Wednesday, 14 November 2012

(10.00 am)

(Delay in proceedings)

(10.10 am)

DR RODERICK MACFAUL (continued)

Questions from MS ANYADIKE-DANES (continued)

THE CHAIRMAN: Doctor, could you come back up, please? Thank you.

MS ANYADIKE-DANES: Good morning.

A. Good morning.

Q. Dr MacFaul, I just want to clarify a couple of points with you.

When you were giving your evidence in answer to the chairman and I yesterday, and I was taking you through your clinical experience and you were explaining how, although for many years you were engaged in management of paediatric patients with neurological problems because the tertiary centre that was subsequently established in Leeds hadn't at that time yet been established, so you saw a lot of those patients. I think you said that probably went on maybe up to 1996 or some time thereabouts.

A. Yes.

Q. What I just wanted to be clear about is: you're not claiming, are you, that any time after that, that you

had expertise and retained an expertise in the management of acute encephalopathy?

A. In respect of intensive care management -- that is the management within an intensive care unit -- I would not lay any claim to particular expertise from the late 1990s and into the early 2000s and beyond, because that was outside my experience in clinical terms. Nor would I lay claim to knowledge in detail of the research strands conducted in the late 1990s and in the 2000s in respect of intensive care management of acute encephalopathy, which might have led to changing guidelines after the 2003/2004 period. That is a point which I would like to clarify. Thank you.

Q. Thank you very much for that.

A. There is a second point, if I may. Yesterday, a number of papers were referred to, which Professor Young had produced. These refer to a different condition from which Claire presented. These refer to the child who comes into hospital without a brain disease, who subsequently develops an acute brain disease because of intravenous fluid management given by routine methods of hypotonic fluid. That is the production of an acute encephalopathy by hypotonic fluid administration in a child who entered hospital with some other condition where the brain was not affected. Because those papers

relate to a different entity and scenario from that which applied to Claire.

Q. And so the presumptive treatment that you were advocating and which you said was known about and appreciated in 1996 doesn't apply to those patients. As I understood your evidence yesterday, the reason you are treating presumptively is because they come in with a problem that you can anticipate, if it's caused by certain factors, it's actually going to be exacerbated by a particular kind of fluid management regime, and that's why you're able to address that presumptively.

A. Yes. Whereas the other entity, the knowledge of that was referred to in the first Arieff paper, but the knowledge strands about causing an acute encephalopathy in an otherwise non-brain presenting child, for example post-operatively, was new in the early 2000s and in terms of becoming wider knowledge, although Arieff had referred to it earlier. And I wish to distinguish that particular scenario from what was being considered in the management of Claire.

Q. Thank you very much indeed. I think that's a very helpful distinction.

I'd like, just while we're distinguishing those sorts of factors, to pull up a letter which is in response to a letter that Mr and Mrs Roberts wrote,

seeking further information. It was a letter written in 2004. It was responded to by Nichola Rooney.

Mr Chairman, just so that we can see where the thinking about how you treat these conditions goes, the Roberts' letter is 096-015-105, going on to page 106. I think it's paragraphs 8 and 9. If you see the latter part of 8:

"Given that Claire's sodium levels drop so suddenly within a 27-hour period, ie acute hyponatraemia, why was this condition not defined?"

So he's seeking an explanation of why he didn't know. And then he goes on to refer to the full post-mortem report and whether it makes any reference to hyponatraemia or sodium levels.

Then at 9 he says:

"Professor Young explained that the fluid type administered to Claire would not be given to a patient at the Royal Hospital today who has sodium levels lower than 135 and that such patients would have their sodium levels reviewed every 1 to 2 hours."

And then he asks for what the guidelines are.

Then if one sees the response to that at 096-018-112 and 113. If we pull up the next page, 113, thank you.

You can see the answer to the query at 9:

"Professor Young did indeed state that monitoring of

sodium levels would not be more frequent (ie around six hourly). However, the management of patients with sodium levels less than 135 is dependent on the clinical condition which has led to the low sodium. In Claire's case, it was felt to be due to the syndrome of inappropriate antidiuretic hormone section [I think this should be 'secretion'] SIADH. The practice at that time would have been, firstly, to restrict fluid intake and, secondly, to consider administration of fluid with a higher content of sodium if symptoms attributable to hyponatraemia were present."

That's what is being reported as Professor Young's view of what was current practice in the Royal Hospital in 1996. In terms of the recommendation for how you treat SIADH, that you restrict the fluid intake and consider increasing the sodium content of the fluid, does that accord with your view as to what the practice was in 1996? I don't mean the practice in the Royal, but the practice generally.

A. Yes.

THE CHAIRMAN: I take it, Mr McAlinden, that's still the Royal's position?

MR McALINDEN: I understand it is, yes.

THE CHAIRMAN: So the Royal's position is that, in 1996, when Claire was felt to be suffering from SIADH and when

she had a sodium level of less than 135, which she did from Monday night, the practice would have been to restrict fluid intake and to consider administering fluid of a higher content of sodium. But that wasn't done; isn't that right?

MR McALINDEN: No, it wasn't done.

MS ANYADIKE-DANES: Mr Chairman, if that's the position it may be that I can move on.

THE CHAIRMAN: I think so. I'm not entirely sure where all the literature is going if it is in fact the Royal's explicit position, and has been from least 2004, that Claire's fluid intake should have been restricted and that, at least, consideration should have been given to giving a fluid of a higher sodium content. I'm not sure where all the debate about whether Dr MacFaul made a mistake or not, or the extent of his mistake, takes us. I can understand it from the perspective of a neurologist. I can understand there might be an issue that Dr Webb wants to raise about what exactly he should have done, but I'm not sure how comfortably that sits with the Royal's position or the extent to which the issue about all the research papers affects what is stated in paragraph 9.

