normal.

MORRIS SC: What should it be?

WITNESS CALA: About 98%, 99%.

MORRIS SC: 96 is a lower level?

WITNESS CALA: Slightly yes. Nowhere near 88, that's totally abnormal.

MORRIS SC: So he's given, it seems he was given oxygen via Hudson mask, you see there?

WITNESS CALA: Yes.

MORRIS SC: And we've got "After about 15 minutes became much more alert, pink on air"?

WITNESS CALA: Yes.

MORRIS SC: So he responded to the oxygen?

WITNESS CALA: Yes.

MORRIS SC: And this is I want to suggest the doctor's observation, "Moving head freely and arching back"?

WITNESS CALA: Yes.

MORRIS SC: Now that we've talked about may have been indicative of a cerebral irritation, do you agree?

WITNESS CALA: Yes.

MORRIS SC: And in brackets we have the entry "(always does this)." If this child, if the arching of the back may be indicative of cerebral irritation, can I suggest to you that the parent's observation that this child always does this, may indicate a pre-existing cerebral irritation, do you agree with that?

WITNESS CALA: Yes, possibly, it might.

MORRIS SC: Professor Cordner?

WITNESS CORDNER: I think that's a serious thought but at this point I would be deferring to a neurologist.

MORRIS SC: And particularly a paediatric neurologist?

WITNESS CORDNER: If you've got a paediatric neurologist that would be very good.

WITNESS HILTON: With respect can I just suggest that the interpretation of "always does this", is very difficult, always, all the time, every day, always in response to stimulation, always spontaneously. I've got a difficulty with that.

MORRIS SC: But the very fact that the child, if it is related to cerebral irritation, it may have a significant impact on the timing of the onset of that cerebral irritation, do you agree?

WITNESS CALA: Yes.

MORRIS SC: Now moving down, we've got the "Large anterior fontanelle, not tense, not bulging, snuffly nose", now the large anterior fontanelle, what are they talking about there?

WITNESS CALA: There's two fontanelles when a baby is born, anterior and posterior, anterior means it's at the front and it's a roughly a square shaped area of soft tissue at the upper forehead going towards the vertex of the head where the frontal and the parietal bones of the skull leave a gap allowing for growth of the skull and eventually that anterior fontanelle will close over, over months to be non-existent.

WITNESS DUFLOU: If I can just add to that, an important reason for

assessing the anterior fontanelle is to determine if there is brain swelling or cerebral oedema, it becomes bulging and tense if there's brain swelling, so there does not appear to be any here.

MORRIS SC: So by this stage there is no - that would tend to indicate that there is no issue with intracranial pressure?

WITNESS HILTON: Mm yes.

WITNESS CALA: Yes.

MORRIS SC: By all means if you wish, if we go down to "CVS", further down that page "Pulses initially difficult to get, later good pulses = good femorals", see that?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

FURNESS SC: Your Honour might I just rise at this time, my friend has elicited evidence from most of these witnesses that they would defer to a neurologist in relation to matters relevant to Patrick and the medical records in particular. My friend has provided a report of a neurologist precisely on all of these matters, now it's ultimately a matter for your Honour whether your Honour wishes to hear the evidence of the forensic pathologists about matters which have been covered by a neurologist in circumstances where each of them would defer to the opinion of a neurologist in respect of these matters. I'll leave it to your Honour.

JUDICIAL OFFICER: What do you say about it?

MORRIS SC: Your Honour given that they would defer to the neurologist and presumably - I take my friend's point and--

JUDICIAL OFFICER: Perhaps we can move on then.

MORRIS SC: If I can just take you though to the exhibit H page 46, which is the MMH autopsy report, there's no doubt that the persons performing the autopsy came up with a clinical diagnosis of encephalopathic disorder?

WITNESS CALA: My understanding of that would be that would be the suggested diagnosis from the clinical doctors, the treating doctors and it's just listed there as a prompt or a guide for the pathologists.

MORRIS SC: So is it your opinion Dr Cala in the first instance, that the child had an encephalopathic disorder at the time of death?

WITNESS CALA: Yes.

MORRIS SC: Nobody disagrees with that do they?

WITNESS DUFLOU: No.

MORRIS SC: And the encephalopathic disorder had developed but whatever it may be, whatever the disorder may be, it had developed over some months?

WITNESS CALA: Yes.

WITNESS HILTON: Yes.

WITNESS DUFLOU: Yes.

MORRIS SC: And to that extent, whether it developed at the time of the ALTE on 18 October, or developed sometime prior, is something that you gentlemen would not be prepared to speculate about, is that correct?

WITNESS DUFLOU: Correct.

WITNESS HILTON: Can you just phrase that again sorry?

MORRIS SC: With respect to - if we just go back, if the encephalopathic disorder which Patrick suffered had developed over some period, but at least since 18 October?

WITNESS HILTON: Yes.

MORRIS SC: The prior year, correct?

WITNESS HILTON: Yes.

MORRIS SC: And whether or not it developed on 18 October or prior to 18 October is not something that you as forensic pathologists would wish to speculate?

WITNESS CALA: Can I answer that, I'm not speculating, I'm going on the medical records that we've just seen and even going to the ambulance report, there's an entry, handwritten I think it is, that the child was active and dynamic I think I read, or something along those lines, written by somebody who must've been there at the time. So that's something that I would bear in mind, to say leading up to whatever - leading up to the time to whatever caused the ALTE, I had no information whatsoever that the child was anything other than a well and normal child.

MORRIS SC: But there are certain disorders as set out in Professor Duflou's list, which can lead to neurological degeneration, do you agree?

WITNESS CALA: Yes.

MORRIS SC: And you wouldn't wish to speculate as to whether the presentation - whether when we take the combination of factors together,

whether this was part of a degenerative neurological condition, would you?

WITNESS CALA: Well there doesn't appear to be any evidence that I can see in the brain report of a chronic degenerative condition other than the infarcts and the gliosis that were evident on brain examination, they are not part of a chronic degenerative process that I understand infarcts and gliosis to be, the infarcts as I've said, have been caused by an abrupt cessation of blood supply to parts of the brain and the gliosis is the scarring which follows, so those are not part of any chronic degenerative neurological condition.

MORRIS SC: Unless the chronic neurological condition triggered some epileptiform type disorder, do you agree?

WITNESS CALA: Epileptiform.

MORRIS SC: Yes.

WITNESS CALA: Yes but I'd expect to see some sign, pathological sign for that underlying degenerative condition, and I'm not aware that there was anything.

MORRIS SC: Well, there's the deterioration in the EEGs, is there not?

WITNESS CALA: Well, that's -they are, are--

WITNESS HILTON: Well, that's post.

WITNESS CALA: So, that's something - an abnormal EEG is, is something that would be a consequence following the ALTE. That would be almost expected.

MORRIS SC: The point though is, Dr Cala, you would defer - I mean, the EEGs were after the event?

WITNESS CALA: Yes.

MORRIS SC: And I think, Professor Hilton, you were seeking to guide Dr Cala to that point--

WITNESS HILTON: Mm.

MORRIS SC: --and I accept that. But, in terms of demonstrating what has happened in this case you certainly, Dr Cala, couldn't exclude a degenerative neurological condition from this child's clinical picture, could you? Or would you not wish to venture a guess?

WITNESS CALA: I think it's highly unlikely. I have seen nothing in any report that suggests that this - that's what this child has, a chronic degenerative neurological condition.

MORRIS SC: Do you express that opinion as a forensic pathologist, do you agree?

WITNESS CALA: Yes.

MORRIS SC: And you've indicated before that you would defer to an assessment by a paediatric neurologist?

WITNESS CALA: Yes, I, I would defer, but that's my view.

MORRIS SC: Now, does anybody else wish to - Professor Hilton, if the back-arching - I'm sorry, would you wish to venture an opinion as to whether some sort of degenerative neurological condition or other condition set out in Dr Duflou's list could have been - are you able to venture an opinion whether any such condition could be excluded from this clinical picture?

WITNESS HILTON: There's no indication in the clinical records available to me that this child showed any convincing evidence of a degenerative neurological condition prior to his ALTE. His progress after his ALTE is - there is - there are neuropathological stigmata here, which indicate that this child has suffered brain damage, probably of a hypoxic nature, on one or more occasions prior to his death. Now, the - there are neurodegenerative diseases of a natal nature. There's no convincing evidence that I know of in the neuropathology report that indicate that there was any such degenerative neurological - natal neurological disease, apart from this hypoxic brain damage.

And there's always a question as to what was the nature of the first ALTE, what caused it? And there's something which nobody seems to really mention anywhere in the - in the clinical notes is, his first ALTE may have been his first epileptic attack. I don't - I, I can't take it any further than that. But, certainly, he's ostensibly well, has an ALTE of something - something nasty happens, following that he has, over the next few months, a progressive neurological deterioration accompanied by fits, probably caused by the fits.

MORRIS SC: So, Dr Cala, do you agree that his first ALTE could have been caused by an epileptic fit?

WITNESS CALA: I can't answer that. I, I, I simply don't know.

WITNESS DUFLOU: Look, I don't see why it couldn't be. Certainly, the absence of a specific indicator of epilepsy on examination of the brain does not, in any way, exclude the possibility of epilepsy at any time. And, in fact, we know that this child had multiple epileptic fits, yet nowhere in the brain description is there any indication of a specific reason for epilepsy, and, and that's absolutely standard. In the majority of epilepsy-related deaths or in persons with epilepsy who die, the brain in fact is normal, with the exception of possibly changes consequent on the epilepsy.

MORRIS SC: In other words, the epilepsy causes a hypoxia, which then

results in neurological changes revealed on the CT?

WITNESS DUFLOU: That's one of the mechanisms, yes. Absolutely, yes.

