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Monday, 5 November 2012

(9.30 am)

(Delay in proceedings)

(9.40 am)

PROFESSOR BRIAN NEVILLE (continued)

Questions from MS ANYADIKE-DANES (continued)

THE CHAIRMAN: Good morning, professor. Ms Anyadike-Danes?

MS ANYADIKE-DANES: Good morning, professor.

Professor, there are some points I have been asked to go back and deal with and ask you to assist with, some of which may be slightly new; others may be to clarify things that have already been said.

A series deals with differential diagnoses.

If we just run through the differential diagnoses or, at least, the working diagnoses that the medical notes and records disclose. The first is the GP, which isn't really a diagnosis, but it's a query of whether Claire had had a further fit or that there was some sort of underlying viral issue, and the reference for that is 090-011-013, not to be pulled up.

Dr O'Hare, at 8 o'clock the previous evening, thought the problem was a viral illness. She also considered encephalitis, but she struck that out, and the reference for that is 090-022-052, and I'm going to come back to Dr O'Hare and her evidence in a minute.

1 Dr Sands, at the ward round at 11 o'clock on the
2 Tuesday morning, he thought non-fitting status, and
3 apparently also at that time thought encephalitis,
4 although it wasn't recorded then. And subsequently
5 thought and added encephalopathy. The reference for
6 that is 090-022-053.

7 Dr Webb, when he saw Claire, thought non-fitting
8 status epilepticus. The reference for that is
9 090-022-055.

10 So the first question I'd like to ask you is: what
11 comment can you make about those diagnoses at each of
12 those three times? The first is on admission at
13 8 o'clock on the Monday evening. The second is at the
14 ward round at 11 o'clock, or thereabouts, on the Tuesday
15 morning. The third is throughout the rest of the day.

16 MR SEPHTON: My learned friend should make clear that
17 Dr Webb was revising his opinion by 5 o'clock in the
18 evening, so to suggest that his view was non-convulsive
19 status epilepticus throughout the day is not fair.

20 MS ANYADIKE-DANES: Sorry, I'm not sure that I had indicated
21 Dr Webb thought that throughout the day; I said when
22 he had seen her. We can pull it up, 090-022-055.

23 MR SEPHTON: If you look at the transcript, it says:

24 "The second is ward round at around 11 o'clock. The
25 third is throughout the rest of the day."

1 MS ANYADIKE-DANES: That's a question I've asked
2 Professor Neville, but let's take it from the medical
3 notes and records.

4 THE CHAIRMAN: It's a multiple part question. Are we not
5 better doing it at the different times instead of asking
6 Professor Neville for a multiple-part answer to a
7 multiple-part question?

8 MS ANYADIKE-DANES: Yes, I am asking for a multiple-part
9 answer to a multiple-part question because those are the
10 differential diagnoses, the range of them. And
11 in relation to Dr Webb, I have just pulled up the
12 medical notes and records where you see:

13 "22 October, seen by Dr Webb [this is Dr Stevenson's
14 note]. Still in status."

15 And the only status reference that we had was
16 Dr Sands' note at the ward round, 090-022-053, which is,
17 if you see it there, "non-fitting status". So I had
18 maybe wrongly interpreted Dr Webb to be agreeing or at
19 least confirming that Claire, at that time, was still in
20 status, meaning non-fitting status epilepticus.

21 But if I can ask you this then: if we start with
22 when she was admitted at 8 o'clock, Dr O'Hare's view at
23 that time is a viral illness having considered and
24 apparently rejected encephalitis; can you express
25 a view?

1 A. Yes, I think a viral infection is very likely, though
2 of course it doesn't explain all of the problems. But
3 nevertheless, it's quite likely. I think encephalitis
4 was mentioned in the same breath, wasn't it?

5 Q. It was, and then she has crossed that out in her note,
6 and one sees that at 090-022-052.

7 A. Yes. Well, it remains a possibility for what had
8 occurred in this situation. It just is a little bit
9 less likely because the child had had previous illnesses
10 before, but it doesn't actually preclude it.

11 Q. Do you think therefore she perhaps should have retained
12 it?

13 A. Yes.

14 Q. Thank you. Then the next time is at the ward round
15 which happens about 11 o'clock, and that is Dr Sands.
16 If we pull that up at 090-022-053, he has "non-fitting
17 status", that's as recorded by Dr Stevenson. His
18 evidence was he had also discussed during that ward
19 round encephalitis, but for one reason or another it was
20 not recorded. But he subsequently, after a discussion
21 with Dr Webb, added "encephalopathy", and while he was
22 doing it added the "encephalitis" that he says he had
23 previously discussed at the ward round. So those are
24 the three there. We're not entirely sure when the
25 latter two, "encephalitis/encephalopathy", were added by

1 Dr Sands. It is his hand, but in any event that's what
2 he considered to be the differential diagnoses. Can you
3 comment on that, at that time, which is 11 o'clock, on
4 the information he would have had or could have had?

5 A. Non-fitting status would be possible, but I think a bit
6 unlikely in the context of having had no seizures for
7 that length of time. And encephalitis remains
8 a perfectly reasonable possibility. There's nothing
9 different about encephalopathy, it's just another
10 affection of the brain, it doesn't add any further
11 diagnosis.

12 Q. So at this stage what else, so far as you're concerned,
13 might have been included?

14 A. Oh, I think a rise in intracranial pressure. There were
15 other things that could be excluded, I think, by
16 CT scans, which were not.

17 Q. Yes. And those things that could be excluded, are you
18 indicating that perhaps they should have been included
19 so that tests could be carried out to see whether
20 they --

21 A. Yes. Either that night or probably the following
22 morning.

23 Q. So we're clear, the following morning would be --

24 A. The 22nd.

25 Q. This ward round is on the 22nd.

1 A. So it's the 22nd, that morning.

2 Q. Yes. Since we're clear, you have said that the viral
3 illness that Dr O'Hare at 8 o'clock on the evening of
4 the 21st had included was reasonable enough, and
5 it would have been appropriate for her to have retained
6 her thought about encephalitis. Given what you have
7 just said about what might have been included in this
8 note after the ward round, could anything else in your
9 view have reasonably been included by Dr O'Hare at that
10 time, given the information that she had available to
11 her?

12 A. Oh, I think hyponatraemia wasn't in that group, was it?
13 So I think that would be another reasonable assumption,
14 yes.

15 Q. Thank you. Then Dr Webb, he sees Claire at 2 o'clock,
16 so later on that day of the 22nd. It's not entirely
17 clear if he saw her at any time after that -- I mean,
18 before his note at 5 o'clock -- but in any event, we do
19 have his notes for 2 o'clock and 5 o'clock. His view
20 appears to have been continuation of the non-fitting
21 status. Is there anything else that you think, at that
22 stage, he could reasonably have been considering as
23 a differential diagnosis?

24 A. Well, in clarifying that diagnosis, obviously an EEG is
25 required, really.

1 Q. But given that that had not happened?

2 A. Then I think that the potential swelling of the brain,
3 cerebral oedema, remained a possibility which hadn't
4 been excluded, and as we now know, no further tests were
5 done until much later.

6 Q. Yes. But if we stick in their time, if I can put it
7 that way, you mentioned hyponatraemia, I think, earlier
8 in relation to Dr O'Hare.

9 A. Mm.

10 Q. At 8 o'clock, she wouldn't have received any serum
11 sodium result at all.

12 A. No.

13 Q. That didn't happen, so far as she's concerned, until
14 around about midnight, I think.

15 A. No, but the child had been vomiting --

16 Q. Yes.

17 A. -- and had lost speech and so was significantly sick.

18 Q. Yes.

19 A. So I think there's a reason for going along that line as
20 well as a number of other lines.

21 Q. Yes. Do you think that anybody after her should have
22 retained the possibility of hyponatraemia?

23 A. Yes. I think it should have remained with them and they
24 obviously seem to have thought that they might have done
25 the further test the following morning, but didn't.

1 Q. Professor Young, who is a consultant biochemist and was
2 asked by the medical director in 2004 to look at Claire,
3 to review Claire's medical notes and records. It was he
4 who had a concern that hyponatraemia may have played
5 a part in Claire's death. He gave evidence at the
6 inquest and, in the course of that, he said that Claire
7 had the potential for electrolyte imbalance. That's to
8 be found at 091-010-059.

9 When you were just answering me then and saying that
10 you thought that they might have started off with
11 hyponatraemia as a possibility and, indeed, retained
12 that, do you think that Claire had a potential for
13 electrolyte imbalance?

14 A. Yes. She had a neurological illness and became acutely
15 unwell, and thus she was in that group who might do
16 that.

17 Q. And if that's the case, how does that link in with your
18 answer that they should have thought of hyponatraemia
19 and retained that as a possibility? Are those two
20 things connected, the fact that she might have had
21 a potential for electrolyte imbalance?

22 A. Yes, that's the same thing.

23 Q. Thank you. Just for completeness -- although it wasn't
24 a working diagnosis; it's one of the things I've been
25 asked if you could comment on -- in the autopsy report,

1 the pathologists have concluded -- and we can pull that
2 up, 090-003-005. You see there, it says under
3 "Comment", if we leave aside the neuronal migrational
4 defect and see:

5 "Low grade sub-acute meningoencephalitis."

6 Leaving aside that this is what the pathologists say
7 they have found on examination -- and we have experts
8 to consider that point -- from your point of view, was
9 Claire's presentation consistent with that?

10 A. Her primary presentation was with cerebral oedema.

11 Q. Yes.

12 A. That was attributed to hyponatraemia. I think there's
13 some doubt about the low grade, sub-acute
14 meningoencephalitis.

15 Q. I understand. Then if we move on through the different
16 views that have been expressed. Dr Dewi Evans, who's
17 a consultant paediatrician -- and he was an expert for
18 the police, the PSNI -- he consulted with an intensivist
19 consultant paediatrician, Dr Dawn Edwards, and she
20 expressed certain views as to Claire's presentation.
21 I wonder if you could comment on that. It's to be found
22 at 097-001-001.

23 It's a very short piece and this is a record of
24 a communication between, as I understand it,
25 Dr Dewi Evans and the PSNI. It is, as it states, that

1 he has consulted with her and she confirmed that, and
2 these are her three views. I wonder if you can comment
3 on that. This relates to Claire's presentation as she
4 was admitted, if I can put it that way. And she says:

5 "Postictal abnormalities disappear at least by 3 to
6 4 hours."

7 Would you accept that?

8 A. I think you're getting really quite mixed messages here.
9 We don't know this child was postictal and the notion
10 was, I think, that she was in continuous status.

11 Q. Yes.

12 A. So I'm not sure what "postictal abnormalities" means.
13 Certainly their disappearance by three to four hours, if
14 she actually has those -- it's usually much quicker than
15 that as well. So I'd be -- I think what she may be
16 referring to is the sluggish pupil reactions, which
17 occurred, and which continued to be sluggish pupil
18 reactions. That, I think, is more suggestive of a rise
19 in pressure than it is of something which comes and
20 goes. But we don't know that anything was coming and
21 going.

22 Q. If we pause there. I think one of the concerns, or the
23 queries, was that she had had some kind of seizure, and
24 what was being seen was, if I can put it in layman's
25 term, the after effects of that. And when they took her

1 to the Royal, that's actually what might have been being
2 seen or considered to be the case. So I think the issue
3 is: is that consistent with how she continued to
4 present? And my understanding of what this note is
5 recording is that Dr Edwards is saying, no, she doesn't
6 think it is consistent because if it was something like
7 that, then she would have expected the effect of that to
8 have disappeared at least by three to four hours.
9 I think that's the first point. I think your answer
10 was: well, if it was something like that, you actually
11 would have thought it would have disappeared even
12 earlier than that.

13 A. Yes, because it was quite a short fit, if it was.

14 Q. Then to follow on from that, it's her second point,
15 which is she would have expected it to have disappeared
16 in that period and that problems remained at 0900 hours,
17 so that's the following morning, if I can put it that
18 way. She considered that to be an indication of
19 seriousness, and if there were problems remaining like
20 that, she would be worried if that happened even just
21 after an hour.

22 A. Yes.

23 Q. Can you comment on her, so far as you can, observations
24 at points 2 and 3?

25 A. No, I would agree with both of those, those points.

1 Q. Thank you.

2 A. And it accords with the assessment of the patient that
3 they were looking at. She was seriously unwell.

4 Q. Yes. When you were giving evidence for us on Thursday,
5 you had discussed a developing cerebral oedema, and
6 I think it was my term, the tipping point, but in any
7 event it was in the context of not waiting before you do
8 a CT scan because you don't necessarily know how much
9 time you've got. In fact, a CT scan will be the very
10 thing to tell you how much further scope there is for
11 swelling of the brain.

12 A. Yes.

13 Q. And I think the reference to that in the transcript is
14 1 November, page 106, and I think it starts at line 3.
15 That's where I ask you about the tipping point:

16 "Is that because there is a certain space between
17 the brain and the skull?"

18 And you say:

19 "Yes, that's right."

20 I ask you how you would know that you were getting
21 to the end of the amount of available space for swelling
22 and you say by a CT scan.

23 I wonder if you could help us by reference to
24 a schematic that we had when we referred to an earlier
25 case, which is Adam Strain, and it's to be found at

1 300-088-186. If you see there, it's just a schematic,
2 but in the first one, it's setting out the normal
3 intracranial contents and you see the space with the CSF
4 and where the skull is and the brain. In the second
5 one, you see the brain bulging up against the skull,
6 pushing down through the foramen magnum. When you
7 talked about that, that it can happen quite quickly, the
8 traumatic effects of it, can you explain that in any way
9 in relation to either of these schematics?

10 A. Yes, I think for these -- these show the effect of
11 figure 1(a) being normal and figure (b) with the skull
12 being expanded and ... What you can't quite get the
13 picture of is how fast it will rise --

14 Q. Yes.

15 A. -- but it does rise very quickly at the end.

16 Q. Does that differ very much from child to child?

17 A. No, I don't think so.

18 Q. And as it is getting close towards the maximum ability
19 to expand without damage being done, what are the signs
20 of that? So before it actually gets to the position of
21 figure 1(b), what are the evident signs of that
22 happening?

23 A. The signs fundamentally are reduction in conscious
24 level. There may well be attacks, and those attacks may
25 be of extension of the neck, sometimes with gritting of

1 the teeth and sometimes with eyes rolling upwards.

2 Q. Would the presence of papilloedema be an indication of
3 that?

4 A. Papilloedema is very late in this process, so that you
5 would expect to be spotting this before papilloedema had
6 appeared, and if you had papilloedema you'd know you'd
7 probably had it, you know, you were beyond the point of
8 no return.

9 Q. The reason I ask you that is because of part of
10 Dr Webb's note when he examines Claire at 2 o'clock that
11 afternoon on the Tuesday. We see it at 090-022-054. If
12 you see in the first part of it, he talks about how the
13 optic discs are pale, and then he records:

14 "No papilloedema."

15 Which is from where the pointer is there. From what
16 I understand you to be saying, that doesn't necessarily
17 exclude a developing cerebral oedema.

18 A. No, far from it. It's what you would expect.

19 Q. At that stage?

20 A. Yes.

21 Q. Then you went on to discussed raised intracranial
22 pressure and in relation to its effect on the PCO₂s, and
23 I wonder if you could help us with that. We see that
24 in the transcript at pages 181 and 183. If you look,
25 starting at line 11, when you had made the note at 15:

1 "It likely to have reduced her conscious level and
2 therefore [this is in relation to the 12 milligrams of
3 midazolam] reduced her breathing and increased her
4 PCO2s."

5 And then I ask you at 183 at line 7 about the
6 relationship between that increase and her intracranial
7 pressure. Then you talk about it rising potentially to
8 70 to 80 micromoles and hyperventilation is something
9 that can be applied to bring it down.

10 We can see what it was at intensive care. That's to
11 be seen at 090-057-206. It's the set right down at the
12 bottom, so by "suction", there we are. Then if you see
13 the second line, "PCO2s". If that can be highlighted,
14 just straight across the line. That gives the
15 recordings. Now, apart from the one right at the end,
16 which is at 18.15, I believe, it's not anywhere near the
17 level that you had talked about. Is there any reason
18 why that would be the case?

19 A. It moves around a bit, doesn't it?

20 Q. It does.

21 A. But in general, it's low and ...

22 Q. In fact, if you see by 6.22 in the morning, it seems to
23 be either 79.2 or 74.2. It's difficult to see.

24 A. Yes.

25 Q. I'm wondering, in the light of what you had said,

1 whether you can help explain that. There is a note that
2 Dr McKaigue makes in Claire's medical notes and records.
3 One can see that at 090-022-059.

4 A. These are all intensive care, aren't they?

5 Q. Exactly.

6 A. So we don't really know what happened --

7 Q. That's why I'm pointing this out to you. If we look
8 halfway down it, says, "In PICU, hyperventilated". And
9 then if we go down to the bottom of that section, it
10 says, "PCO2, 79.2". And that's the figure that we saw
11 right at the end of that series.

12 But what I'm really asking you is: can one infer
13 anything about the likely levels of her intracranial
14 pressure in the afternoon or the evening of the 22nd by
15 looking at that series from intensive care?

16 A. I don't think you can, really. I think it obviously was
17 likely to fluctuate, but I can't predict that.

18 Q. No. Well, if, for example, they had done the very thing
19 that you had indicated to the chairman that they could
20 have done to try and assist, which is ventilated her,
21 and I think you had said that if they were going to do
22 that, they would be doing that in intensive care because
23 that's not something that would be done on the ward. If
24 that had happened, is that something that could have
25 affected her figure so one can't necessarily

1 deduce anything from those figures about --

2 A. Yes, if you hyperventilate, then of course you've taken
3 the CO2 down, and that's ...

4 Q. That's what it seems to suggest if you look at that note
5 that they had done, although when they started that
6 isn't entirely clear. Notwithstanding that, if it ends
7 up at 79.2 in the evening of the Wednesday, is that
8 simply because all measures at that stage had failed?

9 A. I suppose so. I'm just not completely sure why it
10 should have suddenly risen.

11 Q. We can bring it up again. 090-057-206. If we highlight
12 the "suction" section right at the bottom and if you
13 could put an indicating line against the PCO2 right
14 across the series. I should say that at 18.25, it's
15 about the time they did the second brainstem test.

16 A. Right. So they may well have been letting the PCO2 rise
17 in order to test her response.

18 Q. Well, it's not clear. If one looks at where it is
19 earlier in that series, you can see it's 53, 42, and
20 then it goes up to the 74. But it sort of moves around
21 a little bit, and all I'm trying to see -- because
22 I think that some have asked about it -- is whether
23 anything reliable can be taken from this series once she
24 gets into intensive care and is being treated to assist
25 with what her intracranial pressures might have been

1 earlier? That's the point of putting it to you.

2 A. It looks as though they have hyperventilated her, that
3 although that was successful, it's too late.

4 Q. It seems that Dr Steen has also mentioned towards the
5 end, which is consistent with that 70 figure -- she
6 refers to it at 18.25 as being 70. And the reference
7 for that is 090-022-061. But I think from this, it's
8 clear that it was high right at the end.

9 A. Yes.

10 Q. The point that I was putting to you, and I think
11 you have answered it, is that you can't necessarily
12 deduce anything about her earlier pressures from looking
13 at this series.

14 A. No.

15 Q. And you are still of the view that raised intracranial
16 pressure is something they should have had in mind
17 earlier.

18 A. Yes.

19 Q. Thank you. Sorry, if you just give me a moment, I think
20 something has come up. If you're going to perform
21 brainstem tests, do you stop hyperventilation?

22 A. You stop hyperventilation and one part of the test is to
23 allow the CO2 to rise.

24 Q. If that's the case, if there's a 6.22, the first
25 brainstem test was done at 6 o'clock in the morning, and

1 the second was done at about 6.25/6.30 in the evening.
2 And on that basis, would that account for those higher
3 scores at those times so far as you can tell?

4 A. They could have done.

5 Q. Thank you. Then I wanted to ask you something in more
6 detail about the medications that were prescribed and
7 administered to Claire. The last time you were giving
8 evidence, an issue arose over the onset of action of the
9 various medications and how long the effect would last.
10 Dr Aronson, as I've mentioned, has been retained by the
11 inquiry to assist with the medications and their likely
12 effect, and he has provided a report and we are seeking
13 some further information from him.

14 In his report, he does deal with three of the
15 anticonvulsants in terms of when the onset of action
16 would be for diazepam, and one finds that at
17 237-002-008. He says the onset of action would be --
18 you can see it there. Just under (b):

19 "I would expect the onset of action of diazepam to
20 occur within about 10 to 30 minutes."

21 And then under (c) he says:

22 "The effect of a single dose would last as long as 1
23 to 2 days."

24 So that's diazepam.

25 In relation to IV phenytoin, he deals with that at

1 237-002-009, and he says that the phenytoin, under (f):

2 "The onset of action for phenytoin, for an
3 intravenous dose, would be 30 to 60 minutes. The effect
4 of that would last for up to 24 hours."

5 As it happens, Claire got two amounts of phenytoin,
6 she had the loading dose and she had the infusion.

7 Then in relation to midazolam, he deals with that at
8 237-002-013. He says that the midazolam -- the onset of
9 action, under (v), is about two minutes after an
10 intravenous injection. He doesn't deal with how long it
11 stays in the system because that wasn't an issue
12 because, in fact, the midazolam continued by infusion up
13 until the time of her collapse. So he wasn't
14 particularly asked that question, but we are seeking
15 some further information from him.

16 The reason for saying that is there was some concern
17 that that information wasn't before us when you were
18 dealing with the medications. So that's how long
19 Dr Aronson thinks. What I would like to ask you,
20 though, is that the rate of the phenytoin infusion, that
21 was commenced at 2300 hours, was prescribed, and we can
22 see that at 090-022-054. It's the second:

23 "Phenytoin 2.5. 12 hours equals ..."

24 And then there's a calculation. So the rate is
25 prescribed. If you look above it, which is the loading

1 dose, there's no prescription for the rate of infusion
2 of that loading dose.

3 The paediatric prescriber, which we understand was
4 available to the doctors to assist them, says at
5 311-023-014 -- I think it's there. I think it refers to
6 it being a "slow push of phenytoin" -- there you are --
7 and it gives you the rate.

8 In your view, should the rate for that loading dose
9 have been prescribed?

10 A. Well, it's normally given, I think, over 15 to 20
11 minutes and it's done with an ECG being recorded at the
12 time. I think it's well enough known amongst paediatric
13 circles as to how you do this. So I'm not absolutely
14 sure that it's necessary.

15 Q. If it was a junior doctor doing it, a very junior doctor
16 doing it without supervision --

17 A. Then it would be so -- I suppose you could feel the need
18 for that.

19 Q. You've referred to it done with an electrocardiogram.
20 Dr Aronson's report does refer exactly to that. It's at
21 237-002-012. He says:

22 "During the intravenous administration of phenytoin,
23 continuous monitoring of the electrocardiogram is
24 essential. However, there is no need to monitor
25 continuously after the end of an infusion if there is no

1 evidence of cardiac toxicity during the infusion and for
2 about 30 minutes after. Nevertheless, it is wise in
3 such cases to do so."

4 Would you accept that?

5 A. Yes, I would agree that it's not absolutely necessary.

6 Q. No, what he said is -- sorry, just to be clear, he said
7 two things. He said it is essential to do it while
8 you're continuing to infuse.

9 A. That's true, yes.

10 Q. And then you wait after the conclusion of that and for
11 about 30 minutes to make sure that you've got no adverse
12 reaction, if I can put it that way, and then you don't
13 have to, although he considers it wise to do so. My
14 question is: would you accept both those things?

15 A. Yes, I accept them.

16 Q. So it is essential to do it while you are actually
17 infusing?

18 A. Yes.

19 Q. Is that something that should be noted? Because there
20 appears to be a note of that happening for the
21 2300 hours administration, which is at 090-040-138, but
22 there's absolutely no note of that happening for this
23 dose at 2.45.

24 A. Is the second dose a slow infusion?

25 Q. Yes.

1 A. That's a different matter.

2 Q. So you wouldn't do one for the loading dose?

3 A. You would do it for the loading dose; you would not do
4 it necessarily for the subsequent dose.

5 Q. They seem to have done it the other way around. At
6 least there's absolutely no note of it being done for
7 the loading dose, which is in fact the overdose, if I
8 can put it that way, there's no note of that, but there
9 is a note for the subsequent one.