MR McALINDEN: I think the situation is, Mr Chairman, that Dr MacFaul's evidence seems to suggest that if a patient

without a diagnosis of inappropriate secretion of antidiuretic hormone -- if a patient is admitted with signs or symptoms of encephalopathy and there is any variation from the norm in relation to the sodium level, that, as a presumptive measure, fluid restriction should be initiated and higher sodium fluids should be administered.

The position at the time, and I understand the present position is, that once a diagnosis, a firm diagnosis, of hyponatraemia due to SIADH has been made, that the course of action which would have been adopted and which still would be adopted now is to reduce fluids and to consider the administration of a higher sodium fluid. The difference is whether it should have been treatment by way of anticipation of her problem or whether it should be treatment once the problem is properly and appropriately diagnosed.

THE CHAIRMAN: But then focusing on Claire, at what point does the Royal accept that the fluid intake should have been restricted?

MR McALINDEN: Well, it really comes back to when the blood test should have been taken and when a diagnosis of hyponatraemia should have been made. And if it is the case that a blood test should have been taken after the ward round and if that blood test would have revealed

a significant drop in sodium, then it could be argued that at that stage other steps, other investigations, such as a CT scan, et cetera, should have been initiated and the proper diagnosis would have been made at that stage and the proper treatment implemented.

THE CHAIRMAN: But there's no dispute that the blood test should have been taken, a second blood test, before 9.30 on Tuesday night, sure there isn't.

MR McALINDEN: I don't think anyone is arguing that.

THE CHAIRMAN: We'll never know for sure, but it seems that there's at least a likelihood, if not a probability, that that would have revealed a falling sodium count.

MR McALINDEN: There's certainly that distinct possibility that it would have revealed a falling sodium count.

THE CHAIRMAN: So the only real issue which emerges from all these papers is whether, apart from SIADH, Dr MacFaul is right in saying that there should have been an anticipatory or presumptive diagnosis of encephalopathy and, as a result of which, the fluid intake would have been restricted and a change of fluid would have been considered.

MR McALINDEN: Yes.

THE CHAIRMAN: Okay.

MR QUINN: Sir, can I just make the point here that the parents are concerned also about the view that was taken

by Professor Young? If I can just ask for the report to be brought up, WS78/2 at page 2 --

THE CHAIRMAN: Just give me one second.

MR QUINN: -- and put that beside. Because what Mr and Mrs Roberts are concerned about is that when one looks at the first four lines of the challenge made by Professor Young in that particular analysis, that is the challenge he's made to this witness's evidence, one then cannot see how that fits with what is supposed to be Professor Young's position in paragraph 9, which is on page 9 of the letter sitting on the left. So perhaps the witness could deal with that and perhaps that could be dealt with by Mr McAlinden.

THE CHAIRMAN: Sorry, unless I've misunderstood it, I think what Mr McAlinden is saying is that the Royal's stance over paragraph 9 on the left of the screen, to the extent that that's what should happen when SIADH is identified -- what Professor Young is saying is if encephalopathy is ... Even if there's a presumptive diagnosis or identification of encephalopathy, at that point, you move into restricting fluid and considering a change to the type of fluid.

MR QUINN: Yes.

THE CHAIRMAN: But SIADH and encephalopathy are two different things. Or are they?

A. It is possible to have syndrome of SIADH without an encephalopathy. Indeed, it is not uncommon. And that is why I believe we see low sodiums in children, say, with pneumonia. But it is a well-recognised and common complication in acute encephalopathy of any cause.

MR QUINN: Sir, the consequences are the same. You've got cerebral oedema occurring --

THE CHAIRMAN: Yes.

MR QUINN: -- through either.

THE CHAIRMAN: Which is why you restrict fluid and consider changing the type of fluid.

MR QUINN: So from a layperson's point of view, the parents' point of view, they really want to know how paragraph 9 sits with the first paragraph of Professor Young's response. That's the point they're making and if any comment can be made on that to clarify the issue to the parents, it would be most welcome at this stage.

THE CHAIRMAN: Let me ask you first, Dr MacFaul: do you understand the point that Mr Quinn is making on behalf of the family?

A. Partly so. I think that my understanding is that Professor Young gave the information to parents that treatment had changed between 2004 -- in 2004 and treatment in 1996. He appears to refer to the change in

1 routine practice from fifth-normal saline in the Belfast
2 Hospital in 2004 for all conditions, not specifically
3 acute encephalopathy. But what I understand from the
4 statement here is that, in 1996, it was already the
5 management of acute encephalopathy and, in 2004, that
6 was the management of acute encephalopathy. So there
7 was no change in my interpretation between 1996 and
8 2004.
9 MR QUINN: Thank you for the clarification. That is the
10 point the parents wanted to make on this issue.
11 Therefore, the parents -- and I want to put this on the
12 record -- feel that Professor Young's criticism, given
13 what he says in paragraph 9 of the response letter, is
14 redundant.
15 THE CHAIRMAN: Thank you.
16 MS ANYADIKE-DANES: Mr Chairman, just to perhaps refer back
17 to the fact that if, as I think Mr McAlinden was
18 suggesting, that it would have been relevant to have
19 considered and therefore that would have affected their
20 treatment if Claire came in and her presentation
21 suggested SIADH, that is something which the inquiry's
22 paediatric expert Dr Scott-Jupp did consider. In fact,
23 it's in his report. We don't need to pull it up because
24 I put it to him in evidence. 234-002-003. He did
25 explicitly consider that if you had a serum sodium level

of below 135 in the circumstances, that could be as a result of inappropriate ADH secretion. And if that is something that he, as a paediatrician, was thinking should have been in people's minds, then the alternative strand of treatment that Mr McAlinden was seeking to distinguish may not be viable in those circumstances. But I don't want to press it further because I think that Dr MacFaul has already given his answer as to what he thought was the appropriate course of treatment and approach.