MORRIS SC: Professor Cordner?

WITNESS CORDNER: Well, you're going to hear from a paediatric neurologist who will tell you how often epilepsy begins in infancy, but on a, sort of, possibility basis. You can't rule out the possibility of an epileptic seizure.

MORRIS SC: As being the cause of the ALTE?

WITNESS CORDNER: That's right.

MORRIS SC: And, therefore, the cause of the cerebral hypoxic ischemia that then developed?

WITNESS CORDNER: But I think, again, the paediatric neurologist will probably be able to frame that and contextualise it better for you.

MORRIS SC: Thank you. I'd like to take you away from Patrick now and to the issue of infection and the potential causes of sudden infant death arising out of infection. And, to that extent, as I understand it, a blood borne infection can develop into a bacteraemia or septicaemia, which can then bring about death?

WITNESS DUFLOU: Certainly, septicaemia can, can without doubt cause death.

MORRIS SC: Yes.

WITNESS DUFLOU: Yes.

MORRIS SC: Do you agree, Dr Cala?

WITNESS CALA: Yes.

MORRIS SC: To that extent, is that something that would take some time to develop?

WITNESS CALA: Yes.

MORRIS SC: Now, is it also--

WITNESS CORDNER: I think the rapidity - I think the rapidity with which septicaemia might develop, I'm not - you know, there, there, there would no doubt be a bell curve that would have shorter times and longer times and average times. So, I don't think in all cases that it takes a long time, or--

MORRIS SC: No.

WITNESS HILTON: With some exceptions, depending upon the - with respect, I'm sorry--

WITNESS CORDNER: Yeah.

WITNESS HILTON: --to keep interrupting, but depending upon the, the organism involved. And, I mean, meningococcus can produce septicaemia, if you like, and death within a very few hours.

WITNESS CORDNER: Mm.

WITNESS HILTON: But we're not dealing with meningococcus here, so that's of no relevance.

MORRIS SC: Also, there's a second mechanism of death as I understand it, and I'd like your comment upon it, which is a process by which that infection and inflammation can trigger a cardiac arrhythmia, which can trigger death. Are you aware of that postulate?

WITNESS CORDNER: Are you referring to the possibility that the bacteria may not be septicaemia but may be producing a toxin--

MORRIS SC: Yes, or a--

WITNESS CORDNER: --and that the toxin may be toxaemic and in the blood, and having potentially fatal effects? Is that--

MORRIS SC: Yes.

WITNESS CORDNER: Yeah.

MORRIS SC: The cytokine response or - your Honour, if we could get up the book, which is chapter 30 - exhibit D, your Honour? Byard, and if we go to page 689. Now, have you gentlemen read this literature?

WITNESS HILTON: All of it?

MORRIS SC: No, this chapter. I'm sorry, have you read this chapter?

WITNESS DUFLOU: I've skimmed it. I certainly haven't studied it in detail.

WITNESS CALA: Yeah, I'm with Professor Duflou on that.

MORRIS SC: I'm not suggesting that we're going to have an oral exam on it. Just the general postulate is that you can have slight infection--

WITNESS HILTON: Yeah.

MORRIS SC: --which can trigger sudden infant death?

WITNESS HILTON: You can have a slight infection which may be associated with sudden infant death and that's very much a work in progress and it's an emerging - it's a concept which is, I suppose, gathering a scientific validation as we speak.

MORRIS SC: When you talk about it gaining "scientific validation", it's the fact, isn't it, that more and more reports are coming out which tend to support this as a postulate?

WITNESS HILTON: Yes, that's exactly what I mean, that it's gaining scientific validation.

MORRIS SC: And this is information which was certainly, if it was - it was only in its very nascent stages, Professor Hilton, when you were investigating this for the purpose of the trial back in 2003?

WITNESS HILTON: Yes.

MORRIS SC: Do you agree?

WITNESS HILTON: Yes

MORRIS SC: And, since then, the science about the link between infection and the cytokine response keeps getting consolidated?

WITNESS HILTON: Yes.

MORRIS SC: Do you agree?

WITNESS HILTON: Yes.

MORRIS SC: Dr Cala?

WITNESS CALA: It appears to.

WITNESS DUFLOU: Yes.

WITNESS CORDNER: Yes.

MORRIS SC: And one of the forensic tests that can be done is to actually test tissue to identify whether the inflammatory response has been triggered, do you agree?

WITNESS HILTON: In some instances, yes.

MORRIS SC: To that extent, there's been a strong link between staphylococcus aureus and staphylococcal endotoxins--

WITNESS HILTON: Yes.

MORRIS SC: --triggering sudden infant death?

WITNESS HILTON: No, I don't think that's - I don't think that's - has this been floated as an idea? Yes. Has there been some evidence perhaps to support it? Yes. Is it accepted dogma? I wouldn't go that far.

MORRIS SC: But it certainly has been gaining ground since 2003?

WITNESS HILTON: Yes.

MORRIS SC: Do you agree?

WITNESS HILTON: Yes.

MORRIS SC: And, if one is able to identify the immune reaction through this additional form of testing, if one can identify it in the individual deceased, would that tend to assist forensically in determining whether a particular organism detected at autopsy was in fact a contamination or was actually an active bacterium within the host's body at that time?

WITNESS HILTON: I would tend to support the, the view that it was an active bacterium that was actually doing damage.

MORRIS SC: To your knowledge, Professor Hilton, was that testing to be able to identify that inflammatory response available in 2003, do you recall?

WITNESS HILTON: I think there were probably experimentalists who were actually working on it at that time and I think you may well hear from Caroline Blackwell, who would give a, a more comprehensive opinion on that than I can.

MORRIS SC: So, we'll speak to her about whether that testing was available at the time?

WITNESS HILTON: Yeah.

MORRIS SC: Certainly--

WITNESS HILTON: Can I just interrupt you?

MORRIS SC: Yes.

WITNESS HILTON: It wasn't widely available as a diagnostic tool at that time.

MORRIS SC: I understand, and the question I was going to ask you was whether it formed part of forensic pathology practice at that time to test for this inflammatory response?

WITNESS HILTON: It certainly did not.

MORRIS SC: It did not?

WITNESS HILTON: It did not.

WITNESS CALA: I agree, it did not.

WITNESS DUFLOU: It did not.

WITNESS CORDNER: No.

JUDICIAL OFFICER: Is that a convenient time, Mr Morris?

MORRIS SC: Yes, your Honour. Thank you, your Honour.

JUDICIAL OFFICER: Mr Morris, have you got any idea how much longer you're going to be?

MORRIS SC: I can assure your Honour that I'm a lot shorter than I thought I was going to be, given my friend's interjection. I would hope to be finished in about half an hour, after--

JUDICIAL OFFICER: All right, thank you. We'll adjourn for 20 minutes.

MORRIS SC: Thank you.

SHORT ADJOURNMENT

JUDICIAL OFFICER: Yes, thank you, Mr Morris.

MORRIS SC: Thank you.

JUDICIAL OFFICER: Still half an hour?

MORRIS SC: Yes your Honour. I just thought I ought let your Honour know that some documents, some treating documents have come in from Laura which we managed to obtain, they're from I think the Singleton Medical Practice, they came in this morning, I haven't had a chance to read them. They've been emailed to Ms Richards and there may be something arising out of that either for myself or other parties at the bar table. I don't know when they'll become available.

JUDICIAL OFFICER: Thank you.

MORRIS SC: Gentlemen, in relation to Laura and the myocarditis, presumably - am I to understand that if this inflammatory, infection inflammatory response is correct that even though it was a moderate level of myocarditis you could still trigger an arrhythmia?

WITNESS HILTON: Yes.

WITNESS CALA: Yes, an arrhythmic type death is known from myocarditis.

WITNESS DUFLOU: No doubt.

WITNESS CORDNER: Yes.

MORRIS SC: In relation to the slides that were taken at the - of Laura's heart, Dr Cala they were representative rather than being complete, is that correct?

WITNESS CALA: Yes, so mainly of the left ventricle, some of the right ventricle.

MORRIS SC: There was a suggestion at trial that some of the slides demonstrated necrotic tissue?

WITNESS CALA: Yes.

MORRIS SC: And does that as a forensic pathologist, does the existence of necrotic tissue in the slides, is that of any significance and if so, what?

WITNESS CALA: Necrosis or necrotic tissue just means dead tissue in a living person. You need to see that to make a formal diagnosis of myocarditis. If you don't see that, and you just have inflammatory cells literally wandering through the heart, that's not enough of a pathological change to bring it up to a standard that you require to call it myocarditis, so you need to see that necrosis.

MORRIS SC: Does anybody have anything to add to that. Professor Duflou?

WITNESS DUFLOU: No I think that's fair comment, sometimes you can have difficulty detecting necrosis, if you have a very pronounced inflammatory cell infiltrate without obvious necrosis, I believe you can still very much call it myocarditis but in this case there was both necrosis and there was an inflammatory infiltrate so I have no doubt there was active myocarditis.

WITNESS CORDNER: Can I just make one quick comment, agree with what has been said, the requirement for there to be necrosis for the diagnosis of myocarditis comes from the clinical domain, called the Dallas Criteria and so it has just been adopted in the post mortem sort of field. But I think it would be true to say that there would be pathologists who would conclude that myocarditis is the cause of death in particular cases, even if they didn't see actual necrosis. So, I know that from the little bit of research I've done into practice in Victoria and New South Wales, that pathologists have concluded myocarditis as a cause of death when they have not reported seeing necrosis.

MORRIS SC: Yes.

WITNESS CORDNER: So, so, it - it's not probably relevant, but I just thought just to be clear about it.