10 A. Yes. Well, I think that should have been mandatory.

11 Q. It should have been mandatory?

12 A. Yes.

13 Q. In fact, I think Dr Aronson has also referred us to the
14 product information at 237-002-038. I think you can
15 see, under "Method of administration", it says:

16 "Continuous monitoring of the electrocardiogram and
17 blood pressure is essential."

18 And it goes on even to say that:

19 "Cardiac resuscitative equipment should be available
20 and the patient should be observed for signs of
21 respiratory depression [and so on]."

22 Would you accept that?

23 A. I think that may be overdoing it a bit. I think the
24 primary push of dose is where it's really important, but
25 there's probably no reason for removing an ECG if

1 you have one running, but the major problem is going to
2 be in the first 15, 20 minutes, and the subsequent short
3 time afterwards of about half an hour.

4 Q. Then Dr Aronson refers to something where he says that
5 we should actually seek a clinician's view on it, and we
6 see it at 237-002-010. This is an issue as to whether
7 the overdose of phenytoin could have affected her
8 presentation and may have had a depressing effect or
9 a lowering effect, if I can put it that way, on her
10 Glasgow Coma Scale.

11 He says that if it had had that, or it was thought
12 that it could have had that, then it wouldn't
13 necessarily be a reason for withholding effective
14 treatment, but the clinician who'd administered it
15 should make an allowance for its effects when he is
16 recording the neurological markers of progress; would
17 you accept that?

18 A. Yes.

19 Q. Obviously, they didn't appreciate there had been
20 a phenytoin overdose. That's the first point. But even
21 if they had, how would you be able to factor that into
22 Claire's presentation at that time?

23 A. Her Glasgow Coma Scale score.

24 Q. Yes. I appreciate that, professor. What I meant to say
25 is: how would you know how much allowance to make for it

1 when you were calculating her score?

2 A. You'd look for a potential drop and expect it to rise
3 again after one to two hours. But as I say, I don't
4 think phenytoin is a particularly sedative drug, so I'm
5 not sure that it's very relevant.

6 Q. One of the issues that I had asked you about on Thursday
7 was what you thought the likely effects of administering
8 the 635 rather than the 432 of phenytoin --

9 A. Yes.

10 Q. -- and you deal with that at pages 174 and 176. We
11 don't really need to pull them up; I'm doing it for
12 reference purposes. Essentially, you're saying that you
13 don't think it necessarily would have had very much
14 effect. I asked you that particularly in relation to
15 the seizure at 15.25. Maybe if I can find your answer
16 in the transcript to that. I think that might be
17 relevant to have up. That might be page 176.

18 A. Can I be reminded of the timing of ...

19 Q. Of the seizure? That's 3.25 in the afternoon of the
20 Tuesday.

21 A. I see the timing of it, but when was the phenytoin --

22 Q. The phenytoin was given at 14.45.

23 A. And the question is?

24 Q. Perhaps what I'd better do is put up what Dr Aronson
25 thinks in relation to that administration because

1 you have expressed a view on that. It's to be found at
2 237-002-011.

3 He says that:

4 "Toxic concentrations of phenytoin can be associated
5 with paradoxical seizures, but it is impossible to say
6 in Claire's case whether the seizure at 15.25 was due to
7 phenytoin toxicity, an underlying infection,
8 hyponatraemia, some other cause, or a combination of any
9 of these."

10 But nonetheless, although he's not able to
11 disentangle all of that, in terms of whether in
12 principle a toxic concentration -- he considered that to
13 be a toxic concentration -- could be associated with
14 a seizure, his view is it could.

15 THE CHAIRMAN: Just pause a minute. What exactly does he
16 mean by "a toxic concentration"? Do you understand what
17 that means?

18 A. Yes, I think he's referring to a level which is just
19 above the normal range for that drug.

20 THE CHAIRMAN: Okay.

21 A. And I'm saying it's not much above the range and I would
22 have thought it rather unlikely.

23 MS ANYADIKE-DANES: Having expressed that view, he then
24 attached a number of papers and material, which address
25 that point. And I think one of the reasons he thought

1 it was toxic -- in fact, we can see that at 237-002-010
2 in answer to the chairman.

3 It's:

4 "The usual range of serum concentrations that is
5 associated with a beneficial effect is 10 to 20. Toxic
6 reactions are more likely at concentrations above
7 20 milligrams per litre."

8 And then he works back from what Claire's phenytoin
9 saturation was and concludes that she had received
10 a toxic concentration of phenytoin. It was, in fact, of
11 course, 50 per cent more or thereabouts than Dr Webb had
12 intended she receive.

13 A. Yes.

14 Q. In the papers that he refers to, if I can take the first
15 one, to be found at 237-002-103. That is a paper which
16 is entitled:

17 "Refractory idiopathic absence
18 status epilepticus: a probable paradoxical effect of
19 phenytoin and carbamazepine."

20 If one sees in the conclusions there, the top
21 right-hand box under conclusions:

22 "Our observations strongly suggest that therapeutic
23 concentrations of phenytoin and carbamazepine exacerbate
24 idiopathic generalised epilepsies. Subjects in whom
25 absence is one of the seizure types seen are at

1 a particularly higher risk for responding
2 paradoxically."

3 And then it goes on to say:

4 "These findings underscore the value of accurate
5 classification of seizures and particularly the
6 syndromic approach to diagnosis and point to the
7 potential for iatrogenic complications with
8 indiscriminate use of anti-seizure drugs."

9 Then he also refers to a paper at 237-002-117. That
10 paper is "The aggravation of epilepsy by anti-epileptic
11 drugs to non-specific manifestations of drug toxicity".
12 It starts off:

13 "This phenomenon has been documented with
14 phenytoin."

15 That's the reference there. It's the last line on
16 this -- "... another non-specific manifestation occurs".
17 Sorry, I'm trying to find it on my particular sheet.

18 A. It's well-known that this phenomenon does follow the use
19 of these drugs in idiopathic generalised epilepsy.
20 That is clear.

21 Q. Yes.

22 A. But they are drugs for focal seizures and these are --
23 there is a risk of this occurring.

24 Q. Sorry, what I was pointing you to -- this is a whole
25 section dealing with the effects of this. This

1 particular block is the non-specific manifestations of
2 drug toxicity, and it really starts at the bottom:

3 "Another non-specific manifestation occurs when
4 toxic levels of an AED [anti-epileptic drug] have
5 a pro-convulsant effect."

6 And it goes into the bit that I had just read out:

7 "This phenomenon has been documented with
8 phenytoin."

9 I think from what you have just said there, it is
10 known that phenytoin can have that effect.

11 A. Yes, it is.

12 Q. And it goes on in the following page, 118, under
13 "Paradoxical effect", it refers to:

14 "This refers to exacerbation of seizures by an AED
15 that is usually effective or is an appropriate choice
16 for that epilepsy or syndrome."

17 It goes on:

18 "Given our relative state of ignorance on the mode
19 of action of most AEDs, it is not surprising that these
20 drugs may have unexpected effects, which may not
21 ultimately prove to be paradoxical."

22 It says:

23 "It is not too difficult to speculate on how drugs
24 that increase inhibition or decrease excitation might
25 tip the excitatory/inhibitory balance in the opposite

1 direction from that expected [and it gives an example]
2 and despite the proclamations of rational polytherapy,
3 much beloved by the satellite symposium, we do not
4 understand enough about the brain, its disorders or the
5 drugs we administer to be always able to predict how
6 they will affect a given patient and paradoxical effects
7 associated with specific AEDs ..."

8 And then he describes them below.

9 So I understand then from what you're saying that
10 you doesn't necessarily disagree with that.

11 A. No, I don't.

12 Q. Does that mean that you couldn't necessarily exclude the
13 possibility that that loading dose or stat dose of
14 phenytoin, if it didn't in and of itself cause that
15 seizure at 13.25 [sic] could nonetheless have
16 contributed to it?

17 A. Yes, it could.

18 Q. It could. Then further phenytoin is administered at
19 2300 hours. This is administered over an hour. It had
20 been prescribed that Claire's phenytoin levels should be
21 checked. And the bloods are taken for that, they are
22 checked, but the result doesn't arrive back, at least so
23 far as it's recorded, until 23.30. And the result of
24 it is 23.4 with a range of 10 to 20. But that result
25 doesn't happen until halfway through the infusion of

1 phenytoin, so what I'm asking you is: can you comment on
2 that step of commencing the phenytoin infusion at
3 2300 hours without having the results of her phenytoin
4 concentration levels, without having had a CT scan, an
5 EEG or any serum sodium results at that stage?

6 A. Without the EEG as well, no, I think it's quite
7 difficult, but you could certainly -- if you knew you
8 were giving an overdose, you would reduce that dose.

9 Q. Yes. My point was slightly different, which is: at the
10 time they administer that infusion over an hour, they
11 had intended that they would have the results back
12 showing what her phenytoin concentration levels were.
13 In fact, they did not have those results back. They did
14 not have those results back until 11.30 at night, but at
15 11 o'clock, they start the infusion.

16 A. Yes.

17 Q. And as at that time, they haven't done a CT scan, they
18 haven't got an EEG and they don't have any serum sodium
19 results. So what I'm asking you to do is to comment on
20 the advisability, if I can put it that way, of having
21 started that second lot of phenytoin.

22 A. Of course, I wouldn't have started it in the first
23 place.

24 Q. I understand that. But given that --

25 A. So it's very difficult, really.

1 Q. I understand that. I'm just trying to gain from you
2 your comment on a doctor doing that in the absence of,
3 at the very least, the concentration levels of phenytoin
4 in her system.

5 A. I think you would have waited if that's what you were
6 planning to be doing, yes.

7 Q. Thank you. When you were giving your evidence, you also
8 said -- I'm now moving on to midazolam --

9 MR COUNSELL: Before my learned friend does move on to
10 midazolam, I wonder if Professor Neville could be asked
11 to clarify his evidence. Because he has been taken
12 through a good deal of material, all of which, as
13 I understand it, is literature published since these
14 events, and asked about the effect of this overdose of
15 phenytoin. I'm referring to the earlier one and to the
16 reports from Aronson. Professor Neville's evidence on
17 Thursday, when asked about the effect of phenytoin
18 was -- and this is in the transcript on page 175:

19 "I don't think that it would probably make a major
20 difference. The levels at which you tend to go off the
21 scale on this drug are not linear so that it will have
22 a higher ... At the end, it will actually rise quite
23 sharply, but it seems to have been tolerated reasonably.
24 So probably not much effect."

25 Then you'll recall, Mr Chairman, that he went on to

1 explain that a little bit later.

2 Professor Neville has now said that it could have an
3 effect and what I'm wondering is whether anything that
4 he's been taken to this morning, in respect of
5 after-the-event literature and the views of others,
6 causes him to alter in any way the view he expressed
7 last Thursday.

8 MS ANYADIKE-DANES: Thank you very much.

9 I wonder if I might preface it by this: the
10 publications that were attached to Dr Aronson's report
11 -- not all of them -- are 1996 publications. But the
12 views expressed, can you help us with whether that kind
13 of knowledge was had in 1996?

14 A. Yes, I think phenytoin was very well-known from 40 years
15 of use, so that I think we were used to using it, used
16 to giving it intravenously, and used to its effect. So
17 what I said on Thursday, I would agree with today.

18 Q. Yes.

19 THE CHAIRMAN: So just to get this: what you were agreeing
20 with today is Dr Aronson's statement at 237-002-011,
21 which is that it's impossible to say whether Claire's
22 seizure at 3.25 was due to the phenytoin toxicity,
23 underlying infection, hyponatraemia, some other cause,
24 or a combination. And you agree with him, it's
25 impossible to say, but your evidence on Thursday was

1 that you thought that that was ...

2 A. I hope I meant it was unlikely and I still think it was
3 unlikely.

4 THE CHAIRMAN: That's the point, thank you.

5 MS ANYADIKE-DANES: Having said that you thought that it was
6 unlikely, if you are back in the situation the
7 clinicians were in the afternoon of 22 October --
8 we have the benefit of hindsight, so you're able to say
9 things that have been confirmed subsequently and/or have
10 been perhaps excluded subsequently. At that stage, all
11 the clinicians and nurses see are Claire's actual
12 presentation. They know what medication is being given,
13 they know what the results are to the extent that tests
14 have been carried out, and that's the information that
15 they have. And if, as you say, it was known at that
16 time in 1996 that phenytoin could produce paradoxical
17 seizures -- I think that is the expression that's
18 given -- is that something that should be in people's
19 minds, even to exclude it some time later on, but still
20 as a possibility?

21 A. Yes, it should.

22 Q. It should?

23 A. Yes.

24 Q. Then if we go on to midazolam. I think your evidence
25 was that to give the midazolam -- as in fact I think you

1 thought to give the phenytoin -- was inappropriate
2 without there being any confirmation through an EEG of
3 diagnosis.

4 A. Yes.

5 Q. And I think your evidence also is that midazolam has
6 a sedative effect and could have caused or contributed
7 to the fall in Claire's Glasgow Coma Scales.

8 A. Yes.

9 Q. I think also that your view is that 12 milligrams is and
10 was a big dose.

11 A. Yes.

12 Q. And that there was no evidence that Claire required that
13 dose.

14 A. No.

15 Q. Then I think, in your report at 232-002-016, you thought
16 that was:

17 "... likely to have the effect of reducing her
18 conscious level, reducing her breathing and increasing
19 her partial pressure of carbon dioxide, PCO2s."

20 A. Yes.

21 Q. We are speaking of the 12 milligrams, not the 120.
22 You have given completely different views as to, (a),
23 the likelihood of that happening, and, even if it had
24 happened, what you think the result of that would have
25 been, which is a completely different order of

1 magnitude, if I can put it that way.

2 A. Absolutely.

3 Q. I wonder if I can now put to you Dr Aronson's views on
4 the midazolam and have your comments on it. It's at
5 237-002-013. If we start right down at the bottom of
6 that under "you":

7 "Midazolam should be given slowly by intravenous
8 infusion, titrating the dose against the clinical
9 response."

10 The loading dose of midazolam, which one finds
11 in the notes -- at least the prescription for it -- if
12 you bear with me one moment ... (Pause).

13 090-026-075. Right down at the bottom, you see:

14 "Midazolam, 120. Time of administration [and so
15 on]."

16 There doesn't seem to have been any indication,
17 in the way that there wasn't for the loading dose of
18 phenytoin, for the rate at which that dose should be
19 administered.

20 Midazolam was medication that I think the junior
21 doctors -- and the nurses, for that matter -- have all
22 said that they weren't particularly familiar with.
23 Dr Webb's own evidence was that he went to check his
24 notes to see what the appropriate dosage was because it
25 was something he had come across during his time in

1 Canada. So if this is being prescribed and is to be
2 calculated and administered by junior staff who are not
3 aware of it or can be reasonably thought not to be aware
4 of it, should there have been a direction as to its mode
5 of administration in terms of rate?

6 A. Oh, undoubtedly, yes, but the dose that you've got here
7 of 120 milligrams is just a gross overdose anyway.

8 Q. Admittedly, but I think --

9 A. So that ...

10 Q. Let's say, for the sake of argument, that was
11 a typographical error and what was intended to be
12 written there was 12. Even at that, which is also
13 a high dose, as we understand it, but whatever the dose
14 was, should the direction have included information for
15 the rate at which it's actually to be administered?

16 A. Yes, it should.

17 Q. In fact, rather similar to that in relation to the
18 phenytoin, if one looks at the medical notes and records
19 where Dr Stevenson records it, it's at 090-022-055,
20 there you see:

21 "1. Midazolam, 0.5 milligrams per kilogram, stat
22 dose."

23 And there he calculates it out. But there is no
24 rate at all.

25 If one looks at the second "midazolam", that's an

1 infusion, there is a rate for that calculated out, but
2 there's nothing for midazolam on that initial stat dose
3 or loading dose, and I think your evidence is that there
4 should have been.

5 A. Yes.

6 Q. Just staying with the question of rate, Dr Aronson has
7 included some product information. If we pull up the
8 first -- this is dated 2011. If we pull up 237-002-058.
9 You can see under "Children, IV administration" -- in
10 fact, it recites some much what Dr Aronson had in his
11 report:

12 "Midazolam should be titrated slowly to the desired
13 clinical effect. The initial dose of midazolam should
14 be administered over 2 to 3 minutes. One must wait an
15 additional 2 to 5 minutes to fully evaluate the sedative
16 effect before a procedure or repeating a dose."

17 Then there's a reference to the paediatric patients
18 on the bottom there. Then if one goes to 237-002-061,
19 it talks about:

20 "Special caution should be exercised when
21 administering midazolam to high-risk patients."

22 If one looks down at that list, under "chronically
23 ill or debilitated patients, for example ...", the third
24 in that list is "paediatric patients". Then it says:

25 "These high-risk patients require lower dosages and

1 should be continuously monitored for early signs of
2 alterations of vital functions."

3 Then if one goes across to the "paradoxical
4 reactions", one sees that over the page at 062. It
5 says:

6 "The paradoxical reactions, such as involuntary
7 movements (includes tonic/clonic convulsions ... The
8 highest incidence of such reactions have been reported
9 among children ..."

10 Perhaps just before I conclude that and ask you to
11 comment, along the same vein is the manufacturer's own
12 product information. It's produced by Roche, and one
13 sees that at 311-034-004:

14 "Contraindications: Hypnovel [which is the
15 particular form of midazolam that was administered to
16 Claire] should not be administered in patients in shock
17 or coma."

18 And it goes on to deals with precautions which is
19 something I want to deal a little later on with you. In
20 any event, given what is being said about the
21 paradoxical effects of it and given that she received an
22 overdose of it, are you able to comment on how its
23 administration should have been recorded or the
24 directions for its administration should have been
25 recorded in the medical notes and records to ensure that

1 it was given safely, even at an appropriate dose, to
2 Claire?

3 A. Yes, you would have wanted, first of all, of course, to
4 be sure that the child had status epilepticus and,
5 secondly, because this is a child who's in coma, albeit
6 mild to moderate -- moderate, I think -- you would want
7 to be extremely cautious about its use. I'm not saying
8 that although they say you shouldn't use it that you
9 shouldn't, you would just have to use it with great
10 care, I think, and to be watching for the outcomes. The
11 problem is, you don't know what the outcome is because
12 there's nothing to show you except for a potential for
13 the child waking up.

14 Q. Yes. Dr Webb, in fact, in his third witness
15 statement -- if you just bear with me while I pull it
16 up. 138/3, and I think it's page 2. If one looks under
17 number 1, which is asking him to set out his advice
18 regarding the dose of midazolam, he says:

19 "I was contacted after the seizure that was
20 recorded ..."

21 He has that recorded in the nursing notes at 3.10,
22 but in fact that's an error and the seizure is recorded
23 for 3.25. He says:

24 "I believe this contact was made by a doctor, but I
25 cannot recall by whom. I believe I suggested midazolam

1 as a next option for Claire, but I would not have been
2 certain of the dose and would have had to check this by
3 reviewing papers kept in my office. I believe my
4 communication with the medical staff in relation to this
5 was likely to have been by phone as I did not attend the
6 ward until some time later and did not write the dose
7 myself in Claire's notes."

8 Leaving aside when he may have been contacted about
9 this -- because there may be a difference in the
10 evidence as to when he was contacted -- but what Dr Webb
11 seems to be saying in his evidence is that he suggested
12 midazolam and gave the prescription over the phone about
13 it without actually examining Claire at the same time as
14 having prescribed this. Can you comment on the
15 advisability of doing that?

16 A. But he had already seen her.

17 Q. He had seen her at 2.

18 A. At 2, and had presumably discovered that she hadn't
19 changed. So I think, assuming that the idea was right
20 that he should be treating status epilepticus, he could
21 do that.

22 Q. How much time, if at all, do you think he should have
23 spent explaining what midazolam is and some of its
24 potential effects, if I can put it that way?

25 A. I think he should have explained both the anticonvulsant

1 effects, the paradoxical apparent use of this drug in
2 this child, who was apparently not fitting, and the wish
3 to thus wake the child up. I think that is the sequence
4 that both the doctors and the parents should understand.

5 Q. Sorry, I didn't hear --

6 A. I think the parents and doctors should understand that
7 was the aim, that they should be -- in this child who
8 was not apparently fitting, but was thought might be
9 fitting, they should be expecting them to waken.

10 Q. Thank you. I'm going to ask you a little bit about what
11 the product information says about the contraindications
12 and also the precautions. Before I do that, I'd like to
13 ask you about what Dr Aronson says when he says that we
14 should seek the views of a paediatric neurologist. He
15 says that at 237-002-013.

16 He's referring back to the summary of product
17 characteristics, some of which I had read out to you
18 before. We see it just above (y):

19 "Hypnovel has not been evaluated for use as an
20 intravenous sedative in children."

21 Then he goes on to say:

22 "That being so, I cannot comment on the off-label
23 unlicensed dose of intravenous midazolam that would have
24 been appropriate in a 9 year-old child with suspected
25 status epilepticus and would seek the opinion of

1 a paediatric neurologist."

2 Then he contrasts that with:

3 "Intravenous diazepam and intravenous phenytoin have
4 status epilepticus specifically listed as an indication
5 in their respective summary product characteristics."

6 The summary product characteristic that he is
7 referring to is dated 2011, so he is saying what he does
8 say there. Can you express a view as to whether you
9 would have thought, if that's the case in 2011, whether
10 you would have thought, in 1996, it was appropriate to
11 administer Hypnovel to Claire?

12 A. It was in reasonably regular use in a number of units as
13 a sedative, so I think it was appropriate that it could
14 have been used if that was the appropriate indication,
15 yes.

16 Q. If what you were trying to do was to --

17 A. Well, if you were trying to either sedate or stop the --
18 or wake the child if they were fitting.

19 Q. Can you express a view, from your expertise and
20 experience, as to if it was appropriate to administer
21 Hypnovel to Claire?

22 A. No, I don't think it was, because we didn't have proper
23 evidence that the child was fitting.

24 Q. Yes.

25 A. But is that the ...

1 Q. There are two things. One, whether, on the basis of the
2 information that he had, you think it's appropriate for
3 him to have prescribed it. Another question, which
4 you have just answered, is whether in your view you
5 would have prescribed it in his position.

6 A. That's right.

7 Q. So if we deal with the first one, standing in his shoes
8 with what is recorded there.

9 A. Then it's reasonable to give -- and I think you've
10 accepted the fact that there is an overdose, but you've
11 decided to not take notice of that, but just carry on.

12 Q. But even the 12 is an overdose?

13 A. Yes.

14 Q. Yes. If I then take you to the circumstances, which is
15 the manufacturer's product information, and go back to
16 311-034-004. There are the precautions. Perhaps if you
17 enhance the precautions, the whole paragraph. First of
18 all, it says:

19 "[It] should never be used without individualisation
20 of dosage. It should not be administered by a rapid or
21 single bolus IV administration."

22 If we just pause there for a moment, does that
23 constitute a single bolus IV administration?

24 A. I think it does, really.

25 Q. Sorry?

1 A. I think it does, really, yes.

2 Q. It does?

3 A. Yes.

4 Q. Dr Webb refers to it when he sees Claire at 5 o'clock at
5 090-022-055. If we have that very briefly and then
6 we'll go back to this. There he says at 1700:

7 "Claire has had a loading dose of phenytoin and
8 a bolus of midazolam."

9 So he seems to describe it in that way.

10 A. Yes.

11 Q. And then if we go back to where we were, he says:

12 "[It] should not be administered by rapid or single
13 bolus IV administration."

14 I think your view is that's exactly what happened at
15 15.25. Then it says:

16 "[It] should only be used in settings with equipment
17 and skilled personnel for continuous monitoring of
18 cardio-respiratory function and resuscitation
19 procedures. Patients should be continuously monitored
20 for early signs of underventilation or apnoea and vital
21 signs should continue to be monitored during the
22 recovery period."

23 Would you accept that?

24 A. Yes.

25 Q. "During the IV application of Hypnovel, respiratory

1 depression, apnoea, respiratory arrest and/or cardiac
2 arrest have occurred and, in some cases where this was
3 not recognised promptly and treated, hypoxic
4 encephalopathy or death has resulted. These
5 life-threatening incidents may occur especially if the
6 injection is given too rapidly or with excessive doses.
7 Particular care must be used in administering the drug
8 by the IV route to ..."