THE CHAIRMAN: Let's move on.

MS ANYADIKE-DANES: Thank you.

That being the case, Mr Chairman, I wasn't going to deal unduly with the literature, but I did, in fairness to Dr MacFaul, whose views as to what the position was in 1996 have been challenged, want him to at least have the opportunity to look at the then current editions of Nelson and Forfar & Arneil. And if, in relation to hyponatraemia and encephalopathy, one could go to Nelson's 15th edition, which is the 1996 one. It's page 215 for those who only have the volume, but we have extracted some of the pages and the reference is 311-018-007.

This is a section dealing with electrolyte disturbances associated with central nervous system

disorders. There's obviously a general introduction to it, but perhaps, Dr MacFaul, the part you can comment on in particular, if you see the latter part which has "treatment", and you see that:

"The treatment of acute symptomatic hyponatraemia ..."

Which is something that, I think, can result from the condition of an electrolyte disturbance associated with a central nervous system disorder:

"... should be prompt and use hypertonic saline in combination ... to enhance free water excretion."

Can you comment upon why it is that you're trying to do that in those circumstances?

A. You're trying to restore the blood sodium from its deviated position back to normal range, which is homoeostasis. And there is some debate about the use of hypertonic saline because, in many other conditions where syndrome of inappropriate ADH may be present and yet there is no encephalopathy, such a step might not be safe. But the problem with acute encephalopathy is that the time window in which to restore homoeostasis is very limited because of the danger of cerebral oedema and because of the danger, if it's already established, of it becoming worse.

So the opportunity to attempt to correct by fluid

restriction alone over two days is not available because of that very tight time window. There is debate about the use of hypertonic saline, but at least it is addressed here as a measure of treating. One way towards that extreme is to just correct with normal saline and observe. But the emphasis here is where there are severe symptoms -- in other words coma or seizure -- and in those circumstances, in the presence of hyponatraemia, there is guidance which supports the use of hypertonic saline because of the emergency.

Q. What you've recognised is you've got too low a concentration of sodium in the system, that is going to have its effect on the development of cerebral oedema, and that has to be addressed, so the underlying principle is the same.

A. Yes, it is. And in the early stages, of course, when the deviation of the sodium is not so extreme, the way to deal with that is twofold, and as we mentioned yesterday, it is to stop a fluid which donates a lot of free water, because if you have a lot of free water on-board, why give more? And, secondly, to restrict fluid as well as consider hypotonic saline.

Q. If we carry on in Nelson and we go to page --

THE CHAIRMAN: Sorry, just before you move on. The paragraph which you were being taken to, the third

paragraph of 56.6, doctor, depends on a diagnosis of acute symptomatic hyponatraemia.

A. It depends on a diagnosis, sir, of an acute neurological problem, and therefore this applies in any acute encephalopathy. And the first sentence there states that:

"Diseases of the central nervous system are frequently associated with disturbances of sodium concentration."

And the point I would make about that is that, yesterday, we heard that Dr Kirkham's review said that the syndrome of inappropriate ADH secretion is rare in coma.

If that is the case -- and it is for Dr Kirkham to explain why -- how do we explain the common finding of hyponatraemia? Because all acknowledge that hyponatraemia is common. And if the contribution by syndrome of inappropriate ADH is not common, then the only other explanation is fluid overload with water. And that can only come in this situation from intravenous fluid with too low a sodium content.

THE CHAIRMAN: Your referral back to the opening two lines in 56.6, does that in turn take us back to not so much the Monday night of Claire's treatment, but the Tuesday morning? She'd been given some treatment through Monday

night, but on Tuesday morning her period of reduced level of consciousness was extended, she didn't appear to be improving. In fact, if anything she was worse, which was why her parents spoke to the nurse who then spoke, indirectly, to Dr Sands to get him to come rather more quickly on the ward round. Would that be the point at which it would have been emerging quite clearly that there was some problem or potential disease of Claire's central nervous system?

A. Yes. She had by that time, by definition, an acute encephalopathy of unknown cause. But I come back to the point, if I may, that the sodium on admission was low, slightly out of range, and that was a signal of something because by that time she had not been given intravenous fluid; it was a signal that she was -- even though it was only slightly -- out of the range, a candidate for inappropriate ADH secretion.

MS ANYADIKE-DANES: And that is something that Dr Scott-Jupp appreciated also from his position as a paediatrician. In terms of your presumptive action, does one see some indication of that later on in Nelson? It's page 715 in the text, but our reference is 311-018-012. On the right-hand side column, it's about halfway down, starting "it is crucial".

THE CHAIRMAN: It's the third paragraph under that heading.

MS ANYADIKE-DANES: "It is crucial to anticipate and be prepared for convulsions, cerebral oedema, hyperpyrexia, inadequate respiratory exchange, disturbed fluid and electrolyte balance, aspiration ... [so you have to do all of that]. Therefore, all patients with severe encephalitis should be monitored carefully."

It talks about how you have to give your fluids and electrolytes and medications. Then ultimately, it concludes that the therapy is aimed at reducing cerebral oedema:

"In patients with evidence of increased intracranial pressure, placement of a pressure transducer [that's one thing that they can do and I think Professor Neville talked about that] ... as a guide to therapy aimed at reducing cerebral oedema."

So if you have a patient -- this is the viral meningoencephalitis, which is one of the things that, at some point, they thought might be behind her raised white cell count, that might be being the trigger, that there is some viral activity going on, if you think that is what is likely to be producing the cerebral oedema, then is this part of your explanation that you treat that presumptively, that's going to carry on developing, and you try and manage very carefully the fluid balance?