MORRIS SC: Thank you, Professor. Now, Dr Cala, in relation to your examination of the notes that you looked at for the purpose of forming your opinion, I take it that it's your position that there is no - from a forensic pathology perspective, there is nothing in any of the notes that you saw which demonstrated homicide, is that correct?

WITNESS CALA: That's correct.

MORRIS SC: And so, your only basis for suspecting homicide was your concern about the existence of four deaths in one family?

WITNESS CALA: Four deaths in one family where I was not satisfied with the causes of death that had been given at the time.

MORRIS SC: Now, having had the discussion that we have over the last couple of days, you would accept, I take it, that there are a number of potential causes of death arising out of other clinical conditions which could have triggered these deaths, do you agree?

WITNESS CALA: I'd like to know which ones--

MORRIS SC: Well--

WITNESS CALA: --which, which type of conditions or diseases.

MORRIS SC: Well, in the case of Caleb, a floppy larynx?

WITNESS CALA: Well, I've said I would not put that as a cause of death and I, I maintain that.

MORRIS SC: It is a potential cause of death though, isn't it?

WITNESS CALA: In theory. We've heard from Professor Duflou, 10% were - of - in one series were called the cause of death because they were more severe. But, in the case of Caleb, I'm not convinced by anything I've seen that his laryngomalacia was in any way serious. And so - the paediatrician who literally saw the child on a number of occasions was of the same view, and so I find that difficult to accept, that he goes from a condition which is relatively benign to being elevated to be undoubtedly the cause of death. I don't agree with that.

MORRIS SC: But the others in the room, do you share the view of Dr Cala, as a potential cause of death?

WITNESS HILTON: Look, I think it's, it's a factor that's got to be considered. I mean, I - in my view, that child died of SIDS with - and I don't think, with great respect, that you can draw lines in the sand and say because a child is X days old it can't die of SIDS, and if it's X plus four days old it can die of SIDS. The manifestations, as far as I can read from Roy Cummings' autopsy report -

which is perhaps not as comprehensive as an autopsy report would be today but, nevertheless, it was done and the observations were made by a senior, experienced pathologist and I have no reason to doubt the accuracy of Roy Cummings' cause of death, and I agree with it. The fact that the child had laryngomalacia is a very interesting factor. Did it play a part? It may have. Can I prove it? No, and neither can anyone else. Nor can I disprove it.

MORRIS SC: No.

WITNESS CALA: Yes, I agree with that.

WITNESS CORDNER: Look, I basically agree with that. I think SIDS is the diagnosis that I can feel most comfortable with. I sort of think of the laryngomalacia as, sort of, potentially putting this child into the category of being more vulnerable to SIDS, which is really the same as saying it has - impossible, really, to quantify a contribution.

MORRIS SC: Now, in relation to Patrick, with respect to the ALTE, I take it that everybody's position in relation to the ALTE is that there's a large range of factors which can trigger an ALTE?

WITNESS HILTON: Yes.

WITNESS CALA: Yes.

MORRIS SC: And it is difficult, if not impossible, to identify - I mean, some matters have been excluded, correct?

WITNESS CORDNER: Yes.

MORRIS SC: But as to the balance, it's impossible to identify a cause of that ALTE because there are so many possibilities and we're really at the frontier of science, is that correct?

WITNESS CALA: Well, can I just say, Patrick was extensively investigated and I won't go through it but, many, many, many blood tests, radiology et cetera, nothing was ever identified which would be called the cause of his ALTE.

MORRIS SC: Well, they excluded encephalitis, didn't they?

WITNESS CALA: Yes.

MORRIS SC: But there are other causes of encephalopathy other than encephalitis, do you agree?

WITNESS CALA: Certainly, yes.

MORRIS SC: Does everybody agree with that?

WITNESS DUFLOU: Yes.

WITNESS CORDNER: Mm.

MORRIS SC: They excluded a cardiac cause, correct?

WITNESS CALA: As best they could, yes.

MORRIS SC: And a metabolic cause, as best they could?

WITNESS CALA: Yes.

MORRIS SC: Correct?

WITNESS DUFLOU: At the time, yes.

MORRIS SC: At the time?

WITNESS CALA: Mm.

MORRIS SC: And, Dr Cala, don't get me wrong, I'm not critical of the hospital staff for their diligence in the work up, okay? But that still leaves open other causes of ALTE, which now are impossible to identify, do you agree?

WITNESS CALA: I, I don't know that I necessarily follow the last bit, but--

MORRIS SC: Okay. There are other causes of ALTE?

WITNESS CALA: Yes, there are.

MORRIS SC: Which remain open, despite the exclusionary process adopted by the hospital, do you agree?

WITNESS CALA: Yes.

MORRIS SC: Does everybody agree with that?

WITNESS HILTON: Yes.

WITNESS CORDNER: Yes.

WITNESS DUFLOU: I think it's fair to say that in about 25%, depending on some series versus others, that the cause of an ALTE is never identified.

MORRIS SC: Idiopathic?

WITNESS DUFLOU: Well, it's termed idiopathic. In other words, no cause is found but, presumably, there could be a cause for it.

MORRIS SC: And in relation to Sarah, there remains open the possibility of an

infective response? Do you agree with that, Dr Duflou?

WITNESS DUFLOU: Yes, I do, with cytokines as an example.

MORRIS SC: Professor Hilton?

WITNESS HILTON: Yes.

MORRIS SC: Dr Cala?

WITNESS CALA: It's a - it's a possibility.

MORRIS SC: And, Professor Cordner?

WITNESS CORDNER: Well, yes, but I, you know, would encompass that within a diagnosis of SIDS.

MORRIS SC: I understand that.

WITNESS CORDNER: Yeah.

MORRIS SC: And we've also got the issue of the uvula, which we discussed this morning, which we don't need to go into. Do you agree?

WITNESS CALA: Yes.

WITNESS CORDNER: Yeah.

MORRIS SC: And, of course, with Laura, we've got the myocarditis and we've been through that?

WITNESS CALA: Yes.

MORRIS SC: So, it's possible that each of these child(as said) succumbed to different health complications. Is that a possibility, Professor Duflou?

WITNESS DUFLOU: Yes, look, I certainly think that is the case. I mean, to, to a large extent, my view is as well that SIDS is an acknowledged cause of death.

MORRIS SC: Yes.

WITNESS DUFLOU: It's a symptom complex and, as such, that on its own with no other features can be the cause of death as well. But, yes, I agree.

MORRIS SC: Professor Hilton?

WITNESS HILTON: Two and two. There are two cases which are quite acceptable - would be quite acceptable, I think, to most people as examples of SIDS, and there are two other cases of death where a very plausible major

disease process was demonstrated. And I would- my own personal view is, to try and lump them all together as SIDS is an utter furphy, and I do not know where this came in, but it's certainly got in here and it's, to some extent, stuck and it's wrong.

MORRIS SC: Thank you. Professor Cordner?

WITNESS CORDNER: Well, I think the answer to your question to me is, yes.

MORRIS SC: And, Dr Cala, finally?

WITNESS CALA: Well - could you repeat your question?

MORRIS SC: That it may well be that there were four separate processes, clinical processes going on with each of the children, which could account for a potential cause of death?

WITNESS CALA: I think, with Laura, there's undoubtedly myocarditis and I've said I can't exclude that as being the cause of death. I'd be hesitant, however, particularly with the other three, to say Sarah and Caleb died of SIDS and that Patrick died of epilepsy. I'm simply unconvinced. I do not know what those three children died of.

MORRIS SC: Your Honour, I'd like to take the witnesses to exhibit C and in particular to the Pollanen report at page 4. Now, you were taken to these five integers on page 4, each of you, and in general terms do you each agree that a forensic pathologist's diagnosis of cause of death falls into one of five ratings? Is that a reasonable way of looking at it?

WITNESS DUFLOU: It's a reasonable way of looking at it. I must say, I don't consider it formally in my autopsies and my causes of death, but it - but it's absolutely valid and reasonable to look at it that way.

MORRIS SC: Professor Hilton?

WITNESS HILTON: I agree with what my colleague's just said.

WITNESS CORDNER: Yes, we don't use it as a formal tool, but it is a - it covers the basic - it covers the deaths that we deal with.

MORRIS SC: And, Dr Cala?

WITNESS CALA: I, I agree, it's a reasonable way of looking at a range of deaths, but it's not used in, in practice.

MORRIS SC: Now, in relation to the next page, page 5, and we look at the ratings that Professor Pollanen has given to each of these, Professor Duflou, do you have a view as to whether you agree or disagree with the classification which Professor Pollanen has given to that?

WITNESS DUFLOU: For Laura and Patrick, yes. For Caleb and Sarah, I, I suppose the question becomes one of, is SIDS a positive diagnosis or not? In my view, it probably can be described as such, but I certainly make the diagnosis after exclusion of other causes and then make it as a positive diagnosis, as we do with a lot of conditions. Whether I'd put it, in that case, under five or not, I'm not entirely certain.

MORRIS SC: Okay. Professor Hilton?

WITNESS HILTON: I don't think I've got anything to add. I think the no positive pathological findings times two is not strictly accurate and I agree with my colleague, Professor Duflou.

WITNESS CORDNER: So--

MORRIS SC: Professor Cordner?

WITNESS CORDNER: I didn't quite hear that. Did Professor Duflou and Professor Hilton say the five should be a four? Is that what you're saying? In using Professor Pollanen's one, two, three, four, five, what are you saying Caleb and Sarah should be?

WITNESS HILTON: Well, Professor Pollanen's progressing on something that's in a well-recognised textbook from North America and I, I agree that he's following that. Do I agree that there were no positive pathological findings in Caleb and Sarah? No, not altogether. And if he wants to use this classification, that's entirely up to him, but would I use it? No, I wouldn't.