9 And then it has a list of people. "Very ill
10 patients" in one of them:

11 "... because of the possibility that apnoea or
12 respiratory depression may occur. These patients
13 require lower doses, whether pre-medicated or not."

14 Would you accept that too?

15 A. Yes.

16 Q. If that's the case and it requires that sort of
17 attention, when I had asked you before if the junior
18 staff and possibly also the nurses who are conducting
19 the hourly obs should have had the characteristics, if I
20 can put it that way, of midazolam explained to them, do
21 you think it should have included this quite specific
22 information that is being given out by the
23 manufacturers?

24 A. Yes, I do. I think that this was obviously relatively
25 unusual in this particular unit, and therefore I think

1 they should have taken a bit more trouble over this.

2 But these warnings, of course, are made as severe as

3 they can as well.

4 Q. Of course.

5 A. So that they are ... Because, of course, they have to

6 be.

7 THE CHAIRMAN: To cover the manufacturers' back?

8 A. Yes.

9 MS ANYADIKE-DANES: But they stem from a kind of concern.

10 A. Oh yes, they do, they're there and they should be taken

11 note of.

12 Q. Would you say at least the continuous monitoring?

13 A. Yes.

14 Q. When I had read out to you before from Dr Aronson's

15 report what he thought the onset of action was, he has

16 the onset of action of midazolam being two minutes,

17 according to him. It's also that midazolam should be

18 given by a slow push and it's also the case that Claire

19 received an overdose of midazolam in terms of the amount

20 that the other experts have considered would have been

21 appropriate.

22 This is something that obviously we're going to ask

23 Dr Aronson because he's looking at not just the

24 midazolam, but the combination effect of all the

25 medications and when they were given and when their

1 respective periods of action would be, but is it at all
2 possible in your view that in the light of all of this
3 that one can't exclude the possibility that that loading
4 dose of midazolam at 15.25 actually contributed to or
5 produced the seizure that Claire's mother witnessed?

6 A. It could have done.

7 THE CHAIRMAN: I'm sorry, I thought that you had agreed
8 about half an hour ago with Dr Aronson saying it's
9 impossible to say what specifically caused the seizure
10 at 3.25 --

11 A. Sure.

12 THE CHAIRMAN: -- whether it's one of a number of drugs or
13 a combination of the drugs, et cetera.

14 A. Yes, I hoped to be saying the same thing in a slightly
15 different fashion by saying that it could have been
16 that, but I couldn't say further than that.

17 THE CHAIRMAN: And you have agreed with Dr Aronson, who says
18 it's impossible to say. So if it's impossible to say,
19 that means nothing can be ruled out as a possibility.

20 A. No.

21 THE CHAIRMAN: I'm not sure how much it's going to advance
22 the inquiry to say something is possible because it's
23 not impossible because that's the second time this
24 morning we've been through this.

25 MS ANYADIKE-DANES: I think what was being put there was

1 that the focus was on the phenytoin at that stage.

2 MR COUNSELL: Professor Neville's evidence on Thursday in
3 relation to this question of midazolam was -- and this
4 is the bottom of page 176 of Thursday's transcript:

5 "It's possible particularly that midazolam can
6 excite seizures of a different sort. I think it's much
7 more likely that these were due to low sodium levels or
8 they were the effect of hyperextension attacks, which
9 were not seizures."

10 So it may be that --

11 THE CHAIRMAN: I think he went on to say that we'll never
12 know.

13 MR COUNSELL: Exactly.

14 THE CHAIRMAN: This is not really advancing the inquiry and
15 we've got limited time with Professor Neville today.

16 I think we should move on.

17 MS ANYADIKE-DANES: Thank you.

18 Then Claire suffered a respiratory arrest, which is
19 recorded at about 2.30 in the morning of Wednesday. In
20 your view, given the possibility that midazolam itself
21 can produce respiratory arrest or contribute to it,
22 given that she had had this dose and she was then on
23 a continuous infusion of midazolam at that time, is it
24 possible that midazolam contributed to that?

25 A. Yes, it is.

1 Q. Thank you.

2 THE CHAIRMAN: Is that possible in the sense that we'll
3 never know?

4 A. Yes.

5 THE CHAIRMAN: Thank you.

6 MS ANYADIKE-DANES: I think that I had asked you about
7 whether some consideration might have been given to
8 transferring Claire to intensive care. I think the
9 answer that you gave -- I'm just trying to benchmark it
10 really -- was that that is something that could have
11 been in the physicians' minds --

12 A. Yes.

13 Q. -- but not necessarily to have actually done it at about
14 5 o'clock when I think Dr Webb sees her again.

15 A. Yes.

16 Q. But it's something he could be considering --

17 A. Yes.

18 Q. -- depending on her presentation?

19 A. Yes.

20 Q. When Dr Webb does see Claire at 5 o'clock, what, in your
21 view, should he have had in mind given what her recorded
22 presentation is and all that's happened in terms of
23 medication prescription and the things that they don't
24 know because they haven't carried out the tests at that
25 stage or haven't got the results back? What do you

1 think he should have had in mind at that stage?

2 A. I think his mind should have been on the fact that the
3 child was not better -- and you can argue about whether
4 the child was worse or not. I think it probably was
5 a little worse, and the parents certainly thought that
6 Claire was worse. Therefore, they should have been
7 rethinking this diagnosis of epilepsy and saying, what
8 else could it be? And amongst those things are acute
9 brain swelling or an encephalitis that's progressing
10 despite the attacks.

11 Q. When they're wondering what else could it be, given that
12 they are very concerned about her neurological
13 presentation and the extent to which any of that may be
14 down to her previous history, if I can put it in those
15 terms, they would have known that Dr Elaine Hicks had
16 been Claire's consultant while she was a baby, in 1987,
17 and had been trying to ascertain what the cause was of
18 her presentation then, which is described in records of
19 attacks variously as "seizures", "absences", "rolling of
20 eyes" and so forth. But at that stage, she had been
21 brought in and was under the care of Dr Hicks, who was
22 a senior paediatric neurologist.

23 A. Yes.

24 Q. To what extent do you think any of them should have
25 given some consideration to try and contact Dr Hicks to

1 see if they could learn anything about Claire's
2 presentation from how she had appeared then?

3 A. I think in a general sense finding somebody else to talk
4 to would be extremely helpful if you're in a position
5 where you don't know quite honestly what is happening.
6 So I think that's in the general sense. I think that
7 you would normally see children who have had infantile
8 spasms or a similar sort of disorder following slow
9 development and you'll have seen some of them apparently
10 cured of their epilepsy and some of them not. So you'll
11 have that picture. It may be that there's nothing more
12 that could be actually added, but you don't know,
13 of course, until you've tried to find the person and
14 seen whether they've got some additional point which
15 they want to make.

16 Q. Yes. I'm conscious that it may be that Dr Webb was
17 rather short of people to bounce ideas against with the
18 appropriate level of, not just expertise, but seniority
19 and experience.

20 A. Yes.

21 Q. He didn't appear to have access to Dr Steen, who he
22 might have discussed things with. Dr Sands may not have
23 been available to him in the afternoon, he may have been
24 tied up in a clinic.

25 MR GREEN: If I just add the observation, please, that

1 Dr Sands, we must all remember, was a registrar and had
2 only been a registrar for four months at that point.

3 MS ANYADIKE-DANES: I'm coming to that -- but in any event,
4 had actually sought his advice. So in terms of those
5 senior people to whom Dr Webb might have access, would
6 it not have been a prudent thing to have seen if he
7 could reach Dr Hicks?

8 A. Yes, it would have been helpful.

9 Q. Thank you. Mr Chairman, I'm conscious of the time.

10 THE CHAIRMAN: Okay, we'll break for ten minutes and we'll
11 resume -- Professor Neville has to leave at 1.

12 (11.13 am)

13 (A short break)

14 (11.33 am)

15 MS ANYADIKE-DANES: Professor Neville, the counsel for
16 Dr Webb had indicated that Dr Webb's views had changed
17 between his examination of Claire at 2 o'clock -- when
18 all that really seems to be recorded is concerns about
19 her neurological presentation and a continuation,
20 perhaps, of the original view of non-fitting status --
21 and then his examination of her at 5 o'clock.

22 If we look at what happens at 5 o'clock, one can see
23 that at 090-022-055. Perhaps if we just highlight from
24 "17.00" down to the signature. Firstly, he takes some
25 cognisance as to the medication that's been prescribed.

1 And he takes further background from Claire's mother.
2 Then he has a plan. It's a three-point plan, if I can
3 put it that way.

4 The first part of it seems to refer to antiviral
5 medication; would that be right?

6 A. Yes.

7 Q. Although he says he doesn't think that
8 meningoencephalitis is likely, but nonetheless he's
9 covering for it. Can you comment on that and doing it
10 at that stage as opposed to at any other time?

11 A. I think I would have done it much earlier because
12 I think that her state was unexplained in the first
13 place.

14 Q. Of course, earlier, much, much earlier, the previous
15 evening, if he was looking at the notes, he would have
16 seen that Dr O'Hare has already queried, albeit that
17 she's excluded it, encephalitis.

18 A. Yes.

19 Q. And then after the ward round, or at some point during
20 the ward round, Dr Sands has taken the view that
21 encephalitis is possible and seems to have, according to
22 his evidence, discussed that with Dr Webb as a result of
23 which he adds "encephalitis/encephalopathy" to that
24 note. If that's a discussion that happened shortly
25 after the ward round, then from the morning, if I can

1 put it that way, there has been a concern or additional
2 differential diagnoses that those conditions are
3 involved and it's not just the non-fitting status.

4 A. Yes.

5 Q. Given that he saw Claire at 2, is there any reason why
6 he wouldn't have started that at 2?

7 A. No, I can't see why not, no.

8 Q. And when he says "I don't think meningoencephalitis is
9 very likely", but nonetheless he is suggesting that they
10 provide that medication, can you understand from his
11 note or how do you interpret his note as to why he's
12 doing it?

13 A. I think he's had no real result from treating
14 status epilepticus, so he's trying something else, and
15 really he could have tried both in the first place.

16 Q. Yes. But can you help as to trying something else, but
17 still with no tests or results to base the direction
18 that you should go on?

19 A. No, well, he hasn't got the earlier -- well, that day's
20 sodium level. Though I don't think he's fully aware of
21 that fact. Then he doesn't have EEG evidence and he's
22 not got CT evidence of the possibility of Claire having
23 meningoencephalitis either. So he's working largely
24 in the dark.

25 Q. Yes. Quite apart from the difficulties that he has

1 given evidence about in relation to CT scans and EEGs,
2 on the other evidence that he could have got perhaps
3 from full blood workup and the serum sodium levels, is
4 there any reason why you wouldn't be trying to pursue
5 your evidence and then formulating your treatment plan
6 in the light of your evidence as opposed to formulating
7 your treatment plan?

8 A. Sorry, I'm a little bit confused. It's because of the
9 number of uncertainties that there are in this argument,
10 all of which are potentially soluble. But I find it
11 difficult to answer that question, sorry.

12 Q. I phrased it badly. It's really just what seems to be
13 happening here, and it's really a methodology because
14 he's also a consultant paediatric neurologist, but the
15 method that he seems to be adopting is to, from her
16 presentation and that sort of fairly basic information,
17 to formulate a treatment plan based on a number of
18 hypotheticals as to what it should be, as opposed to
19 getting in actual results to see what's happening and
20 then formulating your treatment plan in relation to
21 those results.

22 A. Yes, absolutely, yes. No, he should have been trying to
23 obtain these results and made absolutely sure that he
24 knew what the sodium levels were that morning,
25 I believe, and that he knew the EEG and the CT scan,

1 that they were available or coming to be available.

2 Q. Is that fairly basic, that that's the way you approach
3 refining your diagnosis?

4 A. Yes. If you have a child who's in coma and you don't
5 understand that state, then you investigate in that set
6 of simple ways, really.

7 Q. Then the second point of his plan was to:

8 "Check viral cultures, query enterovirus, stool,
9 urine, bloods, T/S."

10 Is that all appropriate at that stage?

11 A. It's appropriate, but it doesn't explain the level of
12 coma. That requires a sort of separate explanation.

13 Q. That second part of the plan, is that also something
14 that could have been embarked on earlier?

15 A. No, I think they just take a little while, so I think
16 you have to try and get those in the course of a couple
17 of days or so. That's more difficult.

18 Q. No, sorry, I meant to request it.

19 A. Oh yes, to request it is fine, but it will take a while
20 to get those results.

21 Q. And if that's the case, is it therefore something that
22 should have been requested earlier?

23 A. This is him actually asking for them?

24 Q. Yes.

25 A. Oh yes, then it should have been asked for.

1 THE CHAIRMAN: This is your original analysis, professor,
2 isn't it, really, that by Tuesday morning at the latest
3 there should have been a series of further tests
4 required?

5 A. Yes.

6 THE CHAIRMAN: Those results would have started to come back
7 during Tuesday --

8 A. Yes.

9 THE CHAIRMAN: -- so that instead of the doctors and nurses
10 working on rather uncertain diagnoses, the range might
11 have been narrowed down when the results came through?

12 A. Yes.

13 THE CHAIRMAN: And in the absence of those results having
14 gone through, Claire's condition doesn't improve or
15 perhaps deteriorates as Tuesday goes on and there's
16 really not much greater knowledge by Tuesday evening
17 than there was on Tuesday morning.

18 A. That's right.

19 MS ANYADIKE-DANES: Thank you.

20 Then I think in your report, apart from actually
21 dealing with those very matters that the chairman had
22 raised with you, you say that:

23 "Any review of Claire's condition should also have
24 included a review of the prescribed drugs."

25 And you have discussed those, and also the record of

1 attacks. Over and above the Glasgow Coma Scale
2 observations, is that also something that he should have
3 looked at?

4 A. Yes.

5 Q. There would only have been two at that stage, but
6 if we pull up the document which is 090-042-144. So
7 only the first two things will have happened because the
8 first is the 3.25 and then the 4.30. Everything else is
9 after that examination at 5. But just stopping there,
10 and perhaps if we pull up the Glasgow Coma Scale sheet
11 that I had provided to you before so that we can compare
12 them, 310-011-001.

13 This has been, professor, modified slightly because
14 we went back and checked some of those -- you may recall
15 there was a concern as to how those numbers didn't
16 appear to be quite right when you were looking at it on
17 Thursday. So we've gone back and this is now checked
18 and it has been corrected. It makes no difference to
19 the total, but some of the internal values have changed.
20 So that's it there.

21 We have also added, because it's been considered
22 relevant by one party, the times when the shifts change.
23 So if you see the two red lines going down between 2 pm
24 and 3 pm, it's a red line, and then between 8 pm and
25 9 pm there's a red line, and there's a nursing shift

1 change there in case -- because I think you conceded
2 some of this is a little subjective -- in case that
3 makes a difference to the actual values ascribed to
4 these component parts of the total.

5 So up until 5 o'clock, he would have had those
6 Glasgow Coma Scale scores and then he would have had the
7 record of attacks at 3.25 and 4.30. You have described
8 those attacks and distinguished them from seizures and
9 attributed them to perhaps a different cause. If he had
10 that information, what do you think he should have
11 understood was happening as a result of the description
12 of, "strong seizure, lasted five minutes, sleepy
13 afterwards", that's 3.25, and then the 4.30, which is,
14 "teeth tightened slightly; state afterwards, asleep"?

15 A. It could be that they're two separate events and the
16 first one sounds more like a proper seizure. The second
17 sounds very like a sort of tonic attack, which could
18 indicate just raised intracranial pressure. So I think
19 seeing those sorts of attacks, it should have been
20 possible to suggest that this child might have raised
21 intracranial pressure.

22 Q. The first one, which you say could be of a different
23 nature and be a proper seizure, of the range of
24 possibilities that he might have been reflecting on,
25 what could have given rise to that?

1 A. The very likely cause of that would be hyponatraemia.
2 But it is possible that the child had continuous
3 seizures as well. We just don't know.

4 Q. But in terms of the range of possibilities --

5 A. Hyponatraemia is high on the list.

6 Q. And that teeth tightening, does that derive from
7 a different cause?

8 A. Yes.

9 Q. What's that caused by or could be caused by?

10 A. It's caused by the tentorium, the posterior part of the
11 brain being squeezed, thus it extends and you get that
12 sort of episode without there being any form of overt
13 seizure on the brain.

14 Q. What causes that part of the brain to be squeezed or,
15 out of the range of possibilities, what might have
16 caused the brain to be squeezed?

17 A. It's because the brain is slowly swelling.

18 Q. Does that not therefore mean they ultimately come down
19 to the same cause?

20 A. That teeth tightening slightly, that one is highly
21 likely to be just a tonic extension attack without it
22 being a seizure. The first one is much more likely to
23 be a proper seizure. It's the best I can do.

24 Q. I understand so far that you've got them as different
25 things. But the seizure one, you say that would be

1 hyponatraemia, and maybe in this way then: how does the
2 hyponatraemia give rise to that kind of seizure without
3 it also being caused by cerebral oedema?

4 A. Oh, well, it's part of the process whereby, if you drop
5 your sodium fast, you cause a release of excitotoxic
6 events, so it's just an effect of that event.

7 Q. I see.

8 THE CHAIRMAN: Is that why each of those two incidents is
9 highly suggestive of developing hyponatraemia or is that
10 putting it too far?

11 A. Yes, it would, because both would have ... But
12 particularly, I think, the second would make that
13 possible.

14 MS ANYADIKE-DANES: Does the second not suggest that the
15 hyponatraemia may have developed to a stage whereby it's
16 now causing cerebral oedema? Because you have linked
17 that type of episode to the swelling of the brain.

18 A. Yes.

19 Q. And that would be the cerebral oedema?

20 A. Yes.

21 Q. So the 3.25 may have been caused by the fall in sodium,
22 whereas the 4.30 may have been that the brain is already
23 starting to swell, apply pressure, and that's producing
24 that kind of episode?

25 A. Yes. I think you may be slightly overinterpreting how

1 far I can actually take this.

2 MR SEPHTON: I wonder if the professor could be asked if the
3 attack at 4.30 might also have been caused by
4 a breakthrough epileptic attack.

5 A. Yes, it might have been.

6 MS ANYADIKE-DANES: And could either of those, if one leaves
7 aside hyponatraemia and cerebral oedema, have been --
8 well, maybe it's the same thing as my learned friend has
9 just asked -- a tonic attack due to status epilepticus?
10 Is that the same thing as my learned friend has just
11 asked?

12 A. Well, yes, it would be.

13 Q. So that would be a reason for keeping both those
14 potential diagnoses --

15 A. Sure.

16 Q. -- on the books, as it were --

17 A. Yes.

18 Q. -- because there has not been anything to have
19 distinguished between them either way and therefore
20 excluded either one?

21 A. No, the only thing that had perhaps changed is the
22 failure of the drugs to change the outcome. They were
23 still in coma.

24 Q. Does that mean if the drugs haven't addressed it, does
25 that point you more towards the hyponatraemia --

1 A. Yes, it does.

2 Q. -- as opposed to the non-fitting status epilepticus?

3 A. Yes, it does.

4 Q. And in answer to my learned friend, when he asked if it
5 could have been a breakthrough epileptic seizure, how
6 likely is that given the amount of anticonvulsant drugs
7 she had been on since 12.45 with the diazepam?

8 A. I think it's relatively very unlikely.

9 Q. Thank you.

10 A. That's about as far as I can take that, I think.

11 Q. I understand. Dr Webb has relied on certain articles
12 dealing with the average time for the cessation of
13 seizures and regaining of full consciousness. Those are
14 to be found at 138/3, page 5 and 6, I think. The first
15 relates to the use of midazolam. The second is
16 "Continuous midazolam infusion as treatment of
17 status epilepticus".

18 Is there anything that you wish to comment further
19 than you already have about the use of midazolam
20 in relation to Claire's condition?

21 A. It's a rapid-acting drug and so you would expect an
22 effect within -- certainly within 10 to 15 minutes.

23 Q. Then if I understand you correctly, given that it is
24 a rapid-acting drug and it had first been administered
25 at 13.25 [sic], we're now at 5 o'clock and he still has

1 one subsequent record of an episode, and her Glasgow
2 Coma Scales are where they are, that, just so that
3 we have it correctly, is all pointing perhaps slightly
4 further away from the non-fitting and perhaps closer
5 towards the hyponatraemia, although I think you've said
6 that neither could be absolutely ruled out at that
7 stage?

8 A. No. But it points in the direction of hyponatraemia.

9 Q. If it was doing that, then what is it that you think
10 Dr Webb should have done at that stage?

11 A. I think he should have both checked on the sodium level,
12 I think he should have done an EEG and a CT scan.

13 Q. At that stage, it would be 5 o'clock.

14 A. Yes.

15 Q. And --

16 THE CHAIRMAN: Sorry, just to go back a moment. Professor,
17 did you just say that the midazolam -- you said it was
18 first administered at 13.25, 1.25? Is it not 3.25?

19 MS ANYADIKE-DANES: 3.25. It's 3.25, not 13.

20 THE CHAIRMAN: Your question has been picked up on the
21 transcript as:

22 "... it had been first administered at 13.25."

23 MS ANYADIKE-DANES: That's not correct, it's 3.25.

24 THE CHAIRMAN: Thank you.

25 MS ANYADIKE-DANES: If your view is that what he should have

1 done then is had an EEG, if an EEG is not available to
2 him because it's approaching or actually out of office
3 hours at that stage, what is the other option, or what
4 are the other options?

5 A. The other two investigations are both CT scan and sodium
6 levels.

7 THE CHAIRMAN: And they become even more important if you
8 can't do the EEG?

9 A. Yes. At least you can treat the low sodium, whether or
10 not the child is fitting.

11 Q. Then the sodium valproate, that is administered at 5.15
12 with cefotaxime being administered at 5.30. If we stick
13 with the sodium valproate, which is another
14 anticonvulsant, as the third part of his plan, if I can
15 put it that way. At that stage, given what had happened
16 in relation to the use of the other anticonvulsants,
17 diazepam, phenytoin, midazolam, what do you think the
18 benefit was of administering sodium valproate at that
19 stage?

20 A. Really quite a low chance of relieving anything,
21 seizures ... I think it would ... That the chances
22 would have been quite small that it would have done
23 anything useful to the seizures if they had been
24 present.

25 Q. Well, if they were being present, why wouldn't they have

1 been addressed by the diazepam, the phenytoin and the
2 midazolam, but could be addressed by the sodium
3 valproate?

4 A. I suppose it's a different drug, but, overall, the
5 current drugs that we used, that is phenytoin and the
6 diazepam/midazolam, they're really pretty effective as
7 well.

8 Q. So what are the chances, so far as you can tell, of them
9 not addressing her as they had considered it to be
10 seizures, and yet the sodium valproate, being
11 administered at 5.15, doing it?

12 A. Quite small. 10 to 20 per cent, perhaps.

13 Q. Before we go on to my next point, which will be about
14 consultant responsibility, I wonder if I can pull up one
15 document that had been provided to try and see what the
16 interrelationship is between these different conditions
17 and their presentations, which is at 310-014-001.

18 This is a schematic that the inquiry was assisted by
19 Dr Scott-Jupp, who is a consultant paediatrician, to try
20 and -- in a very, very simplified way -- indicate what
21 the relationship between these various conditions are
22 and how they might appear.

23 Can you assist us in understanding, even if it's
24 simply to say that this could be improved upon in some
25 way if you really wanted to try and represent what was

1 happening?

2 A. I think that the retention of water, the hyponatraemia
3 and cerebral oedema, they're clear.

4 Q. Yes.

5 A. If you then go back down to hypotonic fluids, yes,
6 that's correct as a likely cause. Then you seem to move
7 on to three separate things, each of which could
8 contribute. Encephalitis can cause cerebral oedema.
9 That is true. Status epilepticus, really rather
10 unlikely, I think, in this setting. And encephalopathy
11 is really just, as we've said, a general sense of
12 something being wrong with the brain. But a metabolic
13 disorder or a toxin, they could also cause swelling of
14 the brain, which was not related to hyponatraemia.

15 Q. Yes.

16 A. So you have some separate causes at the bottom, what
17 might cause it, but you've got a likely causation
18 sequence of retention of free water, hyponatraemia and
19 cerebral oedema.

20 Q. Yes. And if we go to that top cycle, which is in the
21 green, the hypotonic fluids don't get administered,
22 obviously, until Claire is admitted.