A. Yes, that is correct, because viral encephalitis and

meningoencephalitis are inflammatory conditions, and rather like bacterial meningitis, which is also an inflammatory condition, cerebral oedema is common and so is hyponatraemia and it has been well documented that that is the case.

Q. Although I think the point is accepted by the Trust, so I won't go into it. But the reference in Nelson for how you deal with SIADH, which mirrors what Professor Young is reported as having been his view as to what was happening in 1996 -- we don't need to pull it up, but the reference is 311-018-013. Page 1576 in the text:

"Careful attention to fluid replacement in patients with conditions associated with the syndrome may prevent the development of symptoms. Immediate treatment of hyponatraemia consists simply of restriction of fluids. Sodium should be made available to replace the sodium loss."

And in Forfar & Arneil, the fourth edition, which is the one for that period in 1996:

"Treatment is by water restriction to between one-third and one-half maintenance and sodium replacement to compensate for the secondary sodium levels."

And we have that extract at 311-019-019, but I think the Trust has accepted that that is what they agree

should have been happening in 1996.

If I can take you back to the management of encephalopathy, which seems to be the point of divergence. Forfar & Arneil -- and we have the extract there at 311-019-010. If one maybe brings up the page immediately preceding that, 009. This is the investigation of coma. Then that second line there, you see the management.

THE CHAIRMAN: Which edition is this?

MS ANYADIKE-DANES: This is the fourth edition, Mr Chairman.

So you see the management of it and the style is to give these little tables. Then one can see all the things that have been talked about that could and should have been done.

But if one then goes under "management", it says on 115:

"Management of encephalopathy. The philosophy of management of 'treating the treatable'."

And then it goes on to the maintenance of homoeostasis. There you see it at item 4. Is that what you were trying to explain yesterday? Was the position that you treat what you can and these are the ranges of things in those circumstances that you can treat? One of the things you should be seeking to achieve is the maintenance of homoeostasis and, I think, that you were

saying that in order to maintain homoeostasis, you would have to be managing the fluid balance.

A. Yes.

Q. So this is the edition that would have been available in 1996 --

THE CHAIRMAN: 1994, isn't it?

MS ANYADIKE-DANES: Strangely enough, it is that, but it's the one that was available in 1996. So although it hasn't put it in the clearer terms that you referred to in the third edition, nonetheless I think your evidence is, if you look at that and read that with a clinical eye, you understand what it is that they're telling you to manage.

A. That is correct, yes.

Q. What does, just for the sake of completion now, the "maintenance of homoeostasis" means?

A. It means ensuring that the blood pressure is maintained adequately, there is no dehydration and that fluid replacement or fluid maintenance is continued in a way which does not donate excessive free water and if inappropriate ADH secretion or another cause of deranged blood sodium is found, then that should be managed actively. But it also includes such elements as maintaining body temperature.

Q. Thank you. And then I'm going to move on from the

literature.

Can I ask you about EEG? I know that you're going to comment on the EEG and its availability and matters of that sort for the purposes of governance --

A. Yes.

Q. -- but I wonder if you can help us here just to see the extent to which you are in agreement with Professor Neville, who's the inquiry's expert on paediatric neurology. Professor Neville has said in his report -- and we don't need to pull it up, 232-002, and he makes these comments at pages 002, 006 and 007.

What he's essentially saying is that an EEG was actually the only means by which you could make a diagnosis of non-convulsive status epilepticus, that it could be definitively confirmed or denied. That is one thing he said; would you accept that?

A. Yes.

Q. His view was that Claire should not have been treated on the basis of such a diagnosis without an EEG having confirmed it, as it would lead to inappropriate treatment with anti-epilepsy drugs, which could have further reduced her consciousness level and her respiratory drive without actually addressing or improving her problem.

A. I agree with that.

Q. Sorry, "without addressing or improving her problem", that was a comment by me. I don't think he actually said that in his report, but that was the sense of what he was saying.

A. I agree with that in principle. The only deviation, and it's only a slight one, is that it is commended in this edition of Forfar, the fourth, to be aware of seizure, and I think part of the general management is number -- I can't see the number there, it's the second line down in the principle --

Q. "Control of seizures."

A. Because seizures can occur as a consequence of any encephalopathy. Viral encephalitis can cause seizures, cerebral oedema can cause seizures. And to take account of that, the advice given is to use intravenous phenytoin in the management of an acute encephalopathy, whether or not a seizure has been observed on the basis of prevention.

Q. Then are you, at the same time, carrying out an EEG to see if you can confirm your presumptive diagnosis, if I can put it that way?

A. That is a more contentious point. You're giving it to try to anticipate the development, essentially, of tonic-clonic seizures, either generalised or focal. The issue in Claire was that, of the range of causes of her

reduced level of consciousness, one of them seems to have been chosen and others not fully excluded. But the one that was chosen is unusual as a cause of encephalopathy and is not very common and difficult to diagnose without an EEG. I may say, however, that in the course of an encephalopathy caused by something else, it is possible to develop non-convulsive status as a result of the encephalopathy itself. But it is not possible to make such a diagnosis without an EEG.

Q. So in your view, should an EEG have been performed?

A. Yes.

THE CHAIRMAN: Sorry, there's one other point. Let's suppose there's difficulty about an EEG. Let's suppose there's difficulty about bumping somebody out of the queue and it can't be done immediately. So it might only have been possible to arrange that EEG perhaps quite late on Tuesday afternoon rather than earlier.

A. All I would say is that it should have been done that day.

THE CHAIRMAN: Yes. Let's assume that Dr Webb or Dr Sands earlier, somehow between them they identify: we need to do an EEG, and there are some people who you can't bump out. So let's say it's not done until 3 or 4 o'clock on Tuesday afternoon. In the meantime do you criticise the prescription to Claire of anti-epileptic drugs?