MORRIS SC: Professor Cordner?

WITNESS CORDNER: Yes, I'm sorry, I didn't quite hear everything. I think I understand what Professor Hilton was saying. I, I am comfortable with Professor Pollanen's categorisation.

MORRIS SC: Dr Cala, you were provided with the report of Professor Cordner.

WITNESS CALA: Yes.

MORRIS SC: And you were invited to give a report to this Inquiry which is dated 26 November 2018.

WITNESS CALA: Yes.

MORRIS SC: In that regard you had the opportunity to deal with all of the comments and opinions which Professor Cordner set out in his report, do you agree?

WITNESS CALA: Yes, but I had a short time frame in which to send a response back so I didn't feel I could be absolutely comprehensive. It probably

literally would have taken me months to go through each page of Professor Cordner's report and I simply didn't have the time.

MORRIS SC: There are a number of factors with which I take it you do agree in Professor Cordner's report judging by your evidence over the last few days and that is that the science since 2003 has developed enormously for the assistance of the identification of cause of death. Do you agree with that?

WITNESS CALA: Yes.

MORRIS SC: Back in 2003 which is the time of the trial and previously with respect to each of the autopsies there are now a range of practical tools available which exceed anything that you had at the time?

WITNESS CALA: Yes.

MORRIS SC: Secondly, there has been a remarkable change in scientific understanding of the conditions which keeps getting published in the literature even as we speak. Do you agree?

WITNESS CALA: Yes, it's constant.

MORRIS SC: Constant. We've gone to a number of those areas and you would agree with the general proposition that SIDS is still an enigma which is poorly understood?

WITNESS CALA: Yes.

MORRIS SC: And really, we are at the edge of science in our current understanding?

WITNESS CALA: In the sense that there's still much that we don't understand that we need to know?

MORRIS SC: Yes.

WITNESS CALA: Yes, I agree.

MORRIS SC: And you also are aware of the work that's been done to try to improve forensic pathology practice?

WITNESS CALA: Yes.

MORRIS SC: There's been a great deal of standardisation of procedures. Do you agree with that?

WITNESS CALA: Yes.

MORRIS SC: We still have a situation where there are people such as the Victorians who are even further standardising forensic pathological practice but

that has not caught on yet in other jurisdictions?

WITNESS CALA: I can't comment on that.

MORRIS SC: Okay. One of the important developments in forensic pathological practice and something that has been very informative in recent years is the Inquiry in Canada into the Goudge Report?

WITNESS CALA: Yes.

MORRIS SC: One of the recommendations in the Goudge Report is that forensic pathologists ought properly avoid a thought process which involves "thinking dirty."

WITNESS CALA: Well, I'll accept if that came out of the Goudge Report I'm not going to argue with that.

MORRIS SC: Well, it's in Professor Cordner's report, you've read Professor Cordner's report?

WITNESS CALA: Yes.

MORRIS SC: And it's something that you haven't sought to raise in your response as a general development.

WITNESS CALA: I've heard of that term "thinking dirty" for decades. I understand what it means.

MORRIS SC: In other words, to your understanding you can approach a problem by thinking that there may have been foul play or a crime committed. Do you agree?

WITNESS CALA: Well, you might think it but that doesn't necessarily mean it's a belief. It's merely a concern or a question that you might raise.

MORRIS SC: I see, a concern or question. It's fair to say that forensic pathology in relation to SIDS is quite different to forensic pathology when it comes to the frank infliction of injury. Do you agree?

WITNESS CALA: Yes, the two are different because SIDS, the category of SIDS essentially excludes injuries being present of a significant nature.

MORRIS SC: The alternative postulated by the Goudge Report is to think truth I think was the - you other gentlemen in the room have heard of this, correct?

WITNESS CORDNER: Yes.

JUDICIAL OFFICER: I've heard of it.

WITNESS HILTON: The actual quotation is--

JUDICIAL OFFICER: I've heard of it. I've read the report.

MORRIS SC: Yes, thank you, your Honour.

JUDICIAL OFFICER: Thank you.

WITNESS CALA: Yes.

MORRIS SC: To that extent, Dr Cala, do you accept that while you can have a concern about foul play or an intentional infliction of injury, you really do need evidence to demonstrate that that has in fact occurred. Do you agree?

WITNESS CALA: Yes.

MORRIS SC: Do you accept that it is possible that in your weighting of relevant factors when it comes to the consideration of whether homicide has occurred, if you approach the problem by thinking dirty you may place undue weight on one particular feature of the case in order to justify that suspicion?

WITNESS CALA: I'm sorry, I don't really think I follow that - that line.

MORRIS SC: I'm sorry. Have you heard of diagnostic blindness, the concept?

WITNESS CALA: Yes, but perhaps if you could explain it to me.

MORRIS SC: I'll do it another way. You've got a whole heap of elements which are going to influence your opinion as to whether there's homicide or not. Do you agree with that?

WITNESS CALA: Yes.

MORRIS SC: It seems that the difference of opinion between you and the other three forensic pathologists here is the weight that you've given to the four deaths in the one family as indicating homicide. Do you accept that?

WITNESS CALA: No.

MORRIS SC: Do you think that the emphasis that you have placed on the four deaths in the one family as establishing homicide or being a basis for establishing homicide may have been influenced by the approach that you took with respect to this trial?

RICHARDSON SC: Your Honour, I object to that question. It contains a premise that this witness has given evidence that there is established homicide in this case which is directly contrary to the evidence he gave at trial and at this Inquiry.

MORRIS SC: Your Honour, I withdraw the question. You gave evidence at trial that you thought this was homicide, these four deaths were homicide but

you couldn't prove it. Do you recall giving that evidence?

RICHARDSON SC: I would object again. That doesn't accord with my recollection of the transcript. It should be specifically put to the witness.

MORRIS SC: I will, your Honour.

RICHARDSON SC: This is a witness who gave evidence that he could not exclude myocarditis.

JUDICIAL OFFICER: Yes.

MORRIS SC: Your Honour, we'll need the transcript up and if we go to pages 727 and 728. Dr Cala, this was on the voir dire and I want to take you to line 42 in which the Crown Prosecutor asked:

> "Q. Now, what I want to ask you is this. Although you cannot prove it as a fact medically, are your suspicions based upon medical knowledge or upon acting as an amateur detective?
> A. Based on medical knowledge."

WITNESS CALA: Yes.

MORRIS SC: You'd agree with me that there's nothing in the clinical records that indicates the cause of death as homicide as opposed to natural causes. Do you agree?

WITNESS CALA: There's nothing in the medical records that indicates homicide.

MORRIS SC: No. Going on:

> "Q. What degree of suspicion would you attach to your conclusion that they may have been deliberately smothered?
> A. I have a high degree of suspicion that that's what happened based on the circumstances surrounding each child's death, the essentially negative autopsy that followed each death, and therefore in combination with the circumstances of the largely negative autopsy, albeit with some caveats about Patrick's underlying condition and Caleb, who may have had an underlying laryngeal problem, that it is my suspicion that's what happened to the four children."

Right?

WITNESS CALA: Yes.

MORRIS SC: Then going on, the trial judge asks you this at 728 at line 16:

> "Q. Well, is there anything medically to link the four or even the five

episodes, Dr Cala, of a medical nature or is the fact that there has been a previous episode merely a fact which shows the improbability of the things occurring naturally, is that what you're saying?

A. What I'm saying is if you are seeking from me one global explanation to account for all four deaths rather than a diagnosis for each one which may be different from the other three, then I think that the diagnosis medically still remains deliberate smothering."

WITNESS CALA: Yes.

MORRIS SC: Can I suggest to you that your evidence here was that you suspected deliberate smothering?

WITNESS CALA: Yes.

MORRIS SC: But by the giving of that evidence can I suggest you had almost convinced yourself that there was deliberate smothering? Do you agree?

WITNESS CALA: No.

MORRIS SC: Dr Cala, is it possible that you approached this problem by giving undue weight to the four deaths in the one family, do you think?

WITNESS CALA: I gave weight to the four deaths in the one family. I don't know about undue weight. I'd ask you what you mean by undue. Do you mean unreasonable or - if I could ask you that but I gave weight to the four deaths in the one family. I couldn't ignore that.

MORRIS SC: I understand that but do you think it may have - do you think that it may have unduly affected your judgment as to what might have happened to these four children?

WITNESS CALA: I don't believe so.

MORRIS SC: Okay. Just excuse me a moment, your Honour. Your Honour, I'm not sure how I'm going for time.

JUDICIAL OFFICER: Mr Morris, I was about to congratulate you. In more than 20 years on the bench it's the first time a barrister has ever given me an accurate estimate.

MORRIS SC: Thank you, your Honour.

WITNESS CORDNER: Your Honour, can I just make a comment?

JUDICIAL OFFICER: Yes.

WITNESS CORDNER: I just wonder, you know, we are giving concurrent evidence and I believe that that's an opportunity to actually discuss things.

JUDICIAL OFFICER: No, no. We don't want you questioning each other.

WITNESS CORDNER: Well, then, in the alternative is it possible that I might ask a question?

JUDICIAL OFFICER: Who do you want to ask the question of?

WITNESS CORDNER: I do want to ask a question.

FURNESS SC: But of whom, Professor?

JUDICIAL OFFICER: Of whom?

WITNESS CORDNER: I just want to ask a question of Dr Cala.

JUDICIAL OFFICER: No, that's not appropriate. Yes?

MORRIS SC: Your Honour, on that question they are forensic pathologists.

JUDICIAL OFFICER: Yes, well, if you want to - if you want to speak to the witness and find out what the question is then perhaps you can ask the question on behalf of the witness.

MORRIS SC: Yes, your Honour. Yes.