23 A. No.

24 Q. And they don't really start until some time after
25 8 o'clock when Dr O'Hare prescribes them.

1 A. Yes.

2 Q. So at that stage, though, she has already been admitted
3 with a certain presentation which is of concern.

4 A. Yes.

5 Q. What, therefore, so far as you could tell, would start
6 that presentation, which could then be taken over or
7 added to by the hypotonic fluids?

8 A. Well, the start of it would be a situation in which
9 there was perhaps a degree of hyponatraemia, but not
10 that severe, but combined with a degree of dehydration
11 because she was vomiting. I think it's likely that
12 there was something else wrong and that she had a virus
13 infection as well that was also affecting her. The
14 later stage is of giving a lot of hypotonic fluid and
15 then watching the process just occur before you.

16 Q. And if we take the syndrome of inappropriate
17 antidiuretic hormone, the SIADH, that can itself lead to
18 the retention of free water --

19 A. Yes.

20 Q. -- which can lead to hyponatraemia and into the cerebral
21 oedema cycle, if I can put it that way?

22 A. Yes.

23 Q. What would trigger that response?

24 A. It seems more common in children with a neurological
25 problem, and there are also problems quite outside this

1 area in which this also occurs. So I think that's what
2 is thought to be the reason that this sometimes occurs.

3 Q. So could it be that some or other of those blue boxes
4 at the bottom could have led to the SIADH --

5 A. Yes.

6 Q. -- and then moved into that cycle, which may have been
7 exacerbated by the administration of the hypotonic
8 fluids?

9 A. Yes, that's a likely sequence, yes.

10 Q. Is that the most likely?

11 A. Yes, the most, yes. Well, I suppose status epilepticus
12 is more a potential exhaustion from them, but it
13 doesn't ... It just ... But non-fitting, I don't think
14 it so commonly does that.

15 Q. So in other words, it's the encephalitis --

16 A. Yes.

17 Q. -- or something in that encephalopathy, the rather large
18 box of potential things that could have had that effect,
19 produced the SIADH, she is vomiting so she's slightly
20 dehydrated, and you use hypotonic fluids?

21 A. Yes.

22 Q. And that combination could have taken you into that
23 cycle?

24 A. Yes.

25 Q. And if that's the case, from what you have said, what

1 becomes the most important thing then that is driving
2 the ultimate fatal cerebral oedema?

3 A. Well, it becomes a matter of carefully monitoring what's
4 happening to the sodium levels and making sure that the
5 fluid that is given is appropriate.

6 Q. Yes. If the SIADH had been triggered, if I can put it
7 that way, by the encephalitis, if that was the case, and
8 then you get to the SIADH, which is now affecting the
9 retention of free water, which is not assisted by the
10 application of hypotonic fluids, could you have
11 addressed the consequences of that without actually
12 having dealt with the encephalitis?

13 A. Yes. Yes, you could, yes. That would be entirely
14 possible.

15 Q. Sufficient so that Claire wouldn't have deteriorated
16 in the way that she did?

17 A. I think not from acute brain swelling, I think she would
18 have -- yes, I think that's correct. As it happens,
19 there wasn't any evidence of encephalitis.

20 Q. No. I appreciate that. Sorry, just so that we're clear
21 about it and how it would work, the progress of it: are
22 you saying that even though the encephalitis might have
23 led to the SIADH and its effect on retention of water,
24 which then, combined with the application of hypotonic
25 fluids in circumstances where she might have been

1 slightly dehydrated, you could not have treated the
2 encephalitis, addressed the fall in sodium --

3 A. Yes.

4 Q. -- and avoided the fatal outcome --

5 A. Yes.

6 Q. -- she would have still been ill with the encephalitis?

7 A. Yes, that's right.

8 Q. But that could have avoided the fatal outcome?

9 A. Yes, it could.

10 Q. Just one point at this stage because I'm about to move
11 on to the consultant responsibility, and I have been
12 asked to put one point to you. Dr O'Hare says in her
13 examination that:

14 "The fundi were normal and the discs were not
15 blurred."

16 The issue is: is that significant when you're
17 considering the possibility of excluding problems with
18 the brain such as cerebral oedema?

19 A. In the early stages, it would be entirely reasonable.
20 In the early stages, you would expect it to be normal.

21 Q. So that doesn't help you to exclude cerebral oedema
22 in the same way as it didn't help you to exclude the
23 fact that there was no papilloedema?

24 A. It's the same thing.

25 Q. Then if we move on to consultant responsibility.

1 I think the view that you've expressed in your report at
2 232-002-010 is that it seems that Dr Steen and the
3 medical team retained primary care of Claire whilst
4 seeking specialist advice from Dr Webb, and that Dr Webb
5 was making suggestions and not taking over care. And
6 I think you also think that the hospital notes should
7 make it clear if there has been a transfer of care and
8 the nursing staff should be informed by a consultant or
9 a registrar to that effect.

10 A. Yes.

11 Q. The end of the shift, I think, was going to be, for the
12 doctors, 4.30, 5 o'clock, or thereabouts. Dr Steen, so
13 far as we are aware, was carrying out her clinic --
14 which is not on the site, but a separate site -- and
15 that that would finish usually at about 5 o'clock.

16 A. Yes.

17 Q. And her evidence is that she has in the past, if told
18 that there is a patient that requires it, come back from
19 her clinic and seen a patient in the hospital before
20 going home. At 5 o'clock, a number of things are
21 happening. Dr Webb is there, he's examined her and he's
22 refined the plan, if I can put it that way.

23 How important do you think it was at that stage
24 before the evening shift starts for Dr Webb and Dr Steen
25 to have a discussion to sort out exactly how Claire's

1 going to be managed for the evening?

2 A. I think that was very important. I think that they
3 should have spoken and agreed a plan and not attempted
4 to do it by telephone. I don't think they even did it
5 by telephone, but I think they needed to talk.

6 Q. Yes. Dr Steen's evidence has been that she did make
7 contact with the ward and what she was told, which she
8 cannot remember in fairness to her, but whatever it was
9 gave her comfort. She certainly knew that Dr Webb was
10 involved and that gave her sufficient comfort that she
11 did not feel she needed to come back to see Claire or
12 discuss Claire at 5 o'clock. This is a question that
13 was put to a number of the doctors: what, so far as you
14 can see, is recorded over the course of that day that,
15 if it was reported to her accurately, could have allowed
16 her to think that matters were in hand and she didn't
17 need to either see Claire or discuss Claire's condition
18 with any other clinician, including Dr Webb?

19 A. I think it's very difficult between these doctors in the
20 situation that they're working in. I think that she
21 hadn't actually seen, as far as I know, the child at
22 all.

23 Q. That's correct.

24 A. And so it does seem to me extraordinary that she
25 shouldn't make contact with a patient who is not getting

1 better and who is in a -- I don't know that it was
2 recognised as being life-threatening, but really a quite
3 serious condition. So whether or not that was almost
4 entirely neurological, I would have thought she should
5 have seen ...

6 Q. You said "not sure it was recognised that it was
7 life-threatening", do you think the evidence was there
8 to reach the view that it was life-threatening?

9 A. I think it probably was because Claire had not responded
10 to any of the anticonvulsants, so you were therefore
11 left with virtually no diagnosis. Well, no diagnosis.

12 Q. And when there is a handover to the clinical staff, what
13 is it that you think they should have particularly, if
14 anything, had their attention drawn to so that they
15 could have been keeping a watchful eye over the evening
16 of the 22nd?

17 A. Well, I think they could have been informed of the fact
18 that this child has not responded to anticonvulsants.
19 They had three of them already and another one is to
20 come. And they should, therefore, have been looking for
21 further diagnoses and, in particular, hyponatraemia.

22 Q. At that stage, the evidence is there would have been
23 SHOs -- there were two -- but the registrar was
24 obviously the most senior person and that she was
25 covering the entire Children's Hospital, which I think

1 was about 116 beds at that stage.

2 A. Yes.

3 Q. And the SHOs, presumably, themselves are covering
4 a number of beds also. Given the kind of observation
5 that you're talking about, should some thought at that
6 stage have been given to having her admitted to
7 intensive care?

8 A. Yes, and the lead certainly would come from both
9 consultants, I would have thought, and they would have
10 a clear idea that their proposal to attack the epilepsy
11 had not worked and that they should be looking for
12 something else. So I don't think it's left to the
13 junior staff or the more senior junior staff to actually
14 work that out themselves; they should have known that.
15 Thus, if they were in that state, then the thought of
16 whether this child had cerebral oedema and therefore
17 required treatment should also have been entertained.

18 Q. Thank you. Then the serum sodium result, as do the
19 phenytoin levels, come back at 11.30 that evening.

20 A. Yes.

21 Q. You've seen what Dr Stewart records. That's at
22 090-022-056. That's Dr Stewart's note there. You see
23 the sodium level of 121, the phenytoin level is 23.4.
24 Then the view as to what that might mean, if I can put
25 it that way, is hyponatraemia. And then the notes query

1 the way in which that hyponatraemia may have resulted:

2 "Fluid overload and low-sodium fluids or SIADH."

3 And then it's recorded as:

4 "Important: query the need to increase the sodium
5 content in the fluids."

6 And then:

7 "Discuss with the registrar."

8 He does discuss with the registrar and he gets
9 certain advice in relation to that.

10 Before we get to what the registrar said, from what
11 you have already said, I assume that you agree that
12 Dr Stewart had reached a reasonable conclusion based on
13 the material available to him.

14 A. Yes. He may not have realised just how late in the day
15 he was, but he was certainly on the right line for the
16 first time.

17 Q. And then as for his approach, at the first line, is that
18 a fair enough approach?

19 A. Yes.

20 Q. Then his second line, to discuss all this with his
21 registrar, that's a fair enough approach, is it?

22 A. Yes, it is.

23 Q. I think that Dr Webb, Dr Scott-Jupp, Dr MacFaul and
24 you have all agreed that a consultant ought really to
25 have been involved in that stage?

1 A. Certainly.

2 Q. You make a comment at 232-002-011 -- it's (vii) at (c).

3 There you say yes. What I want to ask you about is your
4 comment at (b). You say:

5 "I would have expected the registrar/consultant to
6 have acted on the assumption of cerebral oedema by
7 restricting fluid intake to two-thirds of normal
8 requirements to avoid further fluid/water overload,
9 which might contribute to cerebral oedema, by inducing
10 diuresis and ventilating her to reduce her partial
11 pressure ... and to reduce the intracranial pressure ...
12 Following the line of management of non-convulsive
13 status was inappropriate."

14 What do you mean by that in terms of "following the
15 line of management of non-convulsive status"? Because
16 it would seem to be that the response that Dr Stewart
17 got from the registrar, which was Dr Bartholome, was to
18 reduce the fluids to two-thirds of their present value,
19 to 41 ml per hour.

20 A. Yes.

21 Q. So there was a response --

22 A. Yes, there was.

23 Q. -- in relation to the sodium.

24 A. But I think further depressing breathing without any
25 form of look towards ventilation was quite wrong.

1 Q. Just so that I understand you, is it because you think
2 that that particular response was inadequate given the
3 condition that Claire would have been in at that stage?

4 A. Yes.

5 Q. Is that something that you myself expected a very busy
6 registrar who's covering the whole hospital to have
7 worked out?

8 A. I think this is a situation which doesn't arise very
9 often and in which you can get either the busy
10 registrar, but certainly the consultants to think about
11 and to plan action. I think a discussion between ITU
12 and Dr Webb and Dr Steen, if Dr Steen is there. They
13 should have actually tried to do something which would
14 bring about, I think, ventilation of that child and,
15 during the course of it, getting her scanned as well.

16 Q. So the busy registrar really should have got hold of the
17 consultants?

18 A. Yes.

19 Q. Either or both?

20 A. I think ideally both, but certainly Dr Webb.

21 Q. Thank you.

22 MR GREEN: Sir, at that point may I interject? I wonder if
23 Professor Neville could be invited to comment on the
24 evidence on this issue of Dr Bartholome, given that he
25 no doubt read her transcript over the weekend as he was

1 invited to do. It's at page 99 on the transcript for
2 1 November [sic]. It starts, sir, with a comment by
3 you, the chairman:

4 "The other big issue ..."

5 Then on page 100, further evidence is given on this
6 point, and on page 101. The point really is this that
7 Dr Bartholome seems to have been operating under huge
8 systemic disadvantages and I wondered if
9 Ms Anyadike-Danes was going to take the professor on to
10 commenting, if he can, about whether that mollifies any
11 criticism he would otherwise have of her.

12 A. Do you want to take me through that or ...?

13 MS ANYADIKE-DANES: I'm not sure that you've been invited to
14 criticise -- your view was that the consultant --

15 THE CHAIRMAN: Sorry, let's be clear. I understand
16 Mr Green's intervention because the effect of what
17 Professor Neville said was somewhat critical of
18 Dr Bartholome.

19 MR GREEN: Absolutely. He doesn't have to use the words
20 "I'm criticising her" for that to be plain.

21 THE CHAIRMAN: That's unavoidable, but the effect of your
22 evidence was to be somewhat critical of the fact that,
23 at the very least, at 11.30 neither consultant was
24 informed -- appears to have been informed -- by
25 Dr Bartholome of the stage which had been reached,

1 partly because -- this is important -- if Claire was to
2 be moved into intensive care, that would normally be
3 consultant led, and a consultant, either Dr Webb or
4 Dr Steen, would have had more pull, as I understand it,
5 in getting Claire into intensive care than a registrar
6 or a house officer.

7 A. Yes.

8 THE CHAIRMAN: But the criticism, which I picked up from
9 your evidence and Mr Green did too, was that there is
10 some level of criticism which can be made against
11 Dr Bartholome for the fact that, at around about 11.30,
12 she did not make sure that the consultants were called.

13 A. I think that's ... But I think they should have been.

14 THE CHAIRMAN: Yes. And I think what you're now being asked
15 to put into the equation is to advise us on how relevant
16 and to what extent any criticism is diluted by
17 recognition of the pressure which Dr Bartholome was
18 under because of what appears to be a rather ridiculous
19 position that she was the senior paediatric doctor on
20 duty through the Children's Hospital that night,
21 covering in excess of 100 patients and Accident &
22 Emergency.

23 A. Yes. It seems as though you may have a situation in
24 which you can't really adequately run that hospital at
25 night in that situation. But this child would have

1 been, I think, close to the top of the list as somebody
2 who, if they didn't take action fast, would have
3 succumbed.

4 THE CHAIRMAN: Yes. I guess a point might be, and I think
5 this was raised in the earlier evidence, that we don't
6 know and we can't be sure, without going through all the
7 records -- which we're not going to do -- what
8 Dr Bartholome was actually doing at this time, whether
9 she was with a child who was even higher on the list of
10 priorities --

11 A. Yes, sure.

12 THE CHAIRMAN: -- and it would be fair to factor that in as
13 an important point when considering the extent, if any,
14 to which Dr Bartholome might be criticised.

15 A. Yes. Though I actually think a phone call to Dr Steen
16 would be -- or Dr Webb would be perfectly ... It
17 wouldn't take long, would it? Or even ask somebody else
18 to do it and pick up the phone.

19 THE CHAIRMAN: Okay.

20 MS ANYADIKE-DANES: I think the transcript will show that
21 Dr Bartholome concedes that, with hindsight, she should
22 have been much quicker in calling a consultant. That's
23 not the point that was being put to you. The point that
24 was being put to you is as you've had it and you have
25 answered it.

1 Can I be clear then what you're saying, because
2 I think you've intimated it to the chairman, as to
3 whether Claire should have been transferred to
4 paediatric intensive care some time shortly after that
5 sodium result was received?

6 A. Yes.

7 Q. If she was, what difference do you think this might have
8 made? I appreciate it's all speculation, but apart from
9 the ability to apply ventilation, what is the difference
10 that the treatment in paediatric intensive care could
11 have made to her condition as you understood it to be at
12 that time?

13 A. A combination of ventilation, diuresis and careful
14 management of the hyponatraemia. That would be just two
15 hours or so before the final event, really.

16 Q. I suppose that given the staffing difficulties that they
17 had, in intensive care she could have had more
18 one-to-one nursing or greater attention, if I can put it
19 that way.

20 A. Yes.

21 THE CHAIRMAN: Sorry to interrupt. Professor, can I take it
22 that the staffing level, which we've been informed
23 about, means not only that Claire was suffering from
24 a lack of attention but almost certainly so were other
25 children, if you've only got one registrar covering more

1 than 100 patients plus A&E?

2 A. That looks pretty obvious, really.

3 THE CHAIRMAN: It's not just one child who's vulnerable to
4 suffer?

5 A. No.

6 MS ANYADIKE-DANES: Thank you.

7 The actual response was for a two-thirds
8 restriction. Bearing in mind Dr Bartholome's level of
9 expertise and the pressures on her to deal with other
10 children, some of whom could also have been very ill,
11 apart from asking somebody to get hold of the consultant
12 if she wasn't able to do that, is there anything else
13 that she herself could have asked to have instituted
14 while they were getting hold of the consultant to take
15 the consultant's views?

16 A. Diuresis.

17 Q. That could have been done then and there?

18 A. Yes.

19 Q. Would it have been reasonable to have increased the
20 concentration of sodium, so change the type of fluid?

21 A. That would have been reasonable, yes. So that could go
22 at least to half strength or to full strength,
23 0.9 per cent --

24 Q. Thank you.

25 A. -- sodium.

1 Q. Bearing in mind what the chairman has said about what
2 the staffing levels imply, if you had the kind of
3 staffing levels that you would think ought to have been
4 present in a hospital of that sort over the night, would
5 you have expected Claire to have been examined at some
6 stage after 11.30?

7 A. Yes.

8 Q. And if she couldn't be because of a shortage of staff,
9 is that a further staffing problem, so far as you're
10 concerned?

11 A. Yes.

12 Q. Because she should have been?

13 A. Yes.

14 MS ANYADIKE-DANES: Mr Chairman, Professor Young has
15 provided two reports where he deals with the literature,
16 and that bears particularly on this question of the
17 appropriate fluid response and what would have been
18 known at that time. He also has provided a second
19 report, which deals with Glasgow Coma Scale. I'm very
20 conscious that Professor Neville has not had very much
21 time, if any really, to consider those two reports, both
22 of which come with a significant amount of articles and
23 materials attached to them. Given the time, I'm
24 wondering if the preferable way to do that would be to
25 invite Professor Neville to respond in writing to those

1 two reports and then we can move on to matters that he
2 will have had an opportunity to consider.

3 THE CHAIRMAN: You haven't had a chance to see these
4 reports, professor?

5 A. I've read the reports, I haven't read the background to
6 it, so I can comment briefly, but that may not be ...

7 THE CHAIRMAN: It's less than perfect.

8 A. Yes.

9 THE CHAIRMAN: In that event, we'll leave those to be picked
10 up either in writing or perhaps by video link with
11 Professor Neville. Okay?

12 MS ANYADIKE-DANES: Yes. Mr Chairman, I wasn't suggesting
13 writing in exclusion to video link; I just meant at
14 another time.

15 THE CHAIRMAN: Yes.

16 MS ANYADIKE-DANES: Thank you.

17 I'm going to move on to discussions with Claire's
18 family, if I may. One sees the evidence of this from
19 a number of sources, but the one that's in her medical
20 notes and records is the relative counselling record,
21 which is to be found at 090-028-088. Dr Steen and
22 Dr Webb are both identified there. You can see that the
23 explanation that's being given under "explanation",
24 is that:

25 "Claire had trouble with her breathing and needed to

1 have ventilatory support now."

2 And:

3 "Following the CT scan, Dr Steen and Dr Webb
4 explained that Claire had swelling of the brain and
5 could possibly be brain-dead."

6 And then down on the right-hand side, you see an
7 evaluation of further explanation of what was provided
8 to the parents, that:

9 "[Her] brain had swollen ... that a CT scan and
10 brainstem tests showed that Claire's brain had died and
11 only the ventilation was keeping her heartbeating [and
12 so on]."

13 If we focus on the first part of it, which is that
14 Claire had trouble with her breathing and needed to have
15 ventilatory support. That follows on from her
16 respiratory arrest --

17 A. Yes, it did.

18 Q. -- which happened at about 2.30 and then she's
19 transferred at about 3 o'clock or thereabouts to
20 intensive care. I think you have said that the cerebral
21 oedema caused or aggravated by hyponatraemia should have
22 been explained to the parents. I'm not pulling it up,
23 but it's 232-002-013. Dr Scott-Jupp takes a slightly
24 different view. He considers that:

25 "... the discussion with the parents were

1 appropriate given the information available and the
2 clinicians' views at the time."

3 Again, not to be pulled up, but that's 234-002-010.

4 But on that first part of the respiratory arrest, do
5 you think that the parents were accurately, so far as
6 you are concerned, informed about her condition that
7 gave rise to the respiratory arrest or were even
8 informed adequately about the respiratory arrest?

9 A. A respiratory arrest is just a single event, isn't it,
10 so I expect they understood that.

11 Q. Yes.

12 A. And I think they, as far as I can see, probably didn't
13 have the run-up to it of cerebral oedema; that came
14 rather later in the discussion. So yes, I think
15 it's ... I don't know quite what more one can say,
16 really, in that situation.

17 Q. If one looks at what happens after the CT scan, it says
18 that:

19 "Dr Steen and Dr Webb explained that Claire had
20 swelling of the brain and could possibly be brain-dead."

21 A. Yes.

22 Q. What else do you think could or should have been
23 explained to them on the basis of the information that
24 was available to the clinicians at the time?

25 A. Well, if they didn't understand this, then they should

1 have understood that this was a thing that uncommonly
2 occurs in children with neurological disease and that
3 some of the children are sensitive to having hypotonic
4 fluids and that this was a risk almost whatever had
5 caused the primary problem, so they would be being given
6 two sets of risks. I don't know the parents, so I don't
7 know what level of understanding of this situation they
8 would have, but I would expect them to be able to cope
9 with those two aspects.

10 THE CHAIRMAN: Isn't the problem about coping with anything
11 in this scenario, professor, the fact that the parents
12 appear not to have been given any forewarning of the
13 seriousness of Claire's condition?

14 A. No, I mean it's ... And I think that's primarily
15 because they were led along the line of
16 status epilepticus, and that was something that they
17 were told to the best of my knowledge.

18 MS ANYADIKE-DANES: On that line, when at 11.30 or
19 thereabouts you think that the consultants might have
20 been advised because it ought to have been appreciated
21 that this was actually quite serious, do you think the
22 family ought to have been told to come back?

23 A. Yes, they should have come back and said, "Look, this is
24 a completely different situation and we're very sorry
25 about this, but there is a significant issue over the

1 electrolytes and we need to, in a way, somewhat change
2 course".

3 Q. One of the things that Mr Roberts in particular had
4 asked and wanted to know was whether there was anything
5 that could be done when he was told that the problem was
6 that there was a collection of fluid and the brain was
7 swelling as a result. He had wondered whether there was
8 anything that could be done, whether it could be drained
9 off in some way or anything of that sort. So far as
10 you're concerned, what is the answer to that, that he
11 might have been told at the time?

12 A. If this is at the stage at which the child has fixed
13 dilated pupils and no response, then it really is too
14 late. If it's done rather earlier, of course you can
15 ventilate, of course you can give a diuretic and you can
16 change the fluids. It is theoretically possible also to
17 decompress the head. It's a difficult and not at all
18 terribly safe procedure, but it has been done on
19 a number of occasions.

20 THE CHAIRMAN: The answer, professor, that Mr Roberts would
21 have got at 11.30, if he had asked that question, would
22 have been quite different from the answer he got at
23 4 am?

24 A. Exactly, yes.

25 THE CHAIRMAN: So not only should he and his wife have been

1 informed at 11.30 and been brought back in, but that
2 would almost have inevitably led on to Claire going into
3 intensive care and an effort being made to do what was
4 then done too late?

5 A. Yes.

6 MS ANYADIKE-DANES: Thank you.

7 Then the brainstem tests were carried out and the
8 form is 090-045-148. You see the reference at 1(c):

9 "Could other drugs affecting ventilation or level of
10 consciousness be responsible for the patient's
11 condition?"

12 And the answer on both occasions is "no", whether
13 it's at 6 o'clock on the Wednesday morning or 6.25 on
14 the Wednesday evening. Given the medication that was
15 administered to Claire and the length of time that that
16 might have been in her system, leaving aside the
17 phenytoin, though, would it have been appropriate to
18 recognise the potential effects of midazolam?