A. I don't criticise the use of phenytoin or indeed valproate. But the midazolam is a treatment which is unusual in my experience, and this is why I gave so much attention to it in my report, because it struck me as an unusual therapy, out of my knowledge, in fact, for management. That is a drug which is more specific for what one would regard, from the reading about it, as resistant status epilepticus. That is, for example, tonic-clonic seizures which have not responded to full doses of phenytoin or valproate, or it is specific to the non-convulsive status. So the use of it before you have identified confidently that you are treating non-convulsive status is open to question. And the question would be: how confident are you in the diagnosis of non-convulsive status before using it?

It is difficult to establish non-convulsive status without an EEG. The importance of the question is that midazolam is a much more depressant drug in terms of its effect on respiration than phenytoin or valproate, for that matter. And the risk of depressing respiration in coma is a very significant one, and therefore I believe -- and I've looked at Claire's [inaudible word] -- that it would have been very quite important to obtain an EEG before exposing her to any dose of midazolam.

THE CHAIRMAN: Sorry, that's obviously on the assumption, which unfortunately doesn't apply here, that the midazolam was given in the correct dosage.

A. Even so.

THE CHAIRMAN: Even when given in the correct dosage, it's a drug which you would question the use of in advance of confirmation of non-convulsive status epilepticus?

A. Yes, because of the risk that it poses to respiration.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: I'm going to come and ask you about transfer to paediatric intensive care a little bit later on, but now that we're at midazolam: if it were to be used, what are your views as to whether it should have been used in a paediatric intensive care setting as opposed to the general ward?

A. Well, my response to that is simply this: that it is common for level 1 intensive care -- that is care short of ventilation -- to be --

THE CHAIRMAN: Sorry, doctor. But when you say it is common, we're talking about 1996. It was common in 1996 or can we just get our timescales correct?

A. Yes, it was common in 1996 -- and, to some extent, common now -- that level 1 intensive care -- that is care short of intubation and ventilation -- it is common for a number of children on children's wards to receive

that level of care. That was one of the triggers for setting up the Department of Health working party, which I referred to yesterday. It can be done on the general ward. Some units would have a special cubicle for high dependency care, called a high dependency cubicle. Some hospitals would cluster such beds, particularly Children's Hospitals, into a high dependency unit attached to the intensive care unit. So the actual physical arrangement of it varies from just giving it in a bed, but with extra nurses and monitoring, to the use of a special cubicle, which had more equipment, or to cluster such cases in a high dependency unit attached to the intensive care unit itself. The advantages of the latter are that you can not only step up care -- that is put somebody in there and hope they never get to the intensive care unit -- and when they are in an intensive care unit and are ready to come off ventilation, they can step down into that unit before going back to the general wards. So there are powerful arguments for having one. I do not know whether the Children's Hospital had such a high dependency unit attached to its intensive care unit.

MS ANYADIKE-DANES: Assuming that the position was that Claire simply stayed in the bed in which she was in the general ward and mannitol was being administered, and in

fact was going to carry on being administered intravenously until such time as somebody thought it appropriate to stop it -- as a matter of fact, it was started at, I think, 4.15 the afternoon of Tuesday and it carried on until her respiratory arrest and just before she was transferred to paediatric intensive care.

From how you have described what you do in terms of children who might be receiving mannitol on the ward, does that mean that people have to appreciate the potential difficulties that a child might get into being administered mannitol, and that there has to be maybe a higher ratio of nursing for those children?

A. The drug in question is midazolam --

Q. Sorry, I beg your pardon.

A. -- not mannitol.

Q. Sorry.

THE CHAIRMAN: That comes much later.

A. The midazolam intravenous infusion means that she was, by definition, receiving level 1 intensive care.

MS ANYADIKE-DANES: Yes.

A. She required careful monitoring by the nurses of her respiratory status and of her Glasgow Coma Scale and probably saturation monitoring. Saturation monitoring is of the oxygen level and the problem is that there may not be any change in the oxygen level while carbon

dioxide level in the blood is building slightly if breathing is suppressed. So it is a useful measure and it is continuous because it can just be put on to a finger or the ear, whereas carbon dioxide monitoring continuously has been an aspiration in many units and I have tried it myself, but you cannot do it through the skin. Well, you can, there are monitors, but they're not reliable, and they're used in the new born units where the skin is thinner. I did some work on that with a machine to see if we could use it and it didn't work in children.

So there was a need to monitor her very carefully and it could be argued that if there was any concern about her breathing, then blood gases should be done, which is an arterial stab. That is a painful and difficult thing to do to a child, but it has to be done sometimes. But that would be done if there was any concern about her breathing. Her respiratory rate, as it happens -- that's the breathing rate -- appears not to have deviated very much throughout the midazolam therapy. But it is possible that she was breathing at a normal rate, but shallow. That is purely conjecture. The point is that she was at risk of carbon dioxide retention.

Q. What I'm trying to get at is: if they were going to

prescribe and administer, which they did -- leaving aside the overdose, but just in an appropriate dose -- this drug which the junior doctors and nurses have all said they were completely unfamiliar with, if that was going to happen, should special arrangements have been made so that it could be done effectively and safely for Claire?

A. Yes. The problem is that she hadn't at that point, in my view, reached a clear indication for elective intubation, which would be the next step. And by "elective intubation", I mean anaesthetising her briefly, intubating her with an endotracheal tube and attaching her to a mechanical ventilator. That is elective ventilation as opposed to emergency resuscitation. I don't think at the time that she started the midazolam there is enough evidence to show that she needed that step. It was a step which should have been considered, but what I would say is that you could argue that with the use of that drug, particularly after a bolus, a debate could have been entered between Dr Webb and the intensive care unit. Not because she necessarily needed admission, but because it was a warning that there was a child who might need admission.