JUDICIAL OFFICER: But we can't have the witnesses asking questions of each other.

MORRIS SC: I understand the problem. Would you mind if I just--

JUDICIAL OFFICER: No, but I think we've got some further things to get on with in the meantime and over lunchtime--

MORRIS SC: Yes thank your Honour.

JUDICIAL OFFICER: --you can speak to Professor Cordner. That will sort out Professor Cordner's problem.

FURNESS SC: Your Honour it may be convenient for me to conclude with a few matters now before my friends in the second row, question, if that is convenient with your Honour.

JUDICIAL OFFICER: Yes.

FURNESS SC: The first matter is the matter your Honour raised with Professor Cordner yesterday which is the Webber article, and since that time I think that article has been made available to the Professor and if we can have Professor Cordner's report at page 78 on the screen. Now Professor as I understand your report, there is the dot point which is a reference is it to what

Dr Cala has said?

WITNESS CORDNER: Yes.

FURNESS SC: And then it's your response in the following two paragraphs to that dot point, is that right?

WITNESS CORDNER: Yes.

FURNESS SC: And in relation to the 2008 Webber article, you refer to there having been histologically proven myocarditis in 1.8% with a range of ten days to 16 years and in 11 cases there was no macroscopic evidence of abnormality it the heart.

WITNESS CORDNER: I'm sorry, where are you reading that?

FURNESS SC: I'm reading your paragraph, the second paragraph under the dot point I've referred you to.

WITNESS CORDNER: Page 79.

FURNESS SC: No, no, 78, it's on the screen?

WITNESS CORDNER: Okay. Yes.

FURNESS SC: And the article which you've now seen, the conclusions reached in the article is that myocarditis is a rare cause of death in infancy and childhood and the majority of cases present as sudden unexpected deaths which require routine histological sampling of the heart for its detection?

WITNESS CORDNER: Yeah.

FURNESS SC: Now you referred to the case I think for a different purpose from that, am I right?

WITNESS CORDNER: I referred to it both as in how many of the cases of Webber was there macroscopic normality to the heart, that's the first thing, and the second thing was in the cases of Webber, how many presented as sudden unexpected death. They're the two things.

FURNESS SC: To draw what conclusion, relevant to your report?

WITNESS CORDNER: As a reason for why Laura did not die of myocarditis, Dr Cala expressed the view that because her heart looked normal, that was a reason why the myocarditis was incidental and not causative, so I was just saying that that's not something that is an absolute evidence of something being incidental, there are plenty of cases where a person or a child dies of myocarditis where the death, where the heart is normal and the death is sudden and unexpected, so that was the first thing and the second thing was that Dr Cala was of the view that because the video the previous day showed a

normally running around child, that the child didn't have obvious symptoms of disease, that that was another reason and then did die the next day, that that was another reason to suppose that the myocarditis was incidental to whatever caused the death and not causative of death. So I was using not only our own research but also Webber to show that in his case a not totally dissimilar number of the deaths presented as sudden deaths.

FURNESS SC: Well there are a number of other aspects of the Webber case report that I am assuming you would agree with if you considered it to be sufficiently credible for the purposes that you've described it.

WITNESS CORDNER: Well you know, I'm very happy to be taken to the points you're referring to.

FURNESS SC: Certainly. The first one is the conclusion that myocarditis is a rare cause of death in infancy and childhood, do you accept that?

WITNESS CORDNER: Well you know, I mean if you're making a distinction between rare and uncommon, I mean I'm not sure, I mean on page 596 under "Discussion", second line, "Myocarditis is an uncommon but distinct and recognisable cause of childhood death", so they're just using the word interchangeably.

FURNESS SC: Do you accept their conclusion, I'm referring to what their conclusion is?

WITNESS CORDNER: Well I'm referring to what they say elsewhere in the article, which is using the word "uncommon", I accept both of them.

FURNESS SC: So you accept myocarditis is a rare cause of death in infancy and childhood?

WITNESS CORDNER: Where rare means also uncommon.

FURNESS SC: Do you have some difficulty with the word rare Professor?

WITNESS CORDNER: No I'm just--

FURNESS SC: It's their word?

WITNESS CORDNER: --wondering why you're making such an emphasis on it, I'm happy--

FURNESS SC: This is an article that you're relying on?

WITNESS CORDNER: Yes.

FURNESS SC: And that's their conclusion, that it's a rare cause of death?

WITNESS CORDNER: And that's their way of referring to the word

"uncommon."

FURNESS SC: And what they add in page 598, they say, "What this study adds is that myocarditis is a rare cause of death representing around 2% of paediatric deaths referred for autopsy", and you accept that?

WITNESS CORDNER: Yes.

FURNESS SC: And they also refer to the age range, page 595, at the end of the first paragraph, there's reference to the age range of all cases in whom myocarditis was identified and 54% were under one year and 18% were aged one to four years, see that?

WITNESS CORDNER: Yes.

FURNESS SC: Did you take that into account, that Laura was in the 18% range?

WITNESS CORDNER: Well I'm not quite sure what you're saying, I'm not sure how relevant that is to what use I was trying to make of the data.

FURNESS SC: So it wasn't relevant to what you did?

WITNESS CORDNER: Not to the points I've made I don't think.

FURNESS SC: Under the heading "Discussion", which is on the same page, the second column, the first sentence is that "The findings of this study have demonstrated that histologically proven acute myocarditis is an uncommon but distinct and recognisable cause of death", is it your view that Laura had acute myocarditis?

WITNESS CORDNER: Yes.

FURNESS SC: Your Honour, was there anything else that your Honour wished to raise in relation to that article.

JUDICIAL OFFICER: Just one thing Professor Cordner, back on page 595, where the passage you've been taken to, where it's indicated that there were only five infants aged one to four out of the 1516 that fell into that category, and it seemed to be that there's a suggestion that myocarditis is less common in a child under the age of four than it is for children say four to ten.

WITNESS CORDNER: Yes.

JUDICIAL OFFICER: And is that correct?

WITNESS CORDNER: Yes.

WITNESS DUFLOU: Your Honour may I make one comment.

JUDICIAL OFFICER: Yes, certainly.

WITNESS DUFLOU: In relation to the paper as well. I think an important aspect is the very last sentence of the paper which is on page 598 and it points out that in the majority heart weight is normal and in almost 40% of cases there are no macroscopic cardiac abnormalities and that the diagnosis requires routine histologic sampling of the myocardium. I think it's important here that this is a sudden death of a young child and that in fact the features are as expected in a case of death due to myocarditis.

JUDICIAL OFFICER: The features of the--

WITNESS DUFLOU: Of the heart, the naked eye features of the heart.

FURNESS SC: The second matter your Honour in relation to Professor Cordner is the issue of multiple SIDS in one family and he wished to have the opportunity to have a look at some of the articles that had been gathered and I understand he has been provided with the articles that we have that were relevant and I'm not sure what research he's done himself but if we can have page 33 of professor's report on the screen?

WITNESS CORDNER: Page--

FURNESS SC: 33, and that's where you begin your discussion Professor and I took you to that on the last occasion and then it continued over the page and you made the overall point, this is at the top of that page, that as far as the research literature is concerned, more than half the subsequent deaths in families who have sustained a SIDS death, are natural deaths, with the remaining one-third a largely unexplained, not necessarily homicides. Now I was asking you whether you accepted Carpenter's view of that or indeed Bacon's or some subsequent proposition?

WITNESS CORDNER: Look that is probably deficient I suppose in taking account, both of Carpenter and Bacon, so I think being more familiar with those papers now that I'd be happy to revise that wording slightly I suppose, I think that Carpenter did a huge amount of work producing the data that he did, he classified the CONI deaths, which is the second or subsequent death in a family that's already had the index sudden unexpected death in infancy, so he classified all those second and subsequent deaths into either natural or unnatural and I think in doing that he falls into what bedevils this small area of literature, uses terminology which doesn't immediately align with the way we use that terminology, the way you use that terminology and the way other authors use that in related terminology so other authors talk about including categories of unascertained and that's where the big difference is between Bacon and Carpenter.

So to summarise and I think you've summarised this anyway, Bacon takes about half of the deaths that Carpenter called natural, Carpenter having defined natural to include accidental deaths, and he took about half those cases and put them into an unascertained or uncertain category and so there

was about 43% in Bacon of these deaths that were - he called natural, Bacon, another 43% that were - I think I've got the percentages right, that were uncertain and the rest were unnatural which meant probable homicides according to Bacon.

JUDICIAL OFFICER: Have you seen the Utah study?

WITNESS CORDNER: Sorry.

JUDICIAL OFFICER: Have you seen the Utah study?

WITNESS CORDNER: No I'm not--

JUDICIAL OFFICER: I think it was 2016 was it?

FURNESS SC: I think we provided that to the Professor, 2017 I think it was.

JUDICIAL OFFICER: 2017. In any event, it came, as I recollect, to a similar conclusion to Bacon, that the chance of a second SIDS death in the one family might be slightly elevated due to genetic or environment factors. But coming back to the problem that Professor Duflou was having the other day, it's about the same as the chance of the first one's one in a thousand, the second one's one in a thousand as well. Do you accept that? It seems to be more what Bacon was saying rather than what Carpenter was saying in that first report.

WITNESS CORDNER: So we're really talking to two issues. One issue is what is the likelihood of a second sudden infant death, sudden unexpected death in infancy, what is the likelihood of that in a family that's already had one, so that's one issue and that's a little bit dealt with in Carpenter and Bacon, and that, I think, is a lesser issue compared to the more important issue, I would've thought, for this Inquiry, which is given the existence of multiple deaths in one family, what is the relative likelihood of them being natural or homicides.