19 A. The midazolam was stopped when exactly?

20 Q. It's not entirely clear. It's possible that it was
21 stopped either just before she was transferred to
22 paediatric intensive care or when she arrived there.

23 A. So she'd be sort of --

24 Q. So that's about 3 o'clock.

25 A. About 3 o'clock in the morning?

1 Q. Yes.

2 A. And this is done at 6 am?

3 Q. Yes.

4 A. I think that the midazolam level would be really quite
5 low then. So that's probably okay.

6 Q. Is there any test that should have been carried out to
7 satisfy themselves that she didn't have any of that in
8 her system, if I can put it that way?

9 A. She could have had a midazolam level. You're going to
10 repeat it again, so I think ... And that's going to be
11 12 hours later, isn't it? So I think it's a reasonable
12 level of certainty of ... So I think ... And there's
13 no real reason for believing that she was not excreting
14 substances.

15 Q. When you say "excreting", does that depend on whether
16 she's actually passing urine?

17 A. Yes.

18 Q. Given the amount of anticonvulsant therapy that she had
19 been on -- she had diazepam, phenytoin, sodium
20 valproate, midazolam and so forth -- I think her
21 phenytoin levels were checked, and they were within the
22 normal range. But just so that we're clear, before you
23 even embark on the first brainstem test in order to be
24 able to answer 1(c), should any blood tests have been
25 done to ensure that her system no longer had the

1 presence -- at a significant or at the relevant level,
2 if I can put it that way -- of anticonvulsant therapy?

3 A. I suppose you could have done. It's just three hours
4 later and then much later makes it really very unlikely.

5 Q. I'm not so much talking about what the test was on the
6 second occasion; I'm talking about the appropriateness
7 of starting it in the first place at 6 o'clock without
8 such --

9 A. I think that could have been done, yes. I hadn't picked
10 that up.

11 Q. What could have been done?

12 A. The midazolam.

13 Q. A blood test?

14 A. Yes.

15 Q. Given that you hadn't picked it up, is it a sort of
16 a counsel of perfection or would it have been an
17 appropriate thing to have done?

18 A. I think if you were going to be repeating the thing,
19 I think it probably is a counsel of ... I think it's
20 not ... I don't think it's terribly important.

21 Q. In terms of 1(f):

22 "Could the patient's condition be due to
23 a metabolic/endocrine disorder?"

24 And that's answered "no" on both occasions. Given
25 your concerns about hyponatraemia, I think even Dr Webb

1 might have identified that. Was that appropriate to
2 answer that "no" in both cases?

3 A. Yes, I think it was.

4 Q. It was appropriate?

5 A. Yes, it was. I think they mean something different by
6 these designations.

7 Q. I understand that. Does that mean therefore because the
8 serum sodium levels had come within close to normal
9 parameters, that that was appropriate?

10 A. Yes.

11 Q. Thank you.

12 Then if I can deal with the brain-only autopsy.
13 I think in your report at 232-002-014 -- not to be
14 pulled up -- you say that you would have expected a full
15 post-mortem as the death was unexplained.

16 A. Yes.

17 Q. In other words, you mean reported to the coroner?

18 A. Yes.

19 Q. Is there any doubt in your mind about that?

20 A. No.

21 Q. Even if you accept what Dr Webb thought at the time,
22 which was he believed that the cerebral oedema was due
23 to hyponatraemia, which was due to SIADH, albeit the
24 source of that wasn't known -- and that's in his witness
25 statement 138/1, page 47 at (c). So if that's his

1 position, does that lead you or should that have led him
2 to reporting that to the coroner?

3 A. I think so. He doesn't really know the cause of the
4 primary problem. The fact that we don't even know it
5 now is something we find out later.

6 Q. Yes. It's Dr Steen who deals with the advice and
7 guidance to the family, as I understand from the
8 family's evidence, about the brain-only and not
9 reporting it to the coroner and it is she who provides
10 the autopsy request form that is brain-only. Would you,
11 as the paediatric neuroconsultant who had been involved
12 in the child's treatment, have expected to have been
13 part of that discussion as to what sort of autopsy
14 should be carried out and, for that matter, what should
15 be told to the pathologist?

16 A. Yes, certainly.

17 Q. You said that very firmly.

18 A. Yes.

19 Q. Can you think of a -- I won't pursue that.

20 A. No reason why not.

21 THE CHAIRMAN: You're now finishing questions you're not
22 being asked!

23 MS ANYADIKE-DANES: I think it was a comment, Mr Chairman,
24 which isn't appropriate for me to make.

25 THE CHAIRMAN: Sorry, I think the point is that Dr Steen

1 says that Dr Webb was part of the discussion and Dr Webb
2 indicates that he wasn't really part of the discussion.
3 But in your eyes, if he wasn't part of the discussion,
4 he certainly should have been part of the discussion.

5 A. Yes.

6 THE CHAIRMAN: Thank you.

7 A. Yes.

8 MS ANYADIKE-DANES: We have tried to pull together
9 a schedule for the cause of death, trying to show
10 people's different views on it. It can be seen at
11 310-009-001. You see Professor Harding's formulation.
12 He thought the cause of death was cerebral oedema caused
13 by hyponatraemia. He saw no evidence of meningitis,
14 encephalitis and cerebral malformation.

15 He's approaching it as a pathologist, so if we leave
16 the evidence, because he's looking at the histological
17 slides to form that view, but if we stay with the
18 cerebral oedema caused by hyponatraemia, would you agree
19 with that?

20 A. Yes, I would.

21 Q. You can see the reasoning on the right-hand side. I'm
22 conscious of the time, so I'm not reading through what
23 the reasoning is, but you have it there as to why he
24 thinks that.

25 A. Yes.

1 Q. And then Dr Gupta, who's the PSNI's expert in paediatric
2 neurology, he also considers that it's cerebral oedema
3 caused by hyponatraemia. He sees no evidence of
4 status epilepticus. And he is of your area of
5 expertise, if I can put it that way. Would you agree
6 with him?

7 A. Yes. I mean, in that there was no evidence that related
8 to epilepsy on the ...

9 Q. If one looks at his reasoning, it appears very close to
10 that which you have already given today --

11 A. Yes.

12 Q. -- which is how that hyponatraemia might have started,
13 if I can put it that way, and then been allowed to
14 continue.

15 A. Sure.

16 Q. If we go over the page, we see Dewi Evans. He's the
17 PSNI expert in paediatrics. He says it's cerebral
18 oedema caused by hyponatraemia and caused by SIADH. So
19 he's added an SIADH limb to how you could have got to
20 the cerebral oedema. Would you necessarily disagree
21 with that?

22 A. No, that's ...

23 Q. A reasonable formulation?

24 A. Yes, entirely.

25 Q. Then you can see his reasoning:

1 "The progression of it was a failure to prescribe
2 the appropriate fluid and to take adequate measures to
3 monitor the sodium balance."

4 Which seems to echo much of what you have said, both
5 today and on Thursday.

6 Then there's Dr Waney Squier, who's the expert in
7 neuropathology. We'll maybe move on as the
8 neuropathologists are perhaps less relevant to your view
9 because they are looking at the evidence after the fact
10 and I am asking you your thoughts based on the evidence
11 as it would have presented itself to the treating
12 clinicians, if I can put it that way.

13 Perhaps if we go over the page. Then you see
14 Dr Scott-Jupp. He's the inquiry expert in paediatrics.
15 He has a different formulation:

16 "Cerebral oedema caused by encephalitis, meningitis,
17 encephalopathy."

18 He also thinks that hyponatraemia might have caused
19 the cerebral oedema and that the encephalitis might have
20 made the brain more susceptible to the effects of the
21 hyponatraemia. So he has those two linked in that way,
22 but nonetheless he does have encephalitis, meningitis,
23 encephalopathy. How do you respond to that?

24 A. I think that's a reasonable notion of what might have
25 occurred, and so I wouldn't ... I think that it's ...

1 I would see hyponatraemia as being first line, really,
2 so that hyponatraemia as a specific cause of cerebral
3 oedema ... And the other things would be secondary
4 causes of that.

5 Q. And are they secondary causes because we're talking
6 about the time when Claire was alive and people were
7 forming their views as to how she might have been
8 treated? Are those other matters secondary causes
9 simply because they haven't been able to be excluded, if
10 I can put it that way?

11 A. Yes.

12 Q. If we go over the page again. That is your formulation
13 there:

14 "Cerebral oedema caused by
15 encephalopathy/hyponatraemia related to SIADH."

16 A. Yes.

17 Q. And the expert in microbiology:

18 "Cerebral oedema caused by viral encephalitis.
19 Possible that the hyponatraemia caused or contributed to
20 the cerebral oedema. SIADH is a well-recognised
21 complication of encephalitis."

22 So he has an interaction as well, and do you make
23 much the same comment as you made to --

24 A. Yes, I think so. I would tend to put hyponatraemia
25 higher on the list, but yes.

1 Q. And finally, the next page. That is his reasoning
2 there. And I don't think we need to go further on
3 because Caren Landes, for example, is an expert in
4 radiology. Unless someone thinks there's a particular
5 expert we've left out.

6 We did produce the earlier schedule I was trying to
7 take you to, which showed what the clinicians at the
8 time thought, so you can look at their formulations.
9 It's 310-019-001. You see Dr Steen. She has
10 meningoencephalitis causing the SIADH, leading to the
11 hyponatraemia. She also has status epilepticus. That
12 was her first formulation, but after the inquest she
13 accepted the verdict of Professor Young, which we're
14 going to go to in a minute.

15 The reason for that is when she gave her evidence,
16 her view was that she thought that the hyponatraemia was
17 the result of these other interactions as opposed to the
18 cause. And I think your view is that you put the
19 emphasis the other way round, or correct me if I'm
20 wrong.

21 A. Yes. That's right.

22 Q. And then if we go to the next page, those are the
23 paediatricians, so this formulation has them all in
24 discipline, if I can put it that way. The next page,
25 there's Dr Webb. His formulation was:

1 "Meningoencephalitis causing SIADH leading to
2 hyponatraemia."

3 So his was very similar to Dr Steen.

4 Then if we just go to page 5. Let's see. I'm
5 trying to get to Professor Young.

6 THE CHAIRMAN: Page 4.

7 MS ANYADIKE-DANES: There we are, page 4.

8 Professor Young. This is the formulation that
9 Dr Steen accepts:

10 "Hyponatraemia due to excess ADH production and also
11 meningoencephalitis and status epilepticus."

12 That's his formulation.

13 A. Prior to ...

14 Q. I beg your pardon?

15 A. Yes. Well, as it happens, the meningoencephalitis is
16 not well defended, really, is it?

17 Q. Yes.

18 A. And status epilepticus is rather poorly defended.

19 Q. Yes.

20 A. So the hyponatraemia and, obviously, brain swelling he
21 has put down as the major issue. That's it, I think.

22 Q. Then I just have a few more questions to you from
23 others.

24 Firstly, Claire's parents were made aware of a viral
25 illness with some sort of internal fitting. So far as

1 you are concerned, was that a sufficient explanation of
2 what was wrong with their daughter?

3 A. Not really, no, not in ... I think the seizure activity
4 was never clear, except for that which was related to
5 the hyponatraemia. She may have been fitting, but we
6 just don't know.

7 Q. And who should have been responsible for making sure,
8 throughout her admission, if I can put it that way,
9 until her collapse, that the parents understood what
10 people thought was wrong with Claire and how seriously
11 ill they thought she was? Who had that responsibility?

12 A. Well, it's a combination of the consultant and their
13 junior staff, backed up by nurses.

14 Q. Well, Dr Webb examined Claire at 5 o'clock with her
15 parents being there. Is it his responsibility at that
16 stage to make sure that they understand how seriously
17 ill their daughter is?

18 A. Yes. There are mentions --

19 Q. Just the mother, I beg your pardon. Only Mrs Roberts
20 was present, sorry, not both parents.

21 A. I think there are conventions about these matters and
22 sometimes the visiting consultant will give the
23 information. On other occasions when he's got the other
24 consultant with him, he would sort of defer. They'd
25 talk and then one probably would come back and explain.

1 So it could be either way round.

2 Q. If he was concerned about doing that because he didn't
3 regard Claire as his patient, would that be another
4 reason for him to contact Dr Steen and make sure that
5 she is giving that information to the parents of her
6 patient?

7 A. Yes, sure.

8 Q. It's a big question, but at what stage do you think
9 appropriate intervention could have saved Claire?

10 A. You might have got away with it at the later stage of
11 11.30 at night on the 22nd. I'm not sure because she
12 was just about to cone. Certainly, I think on the
13 morning round on the 22nd, there was plenty of time to
14 move in and start to correct things.

15 Q. At 5 o'clock?

16 A. Yes. Between the two. But I think, yes, that would
17 have been possible as well.

18 Q. And at 11.30, if I understand you, that would have
19 required quite urgent and extreme measures --

20 A. Yes.

21 Q. -- perhaps of the sort that really could only be
22 expected that a consultant might have instituted?

23 A. Yes, yes, absolutely.

24 Q. Or even known to institute?

25 A. Yes.

1 Q. And then, subject to anyone else asking something,
2 there's one final question, which is whether there is
3 any suggestion to the osmolality result of 249 at 3 am.
4 We can see that at 090-022-057.

5 A. When was that?

6 THE CHAIRMAN: 3 am on the Wednesday morning.

7 MS ANYADIKE-DANES: Yes. Do you see that result there?

8 A. Yes.

9 Q. In the context of the sodium result of 121. Five lines
10 above the Na, 121.

11 A. Yes.

12 Q. What is the significance of that?

13 A. I think you're getting really quite late in the argument
14 about this. I'm a bit unsure what to make of that, that
15 result.

16 Q. It's normally 285; is that right?

17 A. Yes, it's plainly low for what is normally a ... But
18 I'm not sure that a single osmolality done at that stage
19 is going to tell you an awful lot.

20 Q. I understand.

21 THE CHAIRMAN: Okay. We have to let the professor go.

22 I think we'll sort out, over the next day or two,
23 professor, how to tidy up the last bit of your evidence
24 in light of the new information which has come through,
25 which you haven't had a chance to look at. If at all

1 possible, we'll consider the two options of a video link
2 or a short written note from you. We'll need to tidy
3 that up as soon as possible.

4 Is there nothing else for the professor before he
5 goes?

6 MS ANYADIKE-DANES: No. Mr Chairman, I wonder if you'd give
7 me leave to discuss how one deals with this evidence,
8 given that he's still on oath.

9 THE CHAIRMAN: Is there any objection to that? No.

10 We'll have to resume a bit early. We'll resume at
11 1.45. Thank you.

12 (1.05 pm)

13 (The Short Adjournment)

14 (1.45 pm)

15 DR JOANNE HUGHES (called)

16 Questions from MR REID

17 MR REID: If I can call Dr Joanne Hughes, please.

18 THE CHAIRMAN: Can I start by apologising to you? I think
19 we've messed you about a few times before on when
20 exactly you give your evidence. I am grateful for you
21 coming up today.

22 A. No problem.

23 MR REID: Thank you, doctor. I think you are quite softly
24 spoken, so if you wouldn't mind speaking into the
25 microphone whenever you answer the questions.

1 You have made one witness statement to the inquiry,
2 WS140/1, dated 9 January 2012; is that correct?

3 A. That's correct.

4 Q. Would you like to adopt that statement as your evidence
5 before the inquiry?

6 A. Yes.

7 Q. Thank you. If I can bring up your curriculum vitae at
8 311/016-002, please. If we turn over the page to
9 page 003, please. This is your current employment.
10 You're currently a consultant paediatrician with an
11 interest in inherited metabolic disorders at the
12 Children's University Hospital, Temple Street in Dublin;
13 is that correct?

14 A. That's correct.

15 Q. You have been a consultant paediatrician
16 since February 2008, previously in the
17 Children's Hospital?

18 A. That's correct.

19 Q. So you have now been a consultant paediatrician for
20 four-and-a-half years; is that correct?

21 A. Yes, that's correct.

22 Q. Would I be correct in saying that you qualified as
23 a doctor from Queen's University Belfast in July 1992?

24 A. Yes.

25 Q. And you were a junior house officer for a year, a

1 general senior house officer for two years, and then
2 you were a paediatric senior house officer in Antrim
3 Area Hospital for a year.

4 A. Yes, that's correct.

5 Q. In August 1996, you went to the Royal as a paediatric
6 senior house officer; is that right?

7 A. That's correct.

8 Q. And you were in A&E for the first two months, but you
9 were on Musgrave Ward from the start of October on.

10 A. That's right.

11 Q. By that stage, you had been in paediatric medicine for
12 just over a year.

13 A. Just over one year, that's right.

14 Q. First of all, in October 1996, did you have any
15 awareness of the dangers of hyponatraemia?

16 A. I was aware of hyponatraemia as an entity and aware that
17 it could cause problems with cerebral oedema. I'm not
18 sure if I was aware that it could occur so acutely, but
19 I was aware of hyponatraemia as an entity.

20 Q. And where did you get that awareness from?

21 A. I'm sure we would have learned that throughout
22 university and then, in general, dealing with patients,
23 we would be aware that sodium balance was very
24 important.

25 Q. Would you have been aware specifically of the 1992

1 Arieff article, for example?

2 A. No, I don't think I would have been aware of that
3 article in particular.

4 Q. Did you have any awareness in October 1996 of the
5 Adam Strain case or inquest?

6 A. I don't think I did, to the best of my recollection
7 I think I heard about that much later.

8 Q. And you were in Musgrave Ward. Was that a ward in which
9 there was some paediatric nephrology and so on; is that
10 correct?

11 A. That's correct.

12 Q. Did you have any dealings with Dr Maurice Savage, now
13 Professor Savage?

14 A. Yes, in that he was based on the same ward. I wasn't
15 attached to the renal team during that attachment; I was
16 part of the general Musgrave Ward team, but I would have
17 obviously worked very closely with Professor Savage,
18 yes.

19 Q. Do you recall having any conversations with him at any
20 time about the Adam Strain case?

21 A. I don't recall any.

22 Q. If I can bring up your rota for October 1996. It's at
23 302-031-003, please. There we see on Tuesday,
24 22 October, you are the medical SHO between 5 and 10 pm
25 to be followed by Dr Stewart doing night cover, between

1 10 pm and 9 am; is that right?

2 A. That's correct.

3 Q. And there was also a surgical SHO on between 5 and

4 10 pm.

5 A. That's correct.

6 Q. Would you have been then the only senior house officer

7 covering the medical area?

8 A. Yes, that's correct. There would be one senior house

9 officer covering all of the medical patients and one

10 covering all of the surgical patients until 10 pm.

11 Q. So would it be correct to say that between 5 pm and

12 10 pm, there would have been a medical SHO, a surgical

13 SHO and an A&E SHO on duty at the Children's Hospital?

14 A. Yes. I can't remember how many SHOs. There may have

15 been more than one, but yes, that's correct.

16 Q. And you would then have covered all the wards?

17 A. We would have covered all of the medical patients on the

18 ward. So that would have been all the patients in

19 Allen Ward, Musgrave Ward, Belvoir Ward and any other

20 outlying medical patients throughout the hospital.

21 Q. First of all, do you recall any of the events of

22 22 October?

23 A. I don't, unfortunately, no. I have no recollection of

24 that evening.

25 Q. Would it be correct to say that anything you can answer

1 is your piecing together of information from the notes
2 and your general knowledge of what things were like
3 at the time?

4 A. That's correct.

5 Q. In terms of that, how many patients would you be
6 typically looking after during that medical shift from
7 5 pm to 10 pm?

8 A. Probably maybe between 40 and 50. There would have
9 been -- I can't remember how many beds there would have
10 been in Musgrave Ward and in Allen Ward. And then
11 of course you would have the infectious diseases ward,
12 Belvoir Ward, as well to cover. And then -- so it would
13 maybe between 40 and 50 patients. I'm not sure exactly.
14 And obviously your duties would also involve admitting
15 any patients from A&E.

16 Q. Sorry, I missed that last sentence, and obviously your
17 duties would also involve?

18 A. Admitting patients from A&E.

19 Q. We've heard from, I think, Dr Bartholome. She was the
20 registrar on call for the evening of the 22nd into the
21 23rd. She says there may have been up to 120 patients
22 under her care during that night. You're saying 40 to
23 50.

24 A. You asked me specifically about medical patients. The
25 Children's Hospital also had surgical patients and

1 neurology patients, cardiology patients, haematology
2 patients and ICU, so --

3 THE CHAIRMAN: So Dr Bartholome covered everything --

4 A. The registrar covered all the medical patients in the
5 hospital, yes.

6 THE CHAIRMAN: Right. Is she also then covering the other
7 areas you mentioned?

8 A. Yes.

9 MR REID: Would it be fair to say that both Dr Bartholome
10 and Dr Stewart, as the SHO on call, are covering
11 a larger number of patients than you covered between 5
12 and 10.

13 A. Yes, that would be entirely right.

14 Q. Is it almost like a step down in that there's the day
15 shift, which is the most intensive covering of staff and
16 then there's the 5 to 10 pm slot, when there are fewer
17 staff, and then there's the overnight slot of 10 until
18 9 am where there's the least number of staff?

19 A. That's correct. There's a lot of admissions in
20 Children's Hospital, particularly in the evening time,
21 after teatime, so for that reason there would be two
22 SHOs covering: one covering the medical admissions, one
23 covering the surgical admissions.

24 Q. Sorry, you're talking quite softly and very fast.

25 THE CHAIRMAN: You said there were a lot of admissions

1 in the Children's Hospital, particularly in the evening
2 time after teatime?

3 A. Yes. So there would be two SHOs: one to cover the
4 medical admissions, and one to cover the surgical
5 admissions. Then after 10 o'clock, that tended to ease
6 off. Sometimes, not always. Sometimes there would be
7 one SHO on after 10 o'clock, who would be covering
8 a significant number of medical and surgical admissions
9 as well as the patients who were already in the
10 hospital.

11 MR REID: If I can just bring up your witness statement,
12 140/1, at page 2, question 2. You say there that one
13 the 21st you would have worked a normal 9-to-5 day and
14 then on the 22nd, you did a 9-to-5 day in Musgrave Ward,
15 and then from 5 pm to 10 pm you were on call for medical
16 patients throughout the hospital and again the next day
17 you were on 9 to 5.

18 A. Yes. That's correct.

19 Q. During that 5 to 10 pm slot, the only registrar
20 available to you would have been Dr Bartholome; is that
21 right?

22 A. That's correct.

23 Q. If I can just turn over the page to page 3. At question
24 4(b) you say:

25 "During the period of on call, 5 to 10 pm, on

1 22 October, I would take bloods and administer
2 medication if necessary. I would see patients if asked
3 to do so by nursing staff and inform my senior
4 colleagues if there were any concerns."

5 Is that right?

6 A. That's correct.

7 Q. Would it be fair to say that your duties during that
8 period are slightly different from your normal day
9 duties, 9 to 5?

10 A. Yes. During that period you really are -- well, you're
11 admitting any patients from A&E and you're really
12 responding to any concerns from the staff who are
13 continually looking after patients. You might also have
14 a list of duties to complete from the handover at
15 5 o'clock. So you have a list of things to do.

16 Q. Is it twofold, number one, a reactive role to any
17 admissions and any problems that result?

18 A. Yes.

19 Q. And the second thing, that you have certain duties that
20 have to be carried out, tests, medications et cetera?

21 A. Yes, that's a good way of putting it.

22 THE CHAIRMAN: Was Dr Volprecht overnight the night before?

23 A. That's correct.

24 THE CHAIRMAN: So she wasn't your equivalent the night
25 before.

1 A. No.

2 THE CHAIRMAN: Thank you.

3 MR REID: You say there you would see patients if asked to
4 do so by nursing staff.

5 A. That's correct.

6 Q. Would it only be nursing staff or would it also be
7 medical staff and so on as well?

8 A. Well, the only other medical -- sometimes the registrar
9 might ask you to see a patient, but mainly it would be
10 the nursing staff who would raise concerns if there were
11 any.

12 Q. And when you say you would inform your senior colleagues
13 if there were any concerns, what do you mean by "senior
14 colleagues"?