Q. Yes.

A. Because I understand that the criterion for admitting to paediatric intensive care at that time was intubation and ventilation.

Q. Yes. And if that intravenous midazolam is being administered at 4.30, which is shortly before the shifts were going to change and then you were facing a night shift with reduced personnel, if I can put it that way, then that might be a good time to have had a discussion with the paediatric intensive care and got established what assistance and guidance there might be if Claire got into difficulties.

A. In an ideal world, yes.

Q. But I think your view, originally answering the chairman, was that you don't think it was appropriate to start her on midazolam without having confirmed her position, which is what you'd do with an EEG.

A. Yes.

Q. Thank you.

THE CHAIRMAN: Of course, doctor, the other side effect of all of this would have been to alert Mr and Mrs Roberts to exactly how ill Claire was.

A. Yes. Because the use of midazolam suggested that they were treating an uncontrolled status.

MS ANYADIKE-DANES: Thank you.

MR QUINN: It just occurs to me that Professor Aronson

described midazolam as an experimental drug, and would the doctor agree with that particular definition of it at this time, that's in 1996?

MR FORTUNE: Sir, unlicensed drug. We must be careful about the terms being used.

MR QUINN: That's not my term; that's the term used in evidence, as I recall.

MS ANYADIKE-DANES: Just to put it in its context for you, Dr MacFaul, it was used with reference to treating a child like Claire in these circumstances. How he came about that view is that when you look through the texts and particularly the product information, the product information did not suggest at that time using midazolam in that way. The paper that Dr Webb had referred to -- it's in his third witness statement -- he said he went back and he checked the dosage from his encounter with it when he was in Canada and he referred to a paper that gave him some support as to how that might be a therapy that he could start, and from that particular paper Dr Aronson took the view that that indicated that it was perhaps still in its, I think, experimental stages in its application to children in Claire's circumstances. Can you comment on that?

A. I think the term "experimental" is, I would say, possibly a bit extreme. It is the case that a number of

drugs are used, as has been stated, off-licence and off-label in terms of how they are used. And that is particularly the case in children. For instance, intravenous valproate was not particularly well-established at that time.

But to say it was experimental would be perhaps a bit extreme because a number of therapies are used in intensive care situations because it has somehow come into practice. I think that I have made reference in my report to the various guidance at the time on the use of midazolam in different conditions. So I would say it was avant-garde, but not necessarily experimental.

THE CHAIRMAN: Among the things that Dr Aronson said was he wouldn't have given it. He regarded this as something of a turning point, and given that Claire had already had diazepam and phenytoin, he thought that the fact that Dr Webb was turning to midazolam was an indication that there were problems and that, at that point, that was the stage to seek a transfer of Claire to a paediatric neurology ward, if possible, or to intensive care.

A. Yes. I think that it would be more appropriate to consider intensive care, but the problem there is, as I've referred to, about high dependency care. She was receiving a form of high dependency care, level 1, on

the ward in terms of a continuous infusion of a potent medication and the need for increased monitoring. So I agree that the combination of midazolam with other anti-epileptic drugs is an issue. Phenytoin, I know the dose that was given was large. It doesn't suppress, in clinical practice -- and I'm talking about clinical practice now rather than from a pharmacological viewpoint. We use phenytoin a lot intravenously and it doesn't produce much acute depression. And neither does valproate. But the combination of the three -- there is a tendency for synergism to occur and when you add the three together, the sum may be greater than the parts, and each part individually.

THE CHAIRMAN: But midazolam on its own, you said, had a much more depressant effect than the others?

A. Yes, indeed.

THE CHAIRMAN: So would that depressant effect then be aggravated by the fact that it is being used in addition to other drugs?

A. Yes.

THE CHAIRMAN: But more substantially affected by the fact that it's given in far too large a dose?

A. Yes.

MR QUINN: Just for the record, sir, it's on the transcript. It's 8 November, page 211, line 16 to 18.

THE CHAIRMAN: That's the use of "experimental"?
MR QUINN: Yes.
THE CHAIRMAN: Thank you. Anyway, we have Dr MacFaul's view on that.
MR FORTUNE: Sir, perhaps we can get away from the term "avant-garde" because that will no doubt come to haunt this inquiry. Exactly what did Dr MacFaul mean? We have "experimental", we have "off-licence", we have "off-label". "Avant-garde" is not a very helpful term to be added to the vocabulary.
MS ANYADIKE-DANES: Maybe, in fairness, it's appropriate to put in context -- I'm grateful to my learned friend for pulling this up -- the actual words of Dr Aronson and the context in which he was making the statements that he did.

If one starts maybe with line 7 perhaps. He's made his first point. He's a specialist in the field who has experience of managing such patients:

"... sometimes have to try new things based whatever evidence is available at the time, even though the evidence may not be as strong as one would want."

And to a certain extent, Mr Chairman, he was commending Dr Webb for trying his best to see what could be done at this stage and you had asked him a question along those lines. That's the first point:

"So I don't think there's anything to say that this should not have been a possible way of proceeding in these circumstances given all the caveats we've discussed before."

And we had gone through all the precautions you have to adopt if you're going to administer midazolam. Then he says:

"The second point then, which is what you're asking about, is how to communicate the uncertainty in this decision and how to communicate the way in which one should proceed. And it's my view in such circumstances that, when you are dealing with a what is really quite an experimental treatment -- it's a small, open study; it's not double blind, placebo-controlled, it's in patients who have different conditions, not well-described in the abstract but presumably better described in the main paper."

Because that's what he was being shown, an abstract:

"It's an early use of this drug and one ought to take great care when communicating to one's staff that one wants to use this drug."

And that's the context in which he was saying that. That's why I was asking you the questions that I was.