JUDICIAL OFFICER: Yes, and of course, it's fairly clear that the fact of four deaths in one family does not, cannot, by itself, prove beyond reasonable doubt a murder, but it's a matter of looking at, as the law does, the question of coincidence evidence, which is why I'm asking you those questions. Can I ask you this question about, back to the myocarditis issue? Have you ever had previously in your practice a case of a child under four dying of myocarditis?

WITNESS CORDNER: I do have in my report the cases that we were able to find in Victoria and New South Wales where myocarditis was given as the cause of death. I have certainly had such cases.

JUDICIAL OFFICER: You have?

WITNESS CORDNER: Yes.

JUDICIAL OFFICER: Of an infant under the age of four?

WITNESS CORDNER: Yes.

JUDICIAL OFFICER: How many?

WITNESS CORDNER: I couldn't - you know, I, I can't answer that question.

JUDICIAL OFFICER: Yes, okay. No, I understand that, but you have had some?

WITNESS CORDNER: Yeah.

JUDICIAL OFFICER: Dr Duflou.

WITNESS DUFLOU: I'm fairly certain I have. I can't give you the number, but it's not a particularly uncommon diagnosis for a forensic pathologist to make, in any age.

JUDICIAL OFFICER: Dr Cala?

WITNESS CALA: I, I can't give you an exact number, either, your Honour, but I think it'd be less than five in 25 years.

JUDICIAL OFFICER: Professor Hilton?

WITNESS HILTON: I can't off the top of my head remember any infant in my series dying of or with myocarditis. I've certainly seen young adults who were apparently extremely fit do perhaps slightly foolish things like going into the Sydney to Surf, City to Surf fun runs and dropping dead with, with unsuspected myocarditis and if it happens in a young adult, there's no reason it can't happen in a young child.

JUDICIAL OFFICER: Yes. Thank you.

FURNESS SC: Just to come back to the issue of sibling deaths. I think, Professor Cordner, the Inquiry provided all of the witnesses here with the Inquiry's preliminary review of literature. Do you recall that?

WITNESS CORDNER: Yes.

FURNESS SC: That contains references to all of these articles.

WITNESS CORDNER: Yes. Look, I, I don't like to be disagreeable but I think there are flaws in that literature review, that unattributed literature review. Can you tell me who wrote it?

FURNESS SC: It was put together from material that was provided to the Inquiry.

WITNESS CORDNER: The Inquiry.

FURNESS SC: Can I ask a couple of questions about the more recent articles? There has been some discussion about Bacon and Carpenter and I think you were moving away from what you'd said in your report but I wasn't sure where you had landed. If we can just come back to the Utah study that his Honour raised and that study found that SIDS rarely occurs in families, and I quote, "The full extent to which underlying genetic factors may interact with the environment leading to SIDS remains to be determined". That's that article.

WITNESS CORDNER: Well, look, I don't have that article in my mind.

FURNESS SC: Just bear with me. I'm just telling you the results of what's been found and then I'll ask for your opinion, so that's the first one. The second is a 2007 article and then that I think followed on from earlier studies and that was in relation to statistics and the difficulty with statistics. Then in 2015 the CONI PLUS program. They noted the figures as showing a slightly raised mortality but which is not statistically significant. Then if we can finally go to Professor Byard, which I think I took you to recently and his somewhat long paragraph as to a summation of the history concluded that:

> "While multiple SIDS deaths in the one family may represent a genetic component and aetiology of SIDS, for 92% of families the risk of recurrence is considered small".

That's the sort of language that's been used in more recent literature. Where have you landed after having, as you said, moved somewhat from what was in your report?

WITNESS CORDNER: Well, just to mention Professor Byard's long paragraph, as you say, I was a bit surprised to read that paragraph, that the - I think there were four references in it and they're all from the 1980s. I was a little bit surprised that there's no reference in that paragraph to any of the more recent material, so, so I just sort of put that there. It would've been nice to see a sentence saying, "Despite all the work since, this is still the best view". That would've been, that would've been sort of clarifying, I suppose, that he's dealt with everything that happened between late 1980s and, and now.

Where have I landed? I've landed in the spot that in relation to Carpenter and Bacon, they are having a robust debate about the work that they've each done, that Carpenter has, in a proper way, responded to the various criticisms that were made. I think myself there is a little bit of justification that the dichotomy of just natural and unnatural, when you include in the, when you include in the natural category things which have got levels of uncertainty about them, would be nice to tease them out. Carpenter's view is, "Well, look, the data didn't allow me to do that", and Bacon has said, "Well, I can do it and this is what I come up with", and that is that 43% natural, 43% uncertain and the rest are probable homicides.

So that's, so I rest knowing that they've got that debate going and that it's a

little bit unresolved, but I am sort of, I'm happy, I suppose, to, to live with Bacon's view and that the learning for me from that is that there is a high level of uncertainty if you're just looking at the research literature about coming to conclusions based on that, about what happened, what happened in families with multiple sudden unexpected deaths in infancy in their family.

FURNESS SC: Bacon's conclusion, and I quote, was that:

> "A family's risk for a second SIDS death is probably greater than the risk for a first death for their subgroup but that that increase cannot be quantified and is almost certainly less than that suggested by most of these studies."

WITNESS CORDNER: Sorry, so I moved on from the issue about the likelihood of a second or subsequent SIDS, which is what you talked about. I finished up talking about what is the relative risk of natural and unnatural in a family where multiple sudden unexpected deaths in infancy, so Carpenter would probably say, "Look, I think I can, I think I can do a bit better than that". He would say, "I can give you some idea of the numbers", and Bacon says, "Well, it's unquantifiable", and I don't think you can say that, well, we've got to go with Bacon because Carpenter's been discredited. I don't think that's right, and Carpenter is one of the authors on one of those other papers that you mentioned, and so he's still being published in reputable journals. They then go to Mr Bacon in the absolutely normal way that disagreement is handled in the medical literature, which is writing letters in response to articles, producing subsequent papers which produce a different point of view, so that's perfectly respectable disagreement and debate in the medical literature.

FURNESS SC: I took you to the 2015 CONI PLUS program, the 2017 Utah research and Professor Byard's statement in 2018, each of which was broadly consistent--

WITNESS CORDNER: Yes.

FURNESS SC: --that the incidence is rare or small or language to that effect. Do you accept that?

WITNESS CORDNER: Look, I think that's the latest, that's the latest view, I suppose. The first CONI paper and which is British anyway, so it's relevance here I suppose is a little bit attenuated, but it is closer in time to, you know, what was happening, well, it was closer to time to the events that this Inquiry's about. I did mention, however, that I do think the Inquiry's literature review does just seem a little unbalanced, at least in one respect.

FURNESS SC: What's that respect?

WITNESS CORDNER: There is only one purely statistical paper referred to. It refers to the literature that we've just been talking about, but the only purely statistic paper is one by Sesardic, if I got the name correct, who came to a conclusion that two infant deaths are 125 times more likely to be murder than

SIDS, and that is an author who is a philosopher publishing in a, not in a medical or statistics journal, and there is no reference - I mean, I, I think that's obviously and plainly wrong. That just sort of doesn't pass the basic common sense test, but it doesn't refer to other statistical and purely statistical literature which is addressing multiple SIDS in one family. So to that extent, given that there's only one purely statistics paper in it, it's not balanced.

FURNESS SC: I think when we sent this material out to those including yourself, we said we welcomed any contribution as to anything that should be, in the view of those that received it, included and I'm not sure that we received anything from you, but have we not, and I don't think we have, we would welcome it.

WITNESS CORDNER: No, well, I think - I mean, if, if that worked perfectly, we wouldn't have any need to gather together to talk about it.

FURNESS SC: I think there was a touch more than that topic--

WITNESS CORDNER: Well, you know, I mean--

FURNESS SC: --subject of discussion but the invitation from when we made it remains.

WITNESS CORDNER: --I'm not suggesting you didn't invite me to make a comment and I'm sorry that it's not available earlier, but I'm sure you expect that people build, build their knowledge, get prepared for--

FURNESS SC: The invitation remains open, Professor.

WITNESS CORDNER: Okay. Okay. Thank you.

JUDICIAL OFFICER: Could you send us, if there is anything - the impression that I have is that statistics should really be left out of this altogether.

WITNESS CORDNER: There you go. I'm very happy with that.

JUDICIAL OFFICER: But if you think there's anything--

WITNESS CORDNER: The answer to this is not in the statistics.

JUDICIAL OFFICER: Exactly. I'm sure that's right, but if you have got something else, then send it.

WITNESS CORDNER: Well, I don't think there's any need.

FURNESS SC: Convenient time, your Honour?

JUDICIAL OFFICER: Yes, a convenient time. What about what's left in terms of--

FURNESS SC: Your Honour, I have a few more, a couple more areas that will take no longer than my friend's half an hour, which gives me a little bit of leeway, and then I'm not sure what's happening behind me.

MORRIS SC: Your Honour, might I inquire through my friend as to whether it would be possible to get the treating records that were made available earlier, to get them over the lunch time to see whether there's anything that comes of it?

JUDICIAL OFFICER: Yes, certainly. Ms Richardson, is there anything that you want to raise this afternoon?

RICHARDSON SC: There may be, your Honour, but if it is, it will be short.

JUDICIAL OFFICER: Thank you. Mr Fraser?

FRASER: Nothing from me, your Honour.

JUDICIAL OFFICER: Ms Mathur?

MATHUR: Likewise; if anything, it will be brief, your Honour.

JUDICIAL OFFICER: Thank you. We'll adjourn until 2.

LUNCHEON ADJOURNMENT

JUDICIAL OFFICER: Yes, Ms Furness.

FURNESS SC: Thank you. Your Honour, can I first begin with the question that Professor Cordner had of Dr Cala. It has been asked and answered as far as I'm concerned. I'm not sure that my friend has another view. Certainly Ms Richardson shares the view so I'm not proposing to do anything with it.