15 A. The registrar in the first instance.

16 Q. And if you were unable to contact your registrar?

17 A. I don't think there has ever been an instance where
18 you are unable to contact the registrar.

19 Q. In what circumstances would you have considered at that
20 time that you should contact your registrar?

21 A. In relation to this specific case or in general?

22 Q. In general.

23 A. I always felt very supported in Children's Hospital.
24 It's quite a tight-run unit and, really, if there was
25 anything that you were worried about at all,

1 particularly in a patient who you weren't familiar with,
2 you would discuss it with the reg and usually what
3 we would do in the evening before finishing, if there
4 was time, would be to do a ward round where we walk
5 around the wards in the hospital and check if there's
6 any concerns or any jobs that need to be done. So there
7 was always an opportunity to speak with the reg if you
8 were worried.

9 Q. Two things just to pick up from that. First of all, you
10 said "particularly in a patient you weren't familiar
11 with".

12 A. Mm-hm.

13 Q. You wouldn't have generally been familiar with the
14 patients who weren't on Musgrave Ward during the day;
15 is that right?

16 A. That's correct.

17 Q. Secondly, you said you might have been able, at some
18 point, to do a ward round --

19 A. Yes.

20 Q. -- so to speak. Would that ward round be of a different
21 nature to the morning ward round?

22 A. Yes. Maybe "ward round" is a bad choice of words.
23 Maybe a "walk around" would be a better way of
24 describing it. We would have tried to walk round in the
25 evening and tidy up whatever jobs needed to be done on

1 the wards. And the nurses would know to gather things
2 up that weren't urgent for you to complete when you came
3 round.

4 THE CHAIRMAN: Who would you be doing with this, nurses or
5 with the registrar or --

6 A. You would try and do it with the registrar. Whether
7 that was -- I can't quite remember if that was before
8 10 o'clock or after 10 o'clock, but at some point in the
9 evening ... Particularly Dr Bartholome was very good at
10 doing that. You would try to have a walk round and make
11 sure all the jobs were done and that you were aware of
12 any problems.

13 MR REID: And what would you seek to achieve on this walk
14 round?

15 A. Really to be sure that you were aware of any concerns or
16 any potential concerns and also to ensure that you had
17 done whatever jobs needed done, such as bloods, fluids
18 prescribed, kardexes written up. That sort of thing.

19 Q. How would you gather the information that something
20 needed to be done? Would it be from the nurses who were
21 present, for example?

22 A. Yes.

23 Q. Might it also be from information you gained on the
24 handover from the day SHO?

25 A. Yes. Primarily your first port of call on taking over

1 in the evening would be a handover. Now, it was a very
2 informal handover, it's not formalised or it is
3 formalised now. But that would involve a brief
4 discussion about whichever patients are causing concern
5 and a list of duties that needed to be done, such as
6 bloods or fluids or antibiotics.

7 Q. Would you also look at the notes to see if anything was
8 outstanding or needed to be done?

9 A. No, because that would involve -- really, you would be
10 told about the patients that needed something done
11 rather than having to go and look through all of the
12 notes.

13 Q. You wouldn't have had time to look at each patient's
14 medical notes?

15 A. No, and it wouldn't have been relevant in a lot of cases
16 either, you know.

17 THE CHAIRMAN: The list of outstanding things to be done --
18 for instance, if Dr Stevenson is handing over to you,
19 would you be writing down what he was saying to you?

20 A. Yes, you would generally have a list of jobs to be done
21 in your hand, in your pocket, that list would grow as
22 the night goes on and people call you and things get
23 changed and moved around and prioritised as necessary.
24 That's how it works. You have a list of duties to be
25 done and you prioritise them as you see fit.

1 MR REID: For example, would you be told, say, that
2 acyclovir needs to be administered at 9.30 pm, and you
3 would write that down?
4 A. Yes.
5 Q. So you would know at 9.30 you have to come back to the
6 patient and administer acyclovir?
7 A. Yes.
8 Q. Would other SHOs ever hand over their to-do list just
9 simply to you?
10 A. Occasionally. The majority of people would stay on the
11 ward to try and get as many jobs done as possible, and
12 very few people ever left at 5 o'clock. Within reason,
13 you know -- I think I administered an antibiotic at
14 5.30, and that's a reasonable thing to do. Within
15 reason, you might hand over a few outstanding jobs from
16 the daytime, but usually you would try and clear them up
17 yourself.
18 Q. You have said briefly about the handover. You said it
19 was pretty informal, but there would be a brief
20 discussion about patients of concern and what duties
21 needed to be done.
22 A. Yes.
23 Q. You don't recall any handover from Dr Stevenson that
24 night.
25 A. I don't, unfortunately.

1 Q. At that time, was the usual practice for all the SHOs to
2 gather up and speak to you together or do you go around
3 speaking to each one individually?

4 A. I can't really remember, to be honest with you. I think
5 the main person to get handover from would have been the
6 Allen Ward staff because in Children's Hospital there
7 were two teams. So there was the Allen Ward team and
8 the Musgrave Ward team. So the main person to get
9 a handover from would have been the Allen Ward SHO.

10 Q. Why in particular Allen Ward? Is it that the patients
11 who have just come from A&E go to Allen Ward?

12 A. No, because I worked on Musgrave Ward, so I would have
13 known those patients.

14 Q. I see. Why Allen Ward in preference to the other wards
15 other than Musgrave Ward?

16 A. Because we worked in teams, so there was an Allen Ward
17 team, and a Musgrave Ward team, so all of the Allen Ward
18 team patients may not have necessarily been in
19 Allen Ward, but the Allen Ward team would have known of
20 them. So there may be some patients in Belvoir Ward who
21 were under the care of either the Allen Ward team or the
22 Musgrave Ward team. I would have known about the
23 Musgrave Ward team patients and I would need to be
24 informed about the Allen Ward team patients.

25 Q. If I can bring up an answer that Dr Stewart gave in his

1 witness statement. It's WS141/2, page 2, please.

2 Question 1(a):

3 "Normally, the retiring senior house officer gave
4 a verbal report to their colleague coming on duty. This
5 report covered all relevant information we would need to
6 continue the patients' care through the night."

7 Obviously, I realise Dr Stewart's doing the
8 overnight shift. He said:

9 "Such a report might include: the details of
10 patients on their way for admission [where they still
11 need to be clerked in]; information regarding current
12 ward patients whose condition was causing particular
13 person; important test results to check before the
14 morning ward round; a list of outstanding tests, for
15 example, blood tests or X-rays that had to be done; and
16 a list of outstanding urgent test results."

17 Which the lab would need to be contacted about.

18 Does that reflect what would normally have happened
19 in informal handovers at the time?

20 A. Absolutely, yes. That's a very good ...

21 Q. You've had an opportunity hopefully to have seen
22 Claire's medical notes and records now.

23 A. Yes.

24 Q. Given what's in the medical notes and records, what
25 would you have expected Dr Stevenson to have told you on

1 your coming on shift at around 5 o'clock?

2 A. I would have expected him to have told me --

3 Q. About Claire, obviously, is what I mean.

4 A. I would have expected him to have informed me that

5 she -- first of all, she was a sick patient. There's no

6 doubt about that, so I definitely would have been told

7 about her in the handover. I would have expected him to

8 have told me that Dr Webb had just seen her and

9 prescribed medication, that she -- I again, this is an

10 assumption. I would assume he would have told me that

11 the working diagnosis was status epilepticus and

12 meningoencephalitis that she was on anti-epileptic

13 therapy.

14 THE CHAIRMAN: Sorry, doctor, slow down a little bit. The

15 stenographer's going to lose track completely.

16 MR REID: You said prescribed medication, the sickness of

17 Claire, and the working diagnoses.

18 A. Yes.

19 Q. Anything else?

20 A. And also the fact that she needed to have some blood

21 tests and medication administered.

22 Q. Those blood tests would have been, what, from your

23 reading of the notes?

24 A. Well, it's stated in the notes that she needed to have

25 a phenytoin level at 9.30 following the loading dose.

1 I don't think it's stated in the notes -- well, I can't
2 recall whether it is or isn't stated that she needed
3 a U&E, but in any child who's on IV fluids, she should
4 have her U&E checked.

5 Q. Would you have expected a U&E check prior to the 9.30
6 taking of bloods?

7 A. Again, in reading the notes and in looking back on it
8 now in retrospect, I would have expected a U&E to be
9 taken in the morning. But I'm not sure what I would
10 have been given at handover. I presume if I was going
11 to be taking bloods at 9.30, that would be the time to
12 do all the bloods rather than doing a U&E at 5 pm and
13 then phenytoin at 9.30.

14 Q. Can I bring up 090-022-055, please? This is Dr Webb's
15 note at 5 o'clock. The second point of his plan, he
16 says:

17 "Check viral cultures, query enterovirus, stool,
18 urine, blood and T/S."

19 Would you have expected to have been told that those
20 needed to be done?

21 A. The stool and the urine would be nursing duties. As
22 a doctor, you wouldn't do that. I would have expected,
23 I suppose, to be told that viral cultures needed to be
24 taken.

25 Q. If I can move on from the handover to the drugs

1 prescription chart and bring up the original chart at
2 090-026-075. This is the original drugs prescription
3 chart which you rewrite at 9.30; is that correct?

4 A. That's correct, yes.

5 Q. Firstly, is this sheet a pro forma that would be on
6 every patient's file?

7 A. Yes.

8 Q. And where would it be kept? Would it be kept with the
9 file?

10 A. It would be kept with the nursing file. My recollection
11 in 1996 is that it would be kept on a clipboard at the
12 end of the bed, as opposed to with the medical file,
13 which kept in a trolley beside the nursing station.

14 Q. You think this would have been kept actually at the
15 bedside itself?

16 A. I think so. Sorry, let me correct that. I really can't
17 remember, to be honest with you. Sometimes there was
18 a list -- a book with a list of drug kardexes in it
19 in the treatment room, and I can't remember whether this
20 would be at the end of the bed or in with that. I'm
21 sorry.

22 Q. Although it would be useful, I presume, for it to be at
23 the end of the bed because these are prescriptions that
24 need to be done at different times --

25 A. Yes.

1 Q. -- and if you needed to check whether something had been
2 done or needed to be done, it'd be quite easy to check
3 at the end of the bed and see if it's there.

4 A. Yes.

5 Q. And would replacement sheets be present with that sheet
6 or would you have to go off and get those from
7 elsewhere?

8 A. Again, I can't quite remember, but they were readily
9 available. I think they were in a filing cabinet at the
10 nursing station where you just took out another kardex
11 to complete if necessary.

12 Q. It's a point you touched on earlier: how do you know
13 when physicians have to attend in order to administer
14 medication? Is it just from the handover or is it
15 sometimes you'll look at the kardex and say, "I need to
16 note down that".

17 A. You might be told at the handover, but more regularly
18 the nurses on the ward would bleep you and say, "We have
19 two or three antibiotics to be given at 5.30", or
20 whatever.

21 Q. So it's a dual responsibility: it is your responsibility
22 to know from the other doctor when prescriptions need to
23 be administered, and the nurses also need to be aware so
24 they can remind you?

25 A. Yes. Generally speaking, if it was a routine

1 antibiotic, that wouldn't be in the handover; it would
2 usually be the nurses would bleep you from each of the
3 wards and say, "We have an antibiotic due at
4 such-and-such a time".

5 Q. Is it correct --

6 THE CHAIRMAN: Sorry. So the phenytoin, as I understand it,
7 would be an unusual drug to be administering. So that's
8 the sort of thing you might expect Dr Stevenson to
9 mention to you.

10 A. Yes.

11 THE CHAIRMAN: Whereas other standard drugs, like
12 antibiotics, in essence you rely on the nurses to inform
13 you about those.

14 A. Yes, the phenytoin and the acyclovir are unusual drugs
15 and if acyclovir's just being started, I would have
16 expected to be given that information in the handover.

17 MR REID: Are there usual times? We see at the top of that
18 drugs prescription sheet the time of administration and,
19 I think, there are eight set times, and then there's an
20 "other times" column. When it comes to, say, 9.30 at
21 night, do you think on the ward, "This must be a time
22 when I need to administer medication"?

23 A. Yes.

24 Q. Just before we move on, you said about the walkabout
25 earlier. When normally on one of those shifts would

1 that walkabout have happened just on a normal evening?

2 A. From my recollection, we would have tried to have
3 a walkabout before 10 o'clock, before the single-handed
4 SHO came on overnight. That didn't always happen
5 because that's a particularly busy period, but generally
6 speaking, if it didn't happen at that point, as
7 a registrar you would have wanted to have a walk around
8 at some time before midnight if possible. Again,
9 allowing for the fact that it wasn't too busy in the
10 evening and you could do that.

11 Q. Is that because, come 10 o'clock, the resources are
12 less?

13 A. Yes.

14 Q. So you want to make sure you've covered anything that's
15 difficult before then?

16 A. Yes.

17 Q. If I can bring up alongside the document we've got in
18 front of us 090-026-073, please. This is your rewritten
19 drugs prescription sheet; is that correct?

20 A. That's correct.

21 Q. That's your handwriting, "Rewritten 9.30 pm,
22 22 October 1996"?

23 A. Yes. That's correct.

24 Q. Do you know why you rewrote the drugs prescription
25 chart?

1 A. Again, I don't have any recollection of the evening, but
2 from reading the notes, there is an entry in the nursing
3 notes with regards to increasing the midazolam infusion.
4 And there's no space on that kardex to write that up, so
5 I would have rewritten the entire kardex.

6 Q. So if I bring you to that nursing note, is that
7 090-040-141, please? This is Staff Nurse Ellison's
8 note. It says:

9 "Update PM. Stat IV Hypnovel at 3.25 pm.
10 Continuous infusion running at 2 ml per hour of
11 Hypnovel. To be increased by 0.1 ml per five minutes up
12 to 3 ml per hour."

13 Is that the reference you mean?

14 A. Yes, that's right.

15 Q. And it says "Doctor to write up" --

16 A. Yes.

17 Q. -- and then "Given stat dose. Sodium valproate at
18 5.15".

19 A. Yes.

20 Q. First of all, would you have had to attend -- I think we
21 touched on it earlier -- Claire's bedside to rewrite
22 that drugs prescription chart?

23 A. Not necessarily. Sometimes the drug prescription charts
24 were on the -- at the nurses' station for you to write
25 up.

1 Q. Okay. The midazolam change isn't the only change you
2 make to the chart. If I can bring both of them up.
3 090-026-073 and 075, please. So whenever you're
4 rewriting this, you transcribe the first five
5 medications with the additional note that the midazolam
6 is to be increased; is that right?

7 A. That's correct.

8 Q. But the sodium valproate from the earlier chart is not
9 transcribed across and neither is the "Drugs once only
10 prescriptions"; is that right?

11 A. That's correct.

12 Q. And can you explain just why that is, please, doctor?

13 A. I can't because I don't have any recollection of the
14 day. But what I would say is that I've very
15 deliberately crossed it out, so I would assume that I've
16 discussed that with someone and there is a reason for
17 that, but I don't recall what that is.

18 Q. We'll go into that in a minute. Another reason you've
19 given in your witness statement is that you needed to
20 rewrite the original prescription sheet because it was
21 full.

22 A. Yes.

23 Q. What do you mean by that, that it was full?

24 A. The prescription sheet on the right?

25 Q. Mm-hm.

1 A. There's no room to -- you can't just score out the
2 midazolam and write over the new dose. So you need to
3 write another prescription sheet, and the nurses usually
4 generally would prefer to work from one rather than two.

5 THE CHAIRMAN: Is that to avoid confusion?

6 A. To avoid confusion, yes.

7 MR REID: For example, if we bring up 090-026-076 alongside
8 as well, please. That's the continuation of the
9 original prescription sheet; is that right?

10 A. Um ... I think that's -- is that on the back of that
11 or ...

12 Q. Sorry?

13 A. I can't remember. This is an old prescription sheet, so
14 I'm just trying to remember what it looked like.

15 Q. It looks like it says "G, H, I, J, K" along the
16 left-hand side.

17 A. I think these were two separate pages, one was on the
18 front and one was on the back.

19 Q. One option obviously is to continue on to that second
20 page; isn't that right?

21 A. I'm not sure that that is an option. I would need to
22 see the original prescription sheet. I think this is on
23 the back, the right-hand side is on the back of that.
24 So I'm not sure that that is -- one is for IV and the
25 other is for oral. So you can't write the IV

1 prescriptions on the ...

2 Q. There's a possibility we might get the originals during
3 the break for you to have a brief look at. Whether it's
4 on the back or whether it's attached to it, would you
5 accept that it's a possibility that you can put it on to
6 the second page?

7 A. I don't think it was a possibility that you could put it
8 on the second page, so I think that's why I rewrote it.
9 In my recollection of working on Allen Ward and
10 Musgrave Ward, any time you got to the end of this sort
11 of sixth box here, you would rewrite the prescription
12 sheet, from my recollection.

13 Q. As you say, that's for the nurses, to keep them right?

14 A. The nurses are the ones that administer the medication,
15 so that's the most important thing.

16 Q. If you were rewriting the original prescription sheet,
17 and if we bring up 073 and 075 together --

18 A. Sorry, before you do that, can I just say that on the
19 left is for intravenous drugs, parenteral drugs. So
20 this is not oral drugs. The one on the right is oral
21 drugs. So you can't write this prescription on the
22 other one; does that make sense?

23 Q. It doesn't specify that. Do you have any --

24 A. Well, it does say "parenteral drugs" on the top of --

25 Q. Yes. So you're saying the one on the left is for IV

1 drugs --

2 A. Or IM.

3 Q. -- and the one on the right is for oral drugs?

4 A. Oral or rectal.

5 Q. I understand.

6 Can you bring up 073 and 075 again, please? Just in

7 terms of the note you have written, "Rewritten 9.30 pm",

8 do you think that it would have been -- you haven't

9 written anything on the original prescription sheet to

10 say that it was rewritten. Would that have been

11 something that could have been useful to write so that

12 people didn't mistake that for the current drugs

13 prescription sheet that was in use?

14 A. Um ... Yes, I think usually -- because this was a small

15 piece of paper, so usually it would be taken out, and

16 this would be put in place of it.

17 THE CHAIRMAN: The one that's taken out is put where?

18 A. In the notes, but taken away from, you know, the

19 prescription kardexes.

20 MR REID: So it's taken away from that primary position --

21 A. There wouldn't be two together, there would just be the

22 one.

23 Q. So if a doctor's coming to see it, the one they would

24 see first and centre is the rewritten one; is that what

25 you're saying?

1 A. There should only ever be one kardex there.

2 Q. Why did you not transcribe across the "Drugs once only
3 prescriptions" at the bottom?

4 A. Because they have been given once and once only. You
5 don't transcribe that. It's not a continuous
6 prescription. You would still have this prescription
7 sheet to go back on, so you would know that the patient
8 was started on these medications on the top and had the
9 once-only drugs administered at the time stated on the
10 prescription sheet. But you would know that the second
11 one on the left is a continuation of that because it
12 says, "rewritten". You wouldn't transcribe the
13 once-only prescriptions because they've been given.

14 Q. Is it not something that's perhaps useful to be able to
15 see the ones that have given as well?

16 A. No, because if you need to prescribe further drugs --
17 well, you can see them because this doesn't go away.
18 You can look in the notes and look at this and see what
19 has been given, but you can't prescribe -- basically you
20 would be prescribing them again and I couldn't sign that
21 I'd given them, so that's not something that you can
22 transcribe, that's not appropriate.

23 Q. If we look at the "drugs once only" on the right-hand
24 side, there is the midazolam of 120 milligrams and the
25 phenytoin of 635 milligrams. You might have heard from

1 the evidence so far that both of those seem to have been
2 erroneously calculated or noted. Did you know any of
3 the errors on that sheet?

4 A. At the time?

5 Q. Yes.

6 A. I have no recollection of the evening, so I don't know.

7 Q. With hindsight, would you consider you maybe should have
8 noted those errors?

9 A. I think I would have been unlikely to have noted them to
10 be honest with you because I would be unlikely to go
11 back and recalculate those doses.

12 Q. How familiar were you with midazolam and phenytoin
13 in October 1996?

14 A. Phenytoin would have been a fairly standard line for
15 status epilepticus in both adults and children. And
16 I had worked in adult neurology, so I was familiar with
17 phenytoin as a drug to use in status epilepticus.

18 Midazolam, I don't recollect that I had any
19 familiarity with using midazolam in 1996.

20 Q. Just while we're on the rewriting of the prescription
21 sheet, would you normally note the fact that you've
22 rewritten the drugs prescription sheet in the clinical
23 notes?

24 A. No.

25 Q. Why is that?

1 A. It's just not something that you would normally note.
2 You write prescription sheets fairly frequently,
3 depending on how many drugs people are on or for
4 whatever reason, but it's not something that would
5 generally be recorded in the clinical notes.

6 Q. We've looked already at the nursing note in which the
7 midazolam is increased. Are you aware of any
8 corresponding clinical note that relates to that?

9 A. I'm not.

10 Q. Do you know who might have directed that increase in
11 dose?

12 A. From reading the note, no, I don't know who directed it,
13 but I'm quite certain that it must have been someone
14 more senior, because again, as I said earlier, I didn't
15 have any experience in using midazolam at that time.

16 Q. So the only thing you have available to you is the
17 nursing note and the nurse saying that the dose should
18 be increased?

19 A. Yes. That wouldn't be unusual if the nurse had had
20 a conversation either by phone or in person with someone
21 else, someone has clearly directed in very clear terms
22 how it should be increased and the nurse has noted that
23 and then she has asked me to prescribe it. That's not
24 unusual in itself.

25 Q. You said that the use of midazolam at the time was

1 unfamiliar to you; isn't that right?

2 A. That's correct.

3 Q. So you come across this patient and you've been asked to
4 increase the dosage of a drug that's unfamiliar to you.

5 A. Mm-hm.

6 Q. And the only point you have regarding it is the nursing
7 note. Do you not consider at that point, maybe I should
8 check this with another doctor?

9 A. I don't recall the evening, so it may be that the nurse
10 has told me that another doctor -- I'm sure another
11 doctor has prescribed it. So if a nurse has told you
12 that a senior colleague has prescribed it, then
13 I wouldn't need to recheck that.

14 Q. Is it even to the extent that you would want to check to
15 make sure the dosage is correct?

16 A. I think increasing the dose from 2 micrograms per
17 kilogram per minute to 3 micrograms per kilogram per
18 minute was a reasonable -- is within the prescribing
19 guidelines of that drug, so I think that's reasonable.

20 Q. Yes, but at the time you were unfamiliar with midazolam.

21 A. Yes.

22 Q. Now you might be able to look at it and say that the
23 increase from 2 to 3 is a reasonable increase, but
24 at the time you weren't really aware of whether it was;
25 would you accept that?

1 A. I would, yes.

2 Q. So at the time you didn't know whether that was
3 a reasonable increase or whether it was a properly
4 calculated increase. In those circumstances, should you
5 not be double-checking something, whether it be the BNF
6 or with a senior doctor?

7 A. I may have done that, but I don't remember the evening.
8 It may be that the nurse has told me that someone has
9 said to increase the dose and I may have checked that,
10 but I can't remember.

11 Q. If you did check it, you haven't made a note that you
12 checked it with anyone; would you accept that?

13 A. Yes.

14 THE CHAIRMAN: On this scenario, is it most likely that it
15 was Dr Bartholome who had directed this?

16 A. I don't know. My initial reading of the note, I thought
17 it was Dr Webb, but I don't ... When you read the note
18 clearly, it doesn't state who has directed that
19 increase, so I can't surmise who it might have been.

20 THE CHAIRMAN: Right.

21 MR REID: If we actually bring up Dr Bartholome's evidence.

22 18 October 2012, page 27. She says beginning at
23 line 18:

24 "To change the dose that was received by Claire for
25 either or one of the other [as in midazolam or

1 phenytoin] is a decision I would not expect a first-term
2 SHO to make."

3 If we turn over to the next page, please. I asked
4 her whether she would have expected a direction or to
5 have contacted a senior colleague, and she said that she
6 would have expected that to have happened, and I asked
7 her if she would have expected that to have been noted
8 in the medical notes themselves, the clinical notes,
9 that the dosage was being increased and the drug sheet
10 was being written. She says, as you did:

11 "I do not expect her to document that she rewrote
12 the kardex, but I would have expected her to document
13 in the notes that she had liaised with a more senior
14 colleague and that the decision to increase the infusion
15 rate had been made by whoever that was."