If nobody's particularly familiar with it, how do you communicate that and how important is it to make

that clear?

A. I think that the warning should have been given to the staff to take particular care of the respiration. I take the criticism of "avant-garde" and perhaps I should have used "innovative".

THE CHAIRMAN: The other interpretation of "avant-garde" is at line 23:

"It's an early use of this drug."

Isn't that avant-garde?

A. Yes, that is the same.

MS ANYADIKE-DANES: I wonder if we could now move on to a different topic, which is to do with the neurological observations.

THE CHAIRMAN: Before we leave midazolam, do we need to look at the dosage? Is that self-evident?

MS ANYADIKE-DANES: It's self-evident that it was an overdose. I think Dr Aronson has talked about the implications of an overdose, particularly in combination with the other medication. I wasn't necessarily getting this witness to traverse the areas that others --

THE CHAIRMAN: That's fine. Just for the record, doctor, you are questioning the use of midazolam, but even to the extent that its use is defensible, administering it in triple the appropriate dose increases the potential problems which you've already identified; is that a fair

summary?

A. Yes. I think if Dr Webb had a confident diagnosis of non-convulsive status and had excluded other causes and he felt that the non-convulsive status was responsible for the underlying condition, it would not have been inappropriate, given his experience of its use in Canada, to use it. And I say that because it has clearly been in use in other areas. That is why it has appeared in these guide books on medication in children. People are obviously aware of its use in epilepsy. So it was not -- it was part of the armamentarium. The point is it was used without confirming the diagnosis and without also seeking alternative explanations of the cause of Claire's illness.

MS ANYADIKE-DANES: Mr Chairman, the issue that you had talked about, about the particular dosage, the dosage of midazolam, the dosage of phenytoin, for that matter, and issues surrounding that was something that I thought that this witness, Dr MacFaul, perhaps might better deal with in governance because there are some governance issues that arise out of that.

There was one particular observation that you had made in relation to midazolam. It's not the dose in particular; it's something that was raised with, I think, some of the other witnesses. It's 090-022-055.

There it is there. That's the calculation of the midazolam and the dose. That is Dr Stevenson's entry. Immediately below that is Dr Webb's entry. I think you had expressed the view that Dr Webb should have noted those dose errors, and that's in your report at 238-002-021. We don't need to pull it up.

Dr Scott-Jupp was put that point. I'm not entirely sure ultimately what he concluded, but I suppose he thought that it wasn't necessarily a matter for Dr Webb to have calculated or gone over and checked the arithmetic. The point was being put to him: leaving aside the arithmetic, given that it was novel, should he not have noted that he had made an error in the actual dose? So it was 0.5 instead of 0.15. And I think your view was that he should have noted that; is that correct?

A. Yes. The mathematical calculation there is correct if the 0.5 milligrams per kilogram were the dose to be used. The error came in writing a prescription. And the dose of the infusion is correct. What is not correct is the 0.5 milligrams per kilogram, 500 micrograms per kilogram. It is pretty clearly evident there. That is why I raised the question: why had that dose been advised, if it was advised? How had it come about? Because it is evident to whoever's writing

underneath that that was used as the basis for the calculation. That is quite a high dose.

Q. Yes. Can I also take you to a further page in the notes, 090-022-057? It's the note of Dr Steen at 4 am. Dr Steen has been advised that Claire has suffered a respiratory arrest and she comes in from her home to the hospital, she sees the child. As in all matters to do with these events, she has no longer an independent recollection of what happened, but her view was that she would have brought herself up to speed, would probably have spoken to the nurses and so on to try and take stock of where they were and looked at the notes. She then writes this, if you like, summary of where they are and what's happened. You can see that it starts with her age and learning difficulties and so forth.

Then if you see about two-thirds of the way down there, Dr Steen says:

"Has had some midazolam, but it is no longer running."

If she had been looking at the notes to bring herself up to speed, if I can put it that way, to write this note and presumably ultimately to speak to the parents, should she have noticed that there was a very large dose of midazolam, it was 0.5?

A. That is a difficult question to address because

a general paediatrician coming across that usage, it would not be part of their practice. So she wouldn't necessarily be aware that this was out of range, out of the advised range. It is not a drug that's used by general paediatricians much at all by bolus. It tends to be used by anaesthetists, if it's used in that way, or intensivists. So I think Dr Steen would not necessarily have understood or recognised that that had been an overdose. And I suspect, but again this is conjecture, that she took it that that was the advised dose that Dr Webb had given.

Q. She has noted the different anticonvulsants and other medications that Claire was administered. Would it have been appropriate for her to discuss the drug regime with Dr Webb? She and Dr Webb were there together at some point and, in fact, met the parents together. Before they did that, presumably they would be discussing matters so they knew what they were going to tell the parents as to what had happened and to form a view. Would it have been an appropriate question for her to ask him to explain just exactly what had happened about the medications, why had so many different anticonvulsant medications been administered, what was his view?

A. Yes. But it's not clear from that note that at that

point -- I mean, Dr Steen is just noting "query aetiology". So it's not clear what the cause of the acute encephalopathy was. Presumably, there has been some discussion between the two, but that is conjecture. All that one can rely on here are the notes or the witness statements.

Q. In fairness, she may not have spoken to Dr Webb at that stage. My question to you was slightly different: at a point before they go in to speak to the parents, should they have had a discussion so that she could satisfy her as to what exactly had happened, what had been done and why, particularly if she has queried that aetiology of encephalopathy?

A. At some point, yes, but in the timing scale, as you identify here, that would have been something to have done before the parents were --

Q. Yes, that's my question.

MR FORTUNE: Sir, we're very much in the world of conjecture. There has been a string of questions put to Dr MacFaul as to what could or should have been discussed, and in particular the drug regime and specifically the dosage for midazolam. At 4 o'clock, whilst we may appreciate that things are very pressing, how important was it then to have a discussion about the drug regime? That may be a more pertinent question.