JUDICIAL OFFICER: Okay, yes, thank you. Mr Morris, you have a different view?

MORRIS SC: Your Honour, I think it has been substantially answered anyway.

JUDICIAL OFFICER: Okay, thank you.

MORRIS SC: I think we've already got the answer but I'm indebted to Professor Cordner for raising it with us.

JUDICIAL OFFICER: Thank you. Yes, Ms Furness.

FURNESS SC: Thank you. Professor Duflou, can I refer you to your report page 47 and we might have that up on the screen. This is in relation to the cow's milk.

WITNESS DUFLOU: Yes, yes.

FURNESS SC: I take it from this that you haven't done any independent research. You've reviewed literature provided to you?

WITNESS DUFLOU: Correct.

FURNESS SC: And you haven't sought out any other literature that might be relevant?

WITNESS DUFLOU: I have not.

FURNESS SC: You indicate, in fact, you emphasise, that you've got no specific experience in this field of research?

WITNESS DUFLOU: Correct.

FURNESS SC: In those circumstances what were you seeking to do in your report about this topic?

WITNESS DUFLOU: I was provided with the references and I was asked to comment on it. Effectively from my reading there is at least some research which considers cow's milk as being possibly a factor in SIDS.

FURNESS SC: You describe it as an "intriguing possibility."

WITNESS DUFLOU: Yes, correct. It's not one which I have any independent knowledge of but considering that there's at least some work which indicates that SIDS is more likely or more common in bottle-fed infants I'm wondering if that could be a potential reason for it.

FURNESS SC: Your comments are in relation to all four children having been fed with a cow's milk-based formula and that's on page 48 in the last paragraph, paragraph 15.

WITNESS DUFLOU: Yes.

FURNESS SC: Where is that evidence if you can help me with that? Certainly there's evidence of them being fed with a formula. I'm not aware of the cow's milk-based formula evidence.

WITNESS DUFLOU: I don't know if I can answer that. I don't know. There are two possibilities, that it's information that I was provided with at the time or that it's an assumption that the formula was based on cow's milk.

FURNESS SC: In the event that there's no evidence to support that assumption do you accept that what you've said falls away?

WITNESS DUFLOU: Assuming there's no beta-casomorphin in the other formulas it may fall away in those other cases, yes.

FURNESS SC: So we just don't know what they were?

WITNESS DUFLOU: Well, as I've said, I don't know. I can't recall that part.

FURNESS SC: Let's assume for the moment that what you've said here can be supported by evidence. They were fed with the formula, all four of them, and we know that they died at clearly varying ages, significantly varying ages from 19 days to effectively 19 months.

WITNESS DUFLOU: Yes.

FURNESS SC: And again assuming that what you've said here is supported by evidence, it means that they had each ingested cow's milk over vastly different periods of time, that's right, because of their ages?

WITNESS DUFLOU: Well, at that age I think it's very common for a non-breastfed child to be fed cow's milk and its variants.

FURNESS SC: I understand that but the point is that Caleb would have been fed something, formula fed for 19 days, Patrick for four months or eight months and Sarah for ten months and Laura for 19 months so they have clearly been fed a formula over very different periods of time. Do you accept that?

WITNESS DUFLOU: Yes, correct, yes.

FURNESS SC: In order for this research to have any real relevance to this Inquiry there would have to be an acceptance that the fact that each died at a very different age having ingested some formula that had some respiratory depression effect over the different periods of time is somehow relevant?

WITNESS DUFLOU: I think the argument used by those researchers is that beta-casomorphin is - in my simplistic way of viewing it - an opioid-type substance. As part of its actions it causes some opioid effects on the body which could include a degree of respiratory depression. Considering that essentially SIDS is a multi-hit type condition if we accept the Triple Risk hypothesis then this could be an added hit if you like, an exogenous factor akin to parental smoking, et cetera, those types of conditions.

FURNESS SC: In the case of these four children they died at significantly different ages and therefore the effect of the product that they drank would have had to have been very different on each of them?

WITNESS DUFLOU: Well, I think what we do need to remove from this is Patrick and Laura. If we look at the SIDS cases, if we accept that those are SIDS cases and that this could be a contributor to SIDS, then the age difference is not hugely dramatic, as mentioned previously.

FURNESS SC: 19 days and ten months?

WITNESS DUFLOU: Fair enough. But it's not a cumulative effect that

anybody has proposed as far as I can tell, just as much as - again I return to parental smoking as a possible contributor to SIDS or a risk factor to SIDS. A parent smoking for ten months doesn't make SIDS more likely. It makes it more likely at any time.

FURNESS SC: So you're opining to the Inquiry that this is an intriguing possibility and that's as high as you put it?

WITNESS DUFLOU: That's exactly what I've written.

FURNESS SC: Thank you. In relation to the underlying evidence, if anything comes to your attention as to evidence supporting that they were indeed on cow's milk formula, that can perhaps be provided through Mr Morris.

WITNESS DUFLOU: Yes.

FURNESS SC: Can I turn to the question of medical advances. One area that has been discussed by at least two of you is autopsies. I think, Professor Duflou, you were asked and gave an opinion that the four autopsies were all adequately conducted by the standard at the time?

WITNESS DUFLOU: Yes. Some were certainly done at a higher standard relevant to the time than others but my overall view was that given the time during which they were performed, the level could be described as adequate for all of them, yes.

FURNESS SC: Thank you. Professor Cordner, I think you applied the standards of more current times against the autopsies. Is that right?

WITNESS CORDNER: It was really a purely descriptive exercise that really I think doesn't take us to any particular place but just to show that things do develop and the level in the way of standards in the late 80s. There are standards now and here they are so this is just pathology's attempt to try and contribute to more observations and detail that may or may not be of some use in helping to unravel the enigma.

FURNESS SC: But you're not suggesting that the Inquiry should consider any of the autopsies in a particular way given current standards?

WITNESS CORDNER: No, I'm not. No, I'm not.

FURNESS SC: Thank you. Many of the medical advances that each of you who commented on them described were of a genetic nature, which is hardly surprising. Leaving aside the genetic advances, because as we all know, the Inquiry is having work done in that regard, are there any other advances that you can point to that can be taken into account in some way today as opposed to, well, we do things differently now? Professor Hilton?

WITNESS HILTON: Well, I'm no longer doing it so I'm probably not the best person to ask.

FURNESS SC: Okay. Dr Cala.

WITNESS CALA: No, I can't - can't think of anything offhand.

FURNESS SC: Professor Duflou?

WITNESS DUFLOU: I think that there certainly are a number of differences, mainly in terms of the extent, the detail at which we do autopsies as the first category and then secondly is how we interpret what we find and what it means and for that matter, how we present that evidence. I think over the years there has been a very major move - and I think it has been raised on a number of occasions while I've been sitting here - the approach has really changed over time.

FURNESS SC: That sits where it is, there's nothing we can do about that in terms of looking back and seeing what was done with the children by way of clinical autopsy and circumstances?

WITNESS DUFLOU: In terms of looking back at those autopsies, no, there's nothing more that we can do but what I'm saying is that the way that the findings are interpreted can be looked at differently now.

FURNESS SC: To the extent that you are of the opinion that they should be, you've already given evidence to that effect. That's right?

WITNESS DUFLOU: Effectively, yes, and what I've written, yes.

FURNESS SC: Thank you. Professor Cordner, do you have anything different to say?

WITNESS CORDNER: The only comment I would have is of a systemic kind rather than a particular technical kind so if you're happy to hear that but one of the I think developments in Victoria is reviewable deaths legislation that means that in families where there is a second or subsequent death of a child - not just an infant but a child - then that second and subsequent death must be referred to the coroner whatever its cause. So that the - there's a formality to - introduced into the investigation, a second and subsequent death, which is a great relief to people like me, meaning that yes you do what you can in the particular case, but you know that the system that you understand is looking at that and putting it together with the previous death or deaths.

WITNESS CALA: Could I just make a comment. One noticeable new technology is the advent of radiology in forensic practice, so in Melbourne and in Sydney there's CT scanning which was not available of course back around 2003 at most centres, so that's done before the autopsy is performed, the radiographer does the CT scan, it probably only takes about a minute to do so it's obviously then a permanent record and the quality of the films is outstanding so it's reviewable, it's objective and that's given us a great deal of good information even before we even begin our autopsy examination, so

that's been a very great leap.

FURNESS SC: And that leap is not one that assists us now because it's clearly not possible to do that?

WITNESS CALA: No but I thought I'd mention it because it's done in many live centres around Australia.

FURNESS SC: Just one final matter Professor Hilton, you did the autopsy on Sarah?

WITNESS HILTON: Yes.

FURNESS SC: In the autopsy you described her uvula as normal?

WITNESS HILTON: I think I described it as being red--

FURNESS SC: Normal in size?

WITNESS HILTON: Yeah.

FURNESS SC: So it wasn't elongated?

WITNESS HILTON: Not obviously but--

FURNESS SC: Well you didn't describe it as such in the report?

WITNESS HILTON: It did not leap off the - I was going to say page, but--

FURNESS SC: No it's a difficult analogy, might start that again. You didn't see it?

WITNESS HILTON: I didn't?

FURNESS SC: You didn't see it?

WITNESS HILTON: I didn't see the uvula.

FURNESS SC: As being elongated?

WITNESS HILTON: No it didn't appear to me to be unduly elongated at the time.

FURNESS SC: Nothing further.

MORRIS SC: Just in relation to that last question, I think we've already dealt with it but that otolaryngeal study that we were talking about, demonstrated that the structures of the upper respiratory system in a child is very different to that of an adult and in fact it goes through a process of change with various parts moving into different areas, is that correct?