16 And I asked her if she had any comment about the
17 fact that there was no note, and she said:

18 "I personally think there should have been a note
19 and it would appear from the documentation that this was
20 not done. It is something I would expect not only to be
21 dated, but also to be timed."

22 Do you have any comment just on what Dr Bartholome
23 has said there?

24 A. I agree that both increasing the midazolam and
25 discontinuing the sodium valproate are not something

1 that a first term SHO would have done without senior
2 consult. It wasn't -- in hindsight, yes, it would have
3 been helpful to have recorded who directed that, but
4 at the time in 1996, every conversation wasn't
5 necessarily documented in the notes. I think we've got
6 much better at that. So I think in 1996 if I'd been
7 given direction that a senior colleague had asked for
8 a prescription to be written, I would have done that and
9 dated it and signed it in the medical kardex, as I have
10 done.

11 Q. Let me ask you this: this is 9.30 at night and you're
12 increasing the dose of the midazolam. Midazolam again
13 is a drug you're unfamiliar with and you might have been
14 given information on the handover that Claire was quite
15 a sick child; would that be safe to say?

16 A. Yes.

17 Q. In those circumstances, do you think it would have been
18 appropriate to have re-examined Claire prior to
19 rewriting the drug kardex and increasing the dose of
20 midazolam?

21 A. Yes, I think that's reasonable.

22 Q. First of all, do you have any evidence to say that you
23 did examine Claire at that point?

24 A. Well, I was certainly with Claire at that point because
25 I took bloods and inserted a line, from the notes.

1 I haven't recorded anything in the notes, but I
2 certainly would have been with her and made an
3 assessment of her at the time.

4 Q. And in being there and making an assessment at the time,
5 what assessment would you think you would have done?

6 A. I would have wanted to know about her vital signs,
7 I would have wanted to know what her blood pressure,
8 pulse and temperature and things were, and I would have
9 wanted to know how she had been, looking at the
10 observation charts and things, and compare that to how
11 she'd been earlier in the day.

12 Q. If you had done that assessment, would you have expected
13 you would have documented that?

14 A. Usually I would have documented that, yes.

15 Q. Do you accept that there doesn't seem to be a note in --

16 A. Yes.

17 Q. And indeed, if we turn to page 42 of Dr Bartholome's
18 evidence, she says at lines 5 to 9 -- I asked her
19 a similar question, what she would have expected of you.
20 She said:

21 "Seeing that she was on the ward and actually
22 dealing with something that affected Claire, she was
23 rewriting her kardex, so that would usually be done
24 at the bed side or close to that. Yes, I would have
25 expected her to have a look at Claire and examine her

1 and document that."

2 Do you accept that?

3 A. Yes.

4 Q. If you'd been there at the time, do you think that you
5 would have looked at her central nervous system
6 observations?

7 A. Yes.

8 Q. If I can bring those up. 090-039-137, please.

9 THE CHAIRMAN: Sorry, there's no doubt that you were there
10 at the time, sure there isn't.

11 A. There is no doubt. I was there.

12 MR REID: If you'd examined and assessed her was what
13 I meant to say.

14 A. Yes.

15 Q. If you had examined or assessed her, you would have been
16 aware of her CNS observation chart.

17 A. Yes.

18 Q. You've got it before you now. You can see, at 9 pm, her
19 Glasgow Coma Scale was:

20 "Eyes open, none. Best verbal response,
21 incomprehensive sounds. Best motor response, flexion to
22 pain."

23 That gives her an overall score of 6.

24 A. Yes.

25 Q. And that 6 is a drop from the previous value of 8 at

1 8 pm.

2 A. Yes.

3 Q. If you had seen those scores, would you have appreciated
4 that Claire's condition was perhaps deteriorating?

5 A. I think it's very hard -- I don't have any recollection
6 of it and it's very hard to disassociate what I know now
7 and my experience now with how I might have looked at
8 this in 1996. I think looking at -- her score had been
9 6 earlier in the evening, whenever she had been seen by
10 the consultant paediatric neurologist, and she was on
11 treatment for status epilepticus and
12 meningoencephalitis, which were the two working
13 diagnoses.

14 I'm not sure now ... With my experience now,
15 I would certainly feel that that's a serious
16 deterioration, but I'm not sure, in 1996, that I would
17 have had enough knowledge or experience to question the
18 fact that things were -- although they had deteriorated
19 from the hour previously, they were similar to where
20 they had been a couple of hours earlier when she had
21 been seen by a senior colleague and, you know, treatment
22 was in progress for that.

23 THE CHAIRMAN: Let me go back a bit on this. If you had got
24 a handover from Dr Stevenson at 5 o'clock and that had
25 been an informed handover by him, do you think that you

1 would have been given news that Claire was really very
2 unwell?

3 A. I don't know, to be honest, because there seems to be --
4 looking at it -- again, this is just looking at the
5 other evidence. It seems to be that that wasn't
6 necessarily appreciated, that she was very unwell,
7 although looking at this, it looks clear. You know,
8 from ...

9 THE CHAIRMAN: Knowing what we know now, obviously because
10 Claire has died, it seems, on the evidence I've
11 understood, to be blindingly obvious that she was very
12 unwell at 5 o'clock.

13 A. Yes.

14 THE CHAIRMAN: But Mr Roberts, when he gave his evidence
15 last week, was wondering whether that's what everybody
16 is now saying looking backwards or whether that is
17 really what was realised at the time. Do you understand
18 his --

19 A. I fully understand that.

20 THE CHAIRMAN: And does that seem to you to have some
21 substance to it?

22 A. It does.

23 THE CHAIRMAN: We're all looking backwards now, but actually
24 at 5 o'clock on Tuesday 22 October 1996, there was
25 a number of opportunities with various people to see how

1 Claire was, and it may very well be that that was missed
2 by a collection of people.

3 A. I appreciate that there doesn't seem to have been the
4 level of concern at the time that, looking back on it,
5 it appears there should have been. Does that make
6 sense?

7 THE CHAIRMAN: It does. It leads into the question of,
8 among many, many things, whether Mr and Mrs Roberts were
9 allowed to go home on the Tuesday evening despite the
10 fact that Claire was very unwell because, in fact, it
11 wasn't realised that she was very unwell.

12 A. Yes.

13 THE CHAIRMAN: It's a bit hard to defend the fact that
14 nobody seems to have twigged to the fact that she was
15 very unwell; isn't that right?

16 A. Yes, I agree.

17 MR REID: If I can come back just to the midazolam and the
18 increase in that. If we bring up the fluid balance
19 sheet at 090-038-135, please, and if we go to page 136.
20 You see on that, at the second entry on the intravenous
21 fluid prescription chart, there's an amount:

22 "50 ml. Type of fluid: normal saline.

23 Additives: plus 69 milligrams midazolam at a rate of
24 2 ml per hour over 24 hours."

25 And that's signed by Dr Stevenson and Nurse Taylor.

1 Is that something that should have been amended
2 at the point at which the rate was increased to 3 ml per
3 hour?

4 A. There's two thoughts on that. If it's a drug, it should
5 be prescribed on the drug kardex as opposed to in the
6 intravenous fluid prescription chart. On the other side
7 of that chart, the rate at which it's given is recorded.
8 But it really should be prescribed on the drug kardex
9 because it contains a drug.

10 Q. So are you saying that in fact it's Dr Stevenson who
11 erroneously put it on this chart instead of the drugs
12 chart?

13 A. No, he put it on both. The reason it's there is because
14 you have to record whatever fluid is given -- so the
15 fluid is the normal saline, 50 ml -- and if you have an
16 additive to it, then you have to record it, but it also
17 needs to be prescribed on the drug kardex.

18 Q. My point is: the rate there is 2 ml per hour; should
19 you, whenever changing the rate to 3 ml per hour, have
20 amended that entry to say "3"?

21 A. It's difficult to amend that because it would be the
22 same bag, so you can't score that out and rewrite it on
23 another line because it would look like it was another
24 bag. That would have been recorded on the other side of
25 the sheet with the rate of increase noted on the other

1 side of the sheet at the time that it was increased.

2 Q. So you're saying it would just have been noted on the
3 drugs prescription sheets?

4 A. It's also noted on the fluid prescription sheet on the
5 other side.

6 Q. Ah, yes. I understand. So you're saying, if we go back
7 to 135, that the increase is noted there at 22.00?

8 A. Yes.

9 Q. Where it says "At 3 ml per hour"?

10 A. Yes.

11 Q. Thank you. Would you have notified the ward sister or
12 the nurse in charge of the change of prescription rate?

13 A. The nurse on the ward would have been notified.

14 Q. She would have been notified by you or by one of the
15 nurses?

16 A. It would have been one of the nurses who asked me to
17 write it up in the first instance. I would have
18 rewritten it and the nurses would be aware of that.

19 Q. Just in terms of the midazolam, you say that you were
20 unfamiliar with it at the time. Would you have been
21 aware of any monitoring of Claire that would need to be
22 done while she was receiving that intravenous drug?

23 A. Although I was unfamiliar with midazolam in this use,
24 it is a benzodiazepine, which can suppress your
25 respiratory rate, which I would have been aware of and I

1 would have expected her, as she was, to be connected to
2 a saturation monitor and ...

3 Q. That's to monitor her O2 sats?

4 A. Yes.

5 Q. And those were satisfactory throughout the time that you
6 were looking after her; is that right?

7 A. Do you have them on the observation --

8 Q. I think I do, yes. If we bring back up the CNS chart at
9 090-039-137, please. They're handwritten at the very
10 bottom, you can see they're in the high 90s.

11 A. Yes, that's all satisfactory and her respiratory rate is
12 also recorded there.

13 Q. If I can bring you just to the original drugs
14 prescription sheet at 090-026-075, please. In terms of
15 the sodium valproate, we can see that Dr Sands gave
16 a 400 milligram drugs once only prescription at 5.15 pm;
17 is that right?

18 A. Yes.

19 Q. And then there's an entry at F, which says -- and it's
20 scored out -- "22 October 96, sodium valproate" and "21"
21 and then -- I think it might be a "0", but I can't be
22 sure -- "milligrams per 50 ml over two hours", "method
23 of administration, IV", and your signature, and then
24 "discontinued 22 October" and your initials as well?

25 A. Yes, that's correct.

1 Q. You were the doctor who both entered the continuous
2 administration of sodium valproate and the doctor who
3 discontinued it.

4 A. That's correct.

5 Q. So it's your writing. Do you think it says
6 "210 milligrams", if we can blow that up? Is that
7 "210"?

8 A. It's either "210" or "240".

9 Q. Yes. In fact, perhaps it could be 240 because her
10 weight was 24 kilograms --

11 A. It looks more like "240", yes.

12 Q. -- 24 times 10, 240; would that be fair?

13 A. Yes.

14 Q. Would you have expected the continuous administration of
15 the sodium valproate to be noted in the clinical notes?

16 A. I think it is noted in the clinical notes.

17 Q. I'm saying the fact that you started on the continuous
18 administration of it.

19 A. In Dr Webb's note from earlier, I think he has
20 prescribed it to be given as a stat dose followed by
21 continuous infusion, hasn't he?

22 Q. If we bring that up, it's 090-022-055. Just the very
23 final point:

24 "IV sodium valproate 20 milligrams per kilogram. IV
25 bolus followed by infusion of 10 milligrams per kilogram

1 IV over 12 hours."

2 A. Yes.

3 Q. Is there any benefit to you making a note that that IV
4 is started at some point?

5 A. You wouldn't usually. You would usually prescribe it
6 and it would be recorded on the fluid balance sheet and
7 in the drug kardex as to when it's started.

8 Q. If I lead you on that then, if we go to the fluid
9 balance sheet at 090-038-135 and 136. Would you accept
10 that on the basis of those fluid balance charts, that
11 the sodium valproate's continuous infusion isn't noted
12 on either?

13 A. Yes, absolutely, and I appear to have discontinued it
14 very deliberately.

15 Q. What do you mean, you appear to have discontinued it
16 very deliberately?

17 A. As opposed to just -- I put a line through it and signed
18 it and dated it.

19 Q. What I'm saying is, apart from your note in the kardex
20 that it's started and then discontinued, there's no
21 other note to say that it was actually administered over
22 that time; would you accept that?

23 A. Yes. Yes, I would.

24 Q. Do you know whether at all whether it was administered
25 at that time?

1 A. I don't have any direct recollection of it, but I can
2 assume from that that it wasn't, but I can't give you an
3 explanation as to why not.

4 Q. For example -- and I know we're dealing with
5 possibilities -- is it possible that you looked at
6 Dr Webb's note, wrote it up and then decided that
7 actually it wasn't being administered so you
8 discontinued it at the same time?

9 A. Yes. I mean, I think that's likely what's happened,
10 I've written it up and then, for whatever reason --
11 that's what I can't recall -- I have discontinued it.
12 It doesn't appear to have been given as the continuous
13 infusion.

14 THE CHAIRMAN: Your point is that you wouldn't have done
15 this off your own bat, that would have been after some
16 discussion with somebody?

17 A. Yes, and I'm not sure what the reasons for that may have
18 been, but I have no recollection of it, so I can't
19 expand any further on that.

20 MR REID: The chairman makes the point, as you said, you
21 wouldn't have done it off your own bat.

22 A. I don't think so.

23 Q. And as a junior SHO, you probably wouldn't have taken
24 your own initiative and discontinued it; would that be
25 correct?

1 A. Yes.

2 Q. Would that mean that you would have had to have had
3 direction from a senior doctor?

4 A. In all likelihood, yes.

5 Q. I suppose the obvious question is: do you know of any
6 note in the notes that says that it was to be
7 discontinued?

8 A. No.

9 Q. And you've no idea who the senior doctor might have been
10 to have given you that information?

11 A. Well, I haven't recorded who that may have been.

12 Q. Again, should the contact from the senior doctor that it
13 was to be discontinued have been noted?

14 A. I think, in hindsight, absolutely. You know, in
15 hindsight it helps to work out your thought processes
16 later when you can't remember.

17 Q. Because even the midazolam increase was noted in the
18 nursing notes --

19 A. Yes.

20 Q. -- but the direction to discontinue the sodium valproate
21 from a senior doctor wasn't noted in the nursing notes;
22 isn't that right?

23 A. No, I accept that.

24 Q. If I can bring up 090-026-075 and 077 together, please.
25 Actually, we might need to -- on the left-hand side

1 we can see at C, it's:

2 "22 October 1996, cefotaxime, 600 milligrams to be
3 administered at 6.30 am, 12.30 pm, 5.30 pm and 9.30 pm
4 by IV."

5 And that's signed on of by Dr Stevenson; do you see
6 that, doctor?

7 A. Yes.

8 Q. If we can blow up number 077, we see, at 5.30 pm, there
9 is a "C" marked?

10 A. Yes.

11 Q. And this is your signature, your initials; is that
12 right?

13 A. Yes.

14 Q. We've heard from various witnesses that the practice
15 at the time was that drugs were double signed.

16 A. The nurses' practice was to double sign drugs. The
17 doctors tended just to sign it themselves.

18 Q. Was it the case that doctors would sign it, expecting
19 that a nurse would double-check it at some point and
20 sign it off as well?

21 A. No, generally speaking when the doctors gave the first
22 dose of medication, and usually just signed it the once,
23 the nurses tended to double-check.

24 Q. So would it be a regular occurrence then for the doctors
25 to have been the only signature down --

1 A. Yes.

2 Q. Okay.

3 THE CHAIRMAN: So if a nurse signs it, there should be
4 a second signature, and that might be a nurse or, if
5 a doctor comes along, the doctor can be the second
6 signature for a nurse?

7 A. Yes.

8 MR REID: On the basis of that, you think that you
9 administered the cefotaxime at 5.30.

10 A. Or thereabouts. Generally speaking, it wouldn't always
11 be exactly at 5.30, it might be somewhere in and around
12 that time, but you would sign it in that box because
13 that's what was available.

14 Q. And the administration of cefotaxime is noted on the
15 fluid balance chart. We've heard some evidence from the
16 nurses about that. Do you have any explanation why it's
17 not on the fluid balance chart? I know that's filled in
18 by the nurses.

19 A. Cefotaxime? It's a small dose. It is not usually
20 recorded at all on a fluid balance chart.

21 Q. That's what Staff Nurse McCann said.

22 A. Yes.

23 Q. The cefotaxime was to be administered at 9.30 as well.

24 A. Mm-hm.

25 Q. You attend at 9.30, as we can see from the chart in

1 front of us, and certainly you administered D, which is
2 acyclovir.

3 A. Yes.

4 Q. And there's also an "A" noted there, which is --
5 if we bring up 075 again, please -- phenytoin.

6 Phenytoin is A. Do you have any knowledge of whether
7 phenytoin was administered at 9.30 pm?

8 A. I don't. I don't recall.

9 Q. Because the other evidence the inquiry has heard seems
10 to be that it was administered around 11 o'clock at
11 night.

12 A. Okay.

13 Q. You were administering the acyclovir at that time.

14 A. Yes.

15 Q. Do you have any reason why the cefotaxime wasn't
16 administered at that time as well?

17 A. There could be a few reasons. One may be that if the
18 first dose was given a bit later than initially
19 prescribed, you might leave it a little bit later before
20 giving the subsequent doses. It may be that there
21 wasn't an IV line available; the acyclovir's given over
22 an hour or so, so it may be that you would have to wait
23 until that's been administered and then give the second
24 dose of cefotaxime whenever you have a line free.

25 Q. It certainly seems from what we've been discussing that

1 that first one, the cefotaxime, was given at the correct
2 time of 5.30, so it wasn't given late; would you accept
3 that?

4 A. I can't remember, to be honest. If that's the evidence
5 that you have, then that's fine.

6 Q. It seems from the charts that you gave it at 5.30, which
7 was the scheduled time. So you're saying you think the
8 reason the cefotaxime wasn't given was because one of
9 the IVs was filled with acyclovir at the time --

10 A. That's one explanation. Also, if the nurses are giving
11 the subsequent doses of cefotaxime, it may be that --
12 I think probably the most likely explanation is that
13 there was no IV line, to be honest, given that she's
14 having a couple of different infusions.

15 Q. In those circumstances, do you make a note to
16 say: cefotaxime still needs to be administered here?

17 A. Me personally make a note?

18 Q. Yes.

19 A. No, because it would be the nurses administering it at
20 this point. The first dose of antibiotics are given by
21 the doctor and subsequent doses are given by nurses, in
22 1996.

23 Q. Did that only apply to antibiotics or to other
24 intravenous medication?

25 A. Mostly antibiotics, all other medication as well, but

1 there are some other medications that the doctor always
2 gave.

3 Q. Would an example be those anticonvulsant drugs?

4 A. Usually, yes. I think. I can't quite remember, but
5 I think that would be the case.

6 Q. For example, the 11 o'clock administration of the
7 phenytoin?

8 A. Yes.

9 Q. Would you have expected that to be done even though it
10 was a second dose? Would you have expected that to have
11 been done by a doctor?

12 A. I can't quite recall what the normal practice in 1996
13 was, but I think that's possibly the case.

14 Q. So the acyclovir, you think, was given at 9.30.

15 A. Yes.

16 Q. We see again from the chart in front of us the phenytoin
17 is ticked for 9.30 pm there as well.

18 A. Yes.

19 Q. Again, what reasons do you think that the phenytoin
20 wasn't given at 9.30 and was given instead at 11 pm?

21 A. Well, I took a phenytoin level at 9.30, and I would
22 expect, as we heard this morning, that you would
23 withhold any subsequent doses until you had the level
24 back.

25 Q. Would it ever be the case that you would see that it's

1 to be given at 9.30, so you obtain the bloods in advance
2 of that so you have the levels for the time it's to be
3 administered?

4 A. Um ... Well, you have to take the level at a certain
5 time and I think 9.30 was the appropriate time to take
6 it, after administering the loading dose. If you take
7 it too soon, you won't get an accurate level.

8 Q. We had the ward sister, Angela Pollock, giving evidence
9 last week. Do you remember Angela Pollock?

10 A. Yes.

11 Q. If I can bring up her evidence, it's day 50, 30 October,
12 at page 163. I think that might be the wrong page.

13 We'll come back to that maybe at the break.

14 As you say, you were the only medical SHO on during
15 that period.

16 A. Yes.

17 Q. If I can bring up the record of attacks observed at
18 090-042-144, please. There are two attacks observed
19 during your period on duty in and around Allen Ward;
20 isn't that correct?

21 A. Yes.

22 Q. The first at 7.15. There's:

23 "Teeth clenching and groaned; duration, 1 minute;
24 state afterwards, asleep."

25 I think you've said in your statement you have no

1 knowledge of being informed about that attack; is that
2 right?

3 A. No.

4 Q. At 9 pm, there's then the episode of:

5 "Screaming and drawing up of arms. Pulse rate
6 increased up to 165bpm, pupils large but reacting to
7 light. Doctor informed. Duration 30 seconds. State
8 afterwards, asleep. [Initials] Lorraine McCann."

9 Do you have any knowledge of whether you were the
10 doctor informed at that time?

11 A. I don't have any direct recollection, but it's likely
12 that I was.

13 Q. Yes. In fact, Staff Nurse McCann has given evidence to
14 say that although she can't be sure, she thinks that the
15 most probable person, just from logically working out,
16 was yourself.

17 A. From general practice.

18 Q. Because the SHO would have been the first port of call;
19 is that right?

20 A. Yes.

21 Q. If you were informed about the seizure, what do you
22 think you would have done?

23 A. It depends on what I was informed of. If the seizure
24 had finished and she was asleep now, then other than go
25 along and do ... Well, you would want to go along and

1 reassess and have a look at things, which is obviously
2 what did happen at 9.30. You want to have a look at the
3 attacks she's had, have a look at her Glasgow Coma
4 Scale, have a look at her pulse and blood pressure and
5 see how things were progressing.

6 Q. Claire's parents say that they left the hospital at
7 about 15 or 20 minutes maybe after this.

8 A. Yes.

9 Q. And you're recorded as being present in and around 9.30
10 to write the drugs sheet?

11 A. Yes.

12 Q. Do you think it's perhaps probable that you were aware
13 of this attack whenever you attended at half nine?

14 A. Yes, I think it's probable.

15 Q. You said, on the basis of that, that what you would do
16 is reassess Claire and you would look at her Glasgow
17 Coma Scale and look at different elements of her care.

18 A. Mm-hm.

19 Q. So effectively, do you think that at half nine you would
20 have done probably, if not a full examination of Claire,
21 you would have done what you would consider to be
22 a proper examination of her in any event?

23 A. Yes, I think so.

24 Q. At least, at your experience level.

25 A. Yes. I mean, I would have ... It's a child who's

1 reported to have had a seizure-type episode, who's on
2 anti-epileptic medication, and is on hourly CNS obs, so
3 I would have wanted to reassess all of that information
4 and see where I thought things were going.

5 Q. Okay. Again, you don't recall, but you now know the
6 information you would have had at around 9.30.

7 A. Yes.

8 Q. First of all, what do you think you would have
9 considered Claire's condition to be at half past nine
10 in the knowledge of that material?

11 A. With hindsight, as I said earlier, looking back at it,
12 it's very hard to not appreciate that she was a very
13 sick child. However, looking at both Mr and
14 Mrs Roberts' statements and the other statements from
15 the nurses, I'm not sure that there was an appreciation
16 of how sick she was, and I'm not sure that I would have
17 appreciated that at the time.

18 THE CHAIRMAN: Sorry, but the reason why there's no
19 appreciation in Mr and Mrs Roberts' statements is that
20 nobody has told them she's sick.

21 A. I know that.

22 THE CHAIRMAN: So they've expressed concerns -- in fact,
23 they have expressed concerns from 11 o'clock in the
24 morning.

25 A. I appreciate that.

1 THE CHAIRMAN: So if we're going to work out, with
2 hindsight, what the level of appreciation was, you
3 effectively have to discount Mr and Mrs Roberts because
4 they're depending on the doctors and nurses telling them
5 how sick she is.

6 A. I appreciate that, absolutely. What I'm saying is that
7 I may not have appreciated it either from whatever
8 information I was given. That's my point.