WITNESS HILTON: Yes.

JUDICIAL OFFICER: Ms Richardson do you have anything?

RICHARDSON SC: Not at this stage, I might wait to see if Ms Mathur has any questions.

MATHUR: Professor Hilton, you were present at the autopsy of Laura?

WITNESS HILTON: Yes.

MATHUR: After that autopsy was concluded did you have discussions with Dr Cala with respect to the findings of myocarditis?

WITNESS HILTON: Yes.

MATHUR: At the 2003 trial you gave evidence that you thought the finding of myocarditis was significant?

WITNESS HILTON: Yes.

MATHUR: Did you express those views to Dr Cala at or at a time before he completed his autopsy report?

WITNESS HILTON: Yes.

MATHUR: You were the director at that point in time?

WITNESS HILTON: Was I a director of the Institute?

MATHUR: Yes?

WITNESS HILTON: Yes I was.

MATHUR: Dr Cala was a staff specialist?

WITNESS HILTON: Yes.

MATHUR: As director, did you dictate the terms of an autopsy finding to another staff specialist at any time?

WITNESS HILTON: No, I was a director not a dictator.

FRASER: No questions your Honour.

RICHARDSON SC: Professor Hilton you set out in your report of 22 January 2019 to this Inquiry, that your views as expressed at the criminal trial remain the same?

WITNESS HILTON: Yes.

RICHARDSON SC: Is that the case?

WITNESS HILTON: Yes. I think that appears in the very last subparagraph, which reads, "In essence, given the limitations imposed by the trial process and the adversarial system, my views expressed in evidence remain the same."

RICHARDSON SC: Do you agree that you've already given evidence in your reports that were aware of what was happening with the outcome of the various tests that were done as part of the autopsy of Laura?

WITNESS HILTON: Yes.

RICHARDSON SC: In fact you reviewed the histological slides and you were involved in that as a backup to Dr Cala, you agree with that?

WITNESS HILTON: No I wasn't a backup so much to Dr Cala as I think--

RICHARDSON SC: Didn't you say you were a backup to him in that autopsy?

WITNESS HILTON: No I wasn't a backup to him at all.

RICHARDSON SC: Well Professor Hilton, in your evidence at the criminal trial, you said that you were a backup to Dr Cala?

WITNESS HILTON: A very poor choice of--

RICHARDSON SC: Can you just listen to my question, do you agree that that was part of the role you were playing that you were a backup to Dr Cala in that autopsy?

WITNESS HILTON: I wouldn't use these words now and I probably shouldn't have used these words then, I was there obviously if Dr Cala sought my assistance I was there to give it, I was there because I was interested, in view of (a) my general interest in child death and (b) my interest and involvement in the investigation or previous child deaths in that family. To say I was a backup, it's - again it's a semantic argument but I wasn't standing behind Allan waiting for him to fall over.

RICHARDSON SC: Do you agree that you felt that it was part of your duty as a director to give him professional support during the course of that autopsy?

WITNESS HILTON: Yeah.

RICHARDSON SC: You agree with that?

WITNESS HILTON: Yeah.

RICHARDSON SC: And that's what you did at the time?

WITNESS HILTON: Yes.

RICHARDSON SC: And you examined the microscopic slides of Laura's heart?

WITNESS HILTON: Yes.

RICHARDSON SC: And that both you and Dr Cala, upon reviewing those slides, you both formed the view that there was myocarditis present in the slides of the heart, do you agree with that?

WITNESS HILTON: Yes.

RICHARDSON SC: Then the question then arose is what was the significance of that myocarditis?

WITNESS HILTON: Yes.

RICHARDSON SC: After Dr Cala finished his review of the various histological testing, he drafted the remaining sections of the autopsy report, is that correct?

WITNESS HILTON: I would think so yes.

RICHARDSON SC: You commented on drafts of the autopsy report that he gave to you?

WITNESS HILTON: I can't remember specifically commenting on the draft report, but there was - can I say in the Department there was--

RICHARDSON SC: I'll ask you a specific question, that - I'll go back a step, so you agree that Dr Cala kept you informed of the outcome of the histological testing?

WITNESS HILTON: Absolutely.

RICHARDSON SC: And that you yourself looked at the histological slides?

WITNESS HILTON: Yes.

RICHARDSON SC: And you knew that this autopsy was extremely important, given the family history in this case?

WITNESS HILTON: All autopsies are extremely important.

RICHARDSON SC: This one was particularly important and you felt as a director that you had a duty to give professional support to Dr Cala in the doing of this autopsy, do you agree with that?

WITNESS HILTON: You're asking me two questions, one I've already answered, the first one, all autopsies are important, otherwise I wouldn't have spent my life doing them. The second part I feel that Dr Cala could ask my opinion, seek my opinion, take succour and solace from my opinion or reject my opinion, yes to all of the above.

RICHARDSON SC: Do you agree that this is the only autopsy where you were directly there supervising Dr Cala after the point at which he became staff specialist?

WITNESS HILTON: I would doubt that because I tended to go down to the mortuary every day and there were autopsies on every day and most of them were done by staff specialists and yes I would be there interested, hopefully a support in every case.

RICHARDSON SC: So after the histological - sorry I'll go back a step, you're aware that in the way autopsy reports are prepared, that ordinarily a first draft of the report is done where the gross or macroscopic examination has been done prior to the histological testing, you're aware of that?

WITNESS HILTON: The first report is in the nature of a preliminary report or a provisional report and that is on the gross examination, external examination, the internal examination. Now that would normally go to the coroner as a provisional type report and there's several reasons for that--

RICHARDSON SC: I'll stop you there Professor Hilton because it's really outside the scope of what we're doing. In relation to drafting the autopsy report, after the histological testing had been done, Dr Cala gave you a draft of the report for you to see the way he had written up the histological testing, do you agree with that?

WITNESS HILTON: I can't recall him doing that but if he did it I think it would be a very nice and proper way of it--

RICHARDSON SC: Is that reflected the nature of your department, that there was a collegiality in terms of professional support?

WITNESS HILTON: I'd like to think so.

RICHARDSON SC: And so you were aware at the point that Dr Cala was drafting the autopsy report, that he was proposing to list the cause of death as undetermined?

WITNESS HILTON: Yes.

RICHARDSON SC: And you were aware that in the comments section of the report that he was proposing to describe that the myocarditis might be an incidental finding, you're aware of that?

WITNESS HILTON: Yes.

RICHARDSON SC: And you were aware of that prior to him finalising the report?

WITNESS HILTON: Was I aware?

RICHARDSON SC: Were you aware that he was proposing to--

WITNESS HILTON: Yes sure, absolutely.

RICHARDSON SC: --make that notation in the comments--

WITNESS HILTON: Yes.

RICHARDSON SC: --prior to him finalising that report?

WITNESS HILTON: Yes.

RICHARDSON SC: And you expressed to Dr Cala that you agreed that the cause of death should be given as undetermined in this case?

WITNESS HILTON: This was his opinion, it was his duty to give his opinion honestly and I believe he did so.

RICHARDSON SC: What I want to suggest to you is that you agreed that the death should be given as undetermined?

WITNESS HILTON: If that was the way he wanted to give it, that is the way he wanted to give it.

RICHARDSON SC: I'm asking the question--

WITNESS HILTON: I'm answering it please, as the best of my ability.

RICHARDSON SC: I'm asking a different question, do you agree that you expressed to Dr Cala that you agreed that the cause of death should be given as undetermined in this case?

WITNESS HILTON: I agreed that he could give the cause of death as he saw fit and if that were undetermined I would agree with it, I would support it, in the sense that it's his opinion, honestly arrived at, after due consideration.

RICHARDSON SC: And do you agree that you do not have any criticism of Dr Cala in him coming to the view that the death should be recorded as undetermined?

WITNESS HILTON: I would not have criticised him no.

RICHARDSON SC: You had no criticism of him at the time, is that correct?

WITNESS HILTON: No. That is correct, no I didn't.

RICHARDSON SC: You didn't express any criticism or doubt to him at the time about the fact that he was listing the death as undetermined, do you agree with that?

WITNESS HILTON: That was his duty and his right if that's how he saw it and I would support him then, I would support him now.

JUDICIAL OFFICER: Mr Fraser, having heard everything, have you got anything?

FRASER: Still no questions your Honour.

JUDICIAL OFFICER: Anything?

FURNESS SC: No your Honour.

JUDICIAL OFFICER: Mr Morris, do you have anything?

MORRIS SC: No I don't your Honour.

JUDICIAL OFFICER: Then we can adjourn the Inquiry. Thank you gentlemen for coming, I appreciate the time that you've taken to help us with this Inquiry, and you have been helpful, so thank you very much.

<THE WITNESSES WITHDREW

FURNESS SC: Just before your Honour adjourns, Mr Morris and those representing Ms Folbigg, had provided a number of statements from Professor Blackwell and Professor Clancy, and arrangements have been made for Professor Blackwell to give evidence, however we have had some difficulties receiving I think a response from Professor Clancy.

MORRIS SC: I'll make some inquiries.

FURNESS SC: Perhaps I can leave that with you but we certainly have Professor Blackwell tomorrow. I'm not sure about Professor Clancy.

MORRIS SC: I'll follow that up your Honour.

FRASER: Just before your Honour adjourns, just out of courtesy, I think given where the evidence is to be heard tomorrow, my instructions are we won't be in attendance tomorrow unless that causes any inconvenience.

JUDICIAL OFFICER: That doesn't cause any inconvenience, Mr Fraser.

FRASER: There are some document requests that we will continue to assist with for those assisting the Inquiry.

ADJOURNED PART HEARD TO FRIDAY 22 MARCH 2019