9 THE CHAIRMAN: Sorry to be blunt, doctor, is that because of
10 your comparative level of experience at the time?

11 A. Absolutely. It's hard for me, looking back now. With
12 the experience that I have now, you can clearly see that
13 this is a very sick child, but it's very hard for me to
14 look back at how I would have been, as a first-year SHO,
15 looking at this as a child who has a Glasgow Coma Scale
16 of 6, she had a Glasgow Coma Scale of 6 earlier in the
17 evening when she was seen by a more senior doctor and
18 she was on treatment for that. So it's very hard for me
19 to put myself in my shoes in 1996 and see -- it would be
20 very hard to challenge or to question more senior input.

21 THE CHAIRMAN: But then sort of begs of question of who
22 we are challenging or who you would be challenging.
23 Looking back on it, as you have done obviously to
24 prepare to give your evidence, from Claire's history
25 that day, particularly from the Tuesday morning, at what

1 point now would you become worried about her condition?

2 A. Now with my level of experience?

3 THE CHAIRMAN: Yes.

4 A. In the early afternoon. Well, I would have been

5 concerned about her from the start, but I would have

6 been more concerned in the early afternoon when her

7 Glasgow Coma Scale first fell first of all.

8 THE CHAIRMAN: She doesn't appear to be responding

9 positively to the treatment she's getting from --

10 A. Multiple anti-epileptic drugs.

11 THE CHAIRMAN: Yes. So that should certainly be apparent at

12 5 o'clock.

13 A. Yes.

14 THE CHAIRMAN: Thank you.

15 MR REID: Can I sum up then your actions with regard to

16 Claire? It seems you administered cefotaxime at

17 5.30 pm, and it seems then that you returned at 9.30 pm,

18 and, at that point, you rewrote the drugs prescription

19 chart, you discontinued the sodium valproate -- if it

20 was ever started -- and you increased the midazolam

21 dose.

22 A. Mm-hm.

23 Q. Would I be correct in that so far?

24 A. Yes.

25 Q. You also then took for the phenytoin level and, at the

1 same time, you were taking bloods for U&E.

2 A. Yes.

3 Q. Is that then a fair summary of everything that you did
4 in Claire's case?

5 A. I think I inserted a line as well, an intravenous line
6 at that point.

7 Q. I do apologise. You also inserted an IV line in order
8 to start the acyclovir at 9.30.

9 A. Yes.

10 Q. At 9.30, you were there doing a full assessment. You
11 say you probably would have been made aware of the
12 episode of screaming and drawing up of arms.

13 A. Yes.

14 Q. You would have been aware that her GCS had dropped from
15 8 to 6, at least in the last hour. And you would also
16 have been aware that the last time she had been seen and
17 assessed by a doctor had been four-and-a-half hours
18 previously by Dr Webb.

19 A. Yes.

20 Q. And it would be safe to assume that her condition
21 certainly hadn't got any better in that time.

22 A. Yes.

23 Q. I mean, in fact, I think we've already debated about
24 whether it had deteriorated over that period. If you
25 had known about that attack at 9 pm, would you have

1 accepted on the basis of that that it had deteriorated?

2 A. Well, it's hard to say on the basis of that one attack

3 that it had deteriorated. I don't think that -- I think

4 you have to take the whole thing into consideration

5 rather than just that one episode.

6 Q. Well, with your knowledge of the episode, your knowledge

7 of her GCS, the knowledge of the medication she would

8 have had and also the knowledge that a doctor hadn't

9 seen her in four-and-a-half hours, do you think with

10 that knowledge that that was an opportune moment to

11 contact a senior doctor, say Dr Bartholome, in order to

12 ask them to see what was obviously a sick child?

13 A. And I may have contacted Dr Bartholome at the time.

14 I just have no recollection of it. I may have discussed

15 with her all of this at the time, but there's no record

16 of it, so I can't say whether it did or didn't happen.

17 Q. If we can bring up beside each other 090-022-055 and

18 056, please. We can see on the screen the note by

19 Dr Webb at 5 o'clock and then the note by Dr Stewart at

20 11.30 pm. I have just gone through with you the summary

21 of the things that you did in Claire's case --

22 A. Yes.

23 Q. -- but there isn't a medical note of any of that.

24 A. Yes.

25 Q. You'd accept that?

1 A. Yes.

2 Q. Would you accept that in the context of all of the
3 things I've just said, including the fact that you
4 probably did a reassessment of her and the fact that you
5 had been made aware of this 9 o'clock episode, that
6 making a clinical note would have been at least one of
7 the minimum things that should have been done at that
8 stage?

9 A. I think, in retrospect, making a clinical note would
10 have been very helpful, yes.

11 Q. If I can then turn just to your handover to Dr Stewart
12 in and around 10 o'clock. Dr Stewart says he arrived
13 into the hospital around 9.30 to receive the handover
14 from you. We've just gone through what you might have
15 known at that stage. What do you think you would have
16 relayed on to Dr Stewart at the handover at 10 pm?

17 A. Again, this is hypothetical because I don't remember
18 what happened that night. But I would have expected me
19 to hand over to him the fact that Claire was on hourly
20 obs, that she had a very low Glasgow Coma Scale, that
21 she was on a number of anti-epileptic drugs as well as
22 antivirals and antibiotics, and that she had some blood
23 tests checked, the results of which would be outstanding
24 and should be checked.

25 Q. Dr Stewart's first attendance is at 11.30, when the

1 sodium and phenytoin results come in. If you had been
2 concerned about Claire, maybe to the extent that you
3 would want the senior doctor involved, do you think you
4 would have told him that at 10 o'clock?

5 A. I think I would have, but I think from reading his
6 deposition that the senior doctor was aware of Claire
7 and how she was at the time as well. So I think that
8 was -- that may have been something that I handed over
9 to him, but I think we were aware at the time. But
10 I can't ...

11 THE CHAIRMAN: Let's set aside hindsight. Is it not your
12 position, doctor, that because of your level of
13 experience in 1996, you really didn't quite appreciate
14 how significant Claire's problems were?

15 A. I think that's probably reasonable, yes.

16 THE CHAIRMAN: So that when you handed over to Dr Stewart,
17 assuming there was a handover, then that may not
18 necessarily have flagged major concerns on his part
19 because, if it had, he might well have seen Claire some
20 time before 11.30?

21 A. I may not have handed over the significance of it, but
22 I certainly would have handed over the fact that she was
23 on medication and that she needed some results checked.
24 But I agree that I may not have appreciated the severity
25 of it.

1 MR REID: We have a few minutes just before we break.

2 You're currently on the clinical governance committee
3 at the Children's Hospital in Temple Street in Dublin;
4 isn't that right?

5 A. That's correct.

6 Q. And you have been part of that for the last year; isn't
7 that right, doctor?

8 A. Yes.

9 Q. Okay. What experience do you have as part of that
10 clinical governance committee in audits or in
11 discussions or investigations after the death of
12 a child?

13 A. The clinical governance committee in Temple Street is
14 quite a new thing. It has only just been set up in the
15 past year. We don't -- part of our remit is not to
16 carry out audits. That would be done as part of the
17 morbidity and mortality meetings. And they do occur
18 regularly in the intensive care and, more recently, in
19 our unit as well.

20 Q. Let me ask you: in October 1996, when was the first time
21 that you learned that Claire Roberts had, unfortunately,
22 died?

23 A. I can't recall the first time. When I was asked to give
24 a statement to the inquiry is the first recollection
25 that I have now of it.

1 Q. So you hadn't heard it from any other doctors or anybody
2 else who was on at the time?

3 A. I'm sure at the time I did hear of it, but I can't --
4 I don't have any recollection of it now.

5 Q. I understand the distinction.
6 Were you ever involved in any audits or
7 investigations or discussions following Claire Roberts'
8 death?

9 A. Claire's? No.

10 Q. And you're sure about that, it's not just that you can't
11 recall?

12 A. No, I'm quite sure. I would remember if I'd been
13 involved in any.

14 Q. You're now a consultant paediatrician.

15 A. Mm-hm.

16 Q. Looking at October 1996 standards, would you have
17 expected to have been involved in any audit or
18 investigation following Claire's death?

19 A. I'm not sure it would have been standard at the time to
20 investigate every death in the Children's Hospital,
21 particularly if it was felt that there was a reasonable
22 explanation for the death.

23 Q. Well, would you have expected her death to have been
24 discussed at a morbidity and mortality meeting, for
25 example?

1 A. Yes. I mean -- well, it's hard to remember what exactly
2 happened in 1996. Certainly from about 2000 onwards, my
3 last period in Children's Hospital, there were regular
4 morbidity and mortality meetings. I can't quite
5 remember if they were quite so regular in 1996, but they
6 were from 2000 onwards, certainly.

7 MR REID: Mr Chairman, perhaps we can take a short break and
8 I can see if there are any questions from the floor.
9 Otherwise, I have nothing further.

10 THE CHAIRMAN: We might take about 15 minutes. I think
11 there are some issues about tomorrow's witnesses, which
12 we have to resolve. We'll try and do that in one go.
13 I'll come back at 3.25.

14 (3.10 pm)

15 (A short break)

16 (3.45 pm)

17 THE CHAIRMAN: Some more points?

18 MR REID: Just a small number of points.

19 First of all, if I could bring up Dr Hughes' witness
20 statement at WS140/1, page 13, please. At (d)(i), I've
21 been asked to check with you your answer to that
22 question. You were asked whether Dr Sands was a senior
23 registrar grade, and your answer was that:

24 "Dr Sands was a paediatric registrar and, so far as
25 [you] can recall, it was one of his first registrar

1 posts and he would not have taken on consultant-level
2 responsibilities and would have consulted more senior
3 members of staff if he had concerns."

4 Just to confirm with you, is that correct?

5 A. Yes, that's correct.

6 Q. Thank you. The second point is --

7 THE CHAIRMAN: Sorry, at that time was there a senior
8 registrar grade as opposed to a registrar?

9 A. There were still some of the older registrars who would
10 have not been on the new contract. The Calman project
11 had just started, so Dr Sands would have been one of the
12 first few registrars on the Calman project. But some of
13 the older registrars would still be known as "senior
14 registrar".

15 THE CHAIRMAN: Thank you.

16 MR REID: If I just ask you about U&E results. You took
17 bloods at half nine for the phenytoin and took U&E
18 results [sic] at the same time.

19 A. Yes.

20 Q. I presume that was because you were taking blood, it was
21 routine to take the U&E at that time as well; would that
22 be correct?

23 A. It may have been handed over in the handover at
24 5 o'clock. I don't have any direct recollection. In
25 a child who's on IV fluids, they should definitely have

1 at least one, if not more than one, U&E in a day. And
2 Claire obviously hadn't had any from the night before,
3 so she was definitely due a U&E.

4 Q. That was the question I was going to ask you. How often
5 you would expect -- you say you would expect twice
6 a days; is that what you're saying?

7 A. I think if you have any discrepancy, if they're outside
8 of the normal range, you would expect more than once
9 a day.

10 Q. The discrepancy you're talking about is the 132 level
11 from the previous evening?

12 A. It was a slightly low sodium, yes.

13 Q. And do you think that on coming on at 5 o'clock through
14 either the handover or through your contact with Claire
15 over that time, you would have been aware that her U&Es
16 hadn't been taken since the previous evening?

17 A. I can't answer that because I have no recollection of
18 the day, so I can't answer --

19 Q. Would it have been your normal practice to check in the
20 notes to see when the last U&E had been done?

21 A. No, it would be normal practice to be told that certain
22 U&E levels needed to be checked. In the handover that
23 occurs now, you would know of all the patients that are
24 on IV fluids and in that case you might, but in 1996
25 I don't think you would be aware of every patient that

1 was on IV fluids, so you would need to be told
2 specifically that a U&E needed to be checked.

3 THE CHAIRMAN: If there was confusion about the reading of
4 132, the height of the confusion was whether it was the
5 result from Monday night or the result from Tuesday
6 morning.

7 A. Yes.

8 THE CHAIRMAN: At 5 o'clock, it would have been realised, at
9 worst, that there had been no test since Tuesday
10 morning --

11 A. Yes.

12 THE CHAIRMAN: -- at either 9 o'clock, when the ward round
13 might have normally have been expected to start, or at
14 11 o'clock, when the ward round appears roughly to have
15 been done.

16 A. Yes.

17 THE CHAIRMAN: At 5 o'clock that would have been time for
18 a repeat U&E, wouldn't it, in light of the fact that the
19 reading which was available at that time was a bit lower
20 than normal, but also taking into account the lack of
21 progress in Claire's condition during the day?

22 A. Yes, and I think given that she's due to have a blood
23 test taken at 9 o'clock for phenytoin level, it has to
24 be done at 9. It would be reasonable in children to
25 bunch up tests.

1 THE CHAIRMAN: Okay.

2 MR REID: And that's just so they're not --

3 A. [OVERSPEAKING].

4 Q. If I can bring you just to the original prescription
5 chart at 090-026-075, please, and 076 alongside it.
6 Your evidence earlier was that the regular prescriptions
7 on the left-hand side were parenteral drugs, so they're
8 the IV drugs, and the ones on the right-hand side would
9 be those oral drugs, drugs of that nature.

10 A. Yes.

11 Q. I've been asked to ask you: the diazepam was done
12 rectally rather than by IV.

13 A. It's in a separate part, though, it's in the "drugs once
14 only prescription" part, it's not in the parenteral
15 drugs part. It's "parenteral drugs regular
16 prescriptions" on the top on the left, and "drugs once
17 only", which can be either way -- IV, PR or oral -- and
18 then the other page, which has the greater number of
19 spaces, would be for your regular oral or NG or rectal
20 prescriptions.

21 Q. So the top half of 75 is "IV drugs --

22 A. Yes.

23 Q. -- regular prescriptions" and the bottom half is "drugs
24 once only prescriptions" of any nature?

25 A. Yes.

1 Q. And the right-hand side is regular prescriptions of
2 a non-IV nature?

3 A. Yes.

4 Q. If I can just ask you about the acyclovir on the
5 left-hand side at D. We can see there it's to be
6 administered at 8.30 am, 12.30 pm and 9.30 pm. And you
7 administered it as per Dr Stevenson's prescription at
8 9.30 pm.

9 A. Yes.

10 Q. Dr Webb directed that acyclovir be prescribed at his
11 note at 090-022-055, if that can be brought up. You can
12 see there, plan number 1:

13 "Cover with cefotaxime and acyclovir, 48 hours.

14 I don't think meningoencephalitis very likely."

15 Is there anything that you can glean from the fact
16 that the acyclovir wasn't to be administered from
17 Dr Stevenson's note of the prescription until half nine?

18 A. I can't explain Dr Stevenson's thinking, although
19 acyclovir wasn't always necessarily available on the
20 ward. But I don't -- I can't explain why he has
21 prescribed it for those times. Often you would
22 prescribe drugs for particular times to make it easier
23 for administration, but I don't know why he chose those
24 times.

25 Q. Would there be any level of urgency in ensuring the

1 administration of the acyclovir in those circumstances?

2 A. Again, it depends on whether or not it was available on
3 the ward at the time. I can't explain his actions.

4 Q. It's Dr Stevenson's actions, I accept that.

5 And just if we bring back the rewritten prescription
6 sheet, 090-026-073. Just out of interest, how often
7 would senior house officers have to rewrite drugs
8 kardexes; is that a common occurrence?

9 A. Very common. That would one of the things you would do
10 regularly, that would be one of your duties.

11 Q. It would be a very regular occurrence?

12 A. Yes.

13 Q. Just as a final point is Staff Nurse Pollock's evidence,
14 which I tried to bring you to earlier. 30 October,
15 page 167, please. I asked her at line 6:

16 "Question: When you say you would double-check --

17 "Answer: There would be two people checking it.

18 "Question: What things would you be checking?

19 "Answer: You would be second-checking in those
20 days. As is the case now, IV medications would always
21 be second-checked by either two registrants or a doctor
22 and a nurse, and that's always been the case. But in
23 the case of an IV drug, it has to be second-checked by
24 someone."

25 I think you said earlier that doctors would just

1 sign off the IV drugs themselves. Can you explain in
2 any way the inconsistency there seems to be there
3 between what you're saying about the doctors signing
4 once and the fact that she says that IV drugs need to be
5 double-checked?

6 A. My recollection is that doctors signed for IV
7 medications and it wasn't double-checked with a nurse.
8 If you were signing on a fluid prescription sheet, you
9 might double-sign it, but on the drug kardex, my
10 recollection is that doctors signed for giving the IV
11 drugs.

12 Q. Has that changed in any way since 1996?

13 A. It may have, I'm not certain, to be honest. I know that
14 certainly, in 1996, my recollection is that you would
15 sign it just yourself.

16 Q. You're currently a consultant paediatrician with an
17 interest in inherited metabolic disorders.

18 A. Yes.

19 Q. Do you have to prescribe intravenous drugs on a regular
20 basis?

21 A. Yes.

22 Q. In your job currently, is it a common occurrence in your
23 hospital that they are double-signed or do doctors sign
24 by themselves?

25 A. No, it is not a common occurrence that they are

1 double-signed; they are usually only single-signed.
2 It is common that you would double-check with someone if
3 you're making complicated calculations, and I think
4 that's good practice at any point, but it doesn't
5 necessarily need to be double-signed when you administer
6 the drug.

7 Q. And would that particularly be with drugs you would be
8 unfamiliar with?

9 A. That's with any IV drugs.

10 Q. Or drugs that would be potent or drugs?

11 A. Again, it's with any IV drugs. It's good practice to
12 check your calculations at all times, but it's not
13 practice in our hospital to have them double-signed on
14 the prescription sheet.

15 MR REID: Mr Chairman, unless my friends have anything
16 further. I have no further questions.

17 THE CHAIRMAN: Okay. Doctor, thank you very much for coming
18 up again for us. Your evidence is now complete.

19 (The witness withdrew)

20 TIMETABLING DISCUSSION

21 THE CHAIRMAN: Tomorrow's evidence: Dr Stewart is giving
22 evidence by video link from, I think, Texas.

23 MR McALINDEN: Savannah, Georgia.

24 THE CHAIRMAN: I think the connection with him is due to be
25 made from any point after 12.30. We have a two-hour

1 time period to run that in. So that's the easy part of
2 tomorrow. Perhaps even 12 noon.

3 In relation to Dr Herron and Dr Mirakhur, you'll
4 remember the point that Dr Herron gave evidence on the
5 inquest on the basis that he wrote the autopsy report,
6 but then subsequently advised the inquiry that it was
7 actually primarily the work of Dr Mirakhur.

8 We have a number of statements from doctors Herron
9 and Mirakhur, who we want to do in clinical and
10 governance terms. The idea was to do them tomorrow. We
11 received Dr Herron's governance statement in July and
12 then, on 23 October, we received some further documents
13 from him, which are attached to his third witness
14 statement at pages 74 to 77. There's a chart which may
15 look familiar to you, and then there are some slides or
16 copies of slides.

17 We've asked Dr Squier for a further note on this
18 issue and on governance, and I understand it's going to
19 be available this afternoon, which is good in the sense
20 that we're going to have it, but it gives Dr Herron and
21 Dr Mirakhur limited time to look at it. I'm wondering
22 how best we can get through the next couple of days.

23 MR REID: Mr Chairman, just to correct one point, I think
24 you said that Dr Herron's governance statement was
25 received in July; it was received in September.

1 THE CHAIRMAN: Sorry, September. And the additional piece
2 of information at the clinical end came through on
3 23 October. I presume Dr Herron and Dr Mirakhur will
4 want to see this latest statement from Dr Squier before
5 they give their evidence.

6 MR McALINDEN: I'd say they'd be very anxious to see that
7 information.

8 THE CHAIRMAN: If we can get that out this afternoon,
9 Mr McAlinden, and start their evidence -- this would run
10 it late -- but start their evidence after Dr Stewart
11 tomorrow, you could have tomorrow morning. They could
12 see it tonight and you could have tomorrow morning with
13 them.

14 MR McALINDEN: Yes.

15 THE CHAIRMAN: That's going to knock on a bit on the
16 timetable. It was probably a bit optimistic that
17 we would get through both doctors Herron and Mirakhur
18 tomorrow in any event. If Dr Stewart can be available
19 from noon, shall we take him at noon and then start
20 after he's finished with whichever of Dr Herron and
21 Dr Mirakhur might be discussed between you and
22 Ms Anyadike-Danes?

23 MR McALINDEN: Yes. Just one issue in relation to
24 Dr Stewart's timing. I take it that is our time as
25 opposed to his time.

1 THE CHAIRMAN: It's our time. Noon our time, which is 7 am
2 for him. He's willing to do it, so let's not cut across
3 him.

4 Look, let's do it on this basis, ladies and
5 gentlemen: we'll start later than planned tomorrow.
6 We'll start with Dr Stewart. If you could be ready from
7 midday for Dr Stewart. We will try to get Dr Squier's
8 report out this evening to you. That will give DLS and
9 the other parties, for that matter, an opportunity to
10 see what she is saying in her latest statement.

11 I think we've copied to the parties some
12 correspondence and DLS have been raising a concern
13 since September about Dr Squier. There is a further DLS
14 letter, which I think was sent in to us perhaps last
15 Monday or Tuesday about some other criticism in the same
16 line of cases, shaken baby cases. That will be
17 circulated as well so that you can see what the position
18 is, what the DLS position is about that; okay?

19 Mr Sephton?

20 MR SEPHTON: Sir, I wonder if we could address other
21 timetabling matters. One sees that at the moment
22 we have Dr Scott-Jupp and Dr MacFaul for 12th and 13th.
23 I came in this morning and saw a voluminous report from
24 Dr Young. We have further evidence possibly from
25 Professor Neville. We have the two mystery witnesses,

1 Mr Shields and Miss Chambers. I am raising with the
2 inquiry whether the clinical part of it will finish on
3 the 13th.

4 THE CHAIRMAN: I think, Mr Sephton, in light of what we've
5 just been discussing about Dr Squier's report, I think
6 we can now take it that it won't finish on the 13th.
7 What we'll do over the next 48 hours is to work out how
8 and when we will finish it. Professor Cartwright and
9 the other three witnesses are on Wednesday and Thursday.
10 They are all coming over from England and I'm
11 exceptionally reluctant to cancel them. Ramsay and
12 Aronson are not affected to any significant degree at
13 all -- I think Ramsay not at all -- about any of the
14 pathologists issues. So we should be able to go ahead
15 with Cartwright, Ramsay and Aronson as scheduled. The
16 question is how we then manage Mirakhur, Herron and
17 Squier.

18 MR SEPHTON: Might I just suggest, while I'm on my feet,
19 that the examination of Scott-Jupp and MacFaul might
20 take longer than a day at the rate we've been going.

21 THE CHAIRMAN: Thank you very much. Yes, we're going to
22 lose a day or so on this and we'll have to work out how
23 best we can accommodate that.

24 The other two witnesses who you refer to from the
25 Trust, I anticipate, even though we don't have witness

1 statements from them, that they're likely to be short.
2 Either they have an explanation for where Dr Steen was
3 or they don't. I didn't understand the information we
4 got as giving a definitive explanation about where she
5 was. I think it flagged up another possibility rather
6 than anything definite. Is that fair?

7 MR McALINDEN: Basically, to give some explanation in case
8 some explanation is sought at this stage, it's clearly
9 a case that Dr Shields has a diary, and in that diary
10 there is a reference to a meeting taking place on
11 Musgrave Ward with Dr Steen on the morning of
12 21 October. It's in relation to the King's Fund audit,
13 and it may well be that on 22 October part of that audit
14 process, a mock audit, would have been taking place in
15 the Children's Hospital involving Dr Steen. That is the
16 issue that's being explored at present.

17 THE CHAIRMAN: Okay. Since we have that diary note, is
18 there much more exploration to do on that, do you know?

19 MR McALINDEN: Unless the diary note can be backed up with
20 personal recollection of those witnesses, I think
21 there's very little else that can be done.

22 THE CHAIRMAN: In that event, can we get the witness
23 statements in and let's get this little bit -- this is
24 actually quite a tight bit of evidence. Can we get it
25 in as soon as possible? It might not even be necessary

1 for the witnesses to give evidence if all they can say
2 is: this is a diary note, we did it, she was there at a
3 meeting on the Monday, and then we did part of the mock
4 audit on Tuesday.

5 MR McALINDEN: It's hoped that statements should be
6 available within the very near future.

7 THE CHAIRMAN: Thank you very much indeed. Ladies and
8 gentlemen, tomorrow at midday for Dr Stewart from
9 Savannah, Georgia. Thank you.

10 (4.05 pm)

11 (The hearing adjourned until 12.00 pm the following day)

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