MS ANYADIKE-DANES: I think, Mr Chairman, I had modified my question to ask him whether before they met the parents they should have had that discussion.

MR FORTUNE: Even if you modify the question, there is still whether or not you would expect such a discussion to take place when clearly there are more important concerns in the minds of the two clinicians.

THE CHAIRMAN: We'll come on to the couple of hours later when we look at the questions to be answered before the brainstem test is conducted.

MR FORTUNE: That's another matter, sir.

THE CHAIRMAN: It is another matter, but we'll come back to it.

Can I ask you this, doctor, in a different way: the fact that Claire was overprescribed phenytoin, but more particularly overprescribed midazolam, does not seem to have been raised on the Wednesday, the day of her death. It does not seem to have been raised during the subsequent limited autopsy or discussions with the parents. It was not even raised in 2004 after the family contacted the hospital and there was supposed to have been a review of the treatment she received.

A. Yes.

THE CHAIRMAN: And it wasn't even raised at the inquest in 1996.

A. No.
THE CHAIRMAN: Do you find that hard to understand, how it was repeatedly missed --
A. Yes.
THE CHAIRMAN: -- particularly the midazolam point?
A. Yes. It is difficult to understand. Midazolam is obviously part of the therapy used. Whether Dr Webb was conscious at the time that an excessive dose had been given is obviously open to question. I don't know.
THE CHAIRMAN: But if Dr Webb wasn't there, let's move forward to 2004 when Dr Webb, I think, was no longer in the Royal so he would not have been involved in discussions with the Roberts family. If somebody else is coming in to review what happened in Claire's case to respond to the family's concerns and to decide whether the case should eventually be referred to the coroner, then the issue about midazolam should be picked up at that review, should it not?
A. Well, I believe so. That is one of the reasons why I said in my report on governance that it would have been more appropriate at that point for an independent review of the records by a paediatrician with experience in acute encephalopathy or a paediatric neurologist rather than a review of the broader aspects by Professor Young, who was a physician for adults.

THE CHAIRMAN: Thank you.
MR COUNSELL: Sir, if I could just explore that a little bit? It really relates to the issue of how obvious the 0.5 should have been to Dr Webb, leaving aside Dr Steen, whose own expertise is slightly different. Of course, that bears upon what instructions Dr Webb may have or may not have given to Dr Stevenson on that afternoon, whether it was on the telephone, as Dr Webb appears to suggest --
THE CHAIRMAN: Well, I'm not sure that he does really. There are a couple of different versions going around from Dr Webb, aren't there?
MR COUNSELL: There certainly are. Indeed, in the third statement, Dr Webb says two things, both of which can't be right, but that's another matter. The question you may like to be asked of this witness is: how obvious it would be to someone in Dr Webb's position, particularly perhaps given that he had just looked it up, that the 0.5 was wrong? And also, of course, in the context of his preparing statements after that -- and in particular in, I think, 2005 for the inquest -- where again Dr Webb appears to completely overlook that error. I'm thinking in particular of the statement which appears at 090-053-165, if that can be brought up, in which, towards the bottom, he deals with the bolus dose,

but makes no reference whatever to it being an error.

THE CHAIRMAN: Yes. Let's go back to 090-022-055 because this was the issue which was raised with Dr Scott-Jupp. If this is the position, that's fine. It's not my job to push it. But doctor, it's not just that the 0.5 is wrong, but the 0.5, using that as a factor in the calculation, leads on to an eventual total of -- well, that leads to 12 milligrams being prescribed, isn't that right --

A. Yes.

THE CHAIRMAN: -- when it should have been a bit under 4?

A. Yes.

THE CHAIRMAN: So it's not just that there's one opportunity to pick up the mistake, there's two, because the calculation is spelled out there.

A. Yes. That is true. What I don't know, sir, is what reference Dr Webb was using. If I recall -- and I'm not precise about the documentation -- he did say that he went back to his office to check on the dosages with which he had been familiar when working in -- I think it was Canada.

THE CHAIRMAN: Yes.

A. But I have not seen what the Canadian unit protocol was. Dr Webb refers to a paper by, I think, Koul or somebody like that, published in the archives. And there,

in that study to which he refers, the dosage is 150 micrograms per kilogram, which is 0.15 of a milligram. Whereas it may be the case, and it is again conjecture -- one has to address it in that way -- that what was used in Canada was that dose and that would be a question, I suppose, that would be worth considering: was Dr Webb using that kind of dosage in Canada? In which case it would not stand out to him as being an overdose.

MS ANYADIKE-DANES: Sorry, Mr Chairman, he actually produced the abstract. That was what was shown to Dr Aronson and it was quite clear it was 0.15.

A. From Canada or from the published study? Because the paper that is referred to by Dr Webb is a publication which has 0.15. But I think he was referring to what he had been doing in Canada because he had experience in Canada of its use.

THE CHAIRMAN: That may be something we develop with Dr Webb. Thank you.

MS ANYADIKE-DANES: Yes. Thank you. Sorry, Dr MacFaul, I was going to take you to the neurological observations.

MR McALINDEN: Sorry, Mr Chairman, just before we leave that point.

In relation to your comments about the independent

review or the review that was carried out by Professor Young, there are two points I wish to highlight at this stage. It arises out of the first statement of Professor Young, WS178/1 at page 2, question 1(b). You will see that Dr MacFaul has again referred to Professor Young as an adult physician. And it is clear that Professor Young is a consultant in clinical biochemistry. In relation to the investigation that was carried out by Professor Young, I would ask you to go to page 4 of his witness statement at the top, which is in relation to the purpose of the review:

"The purpose of my review was to provide an independent assessment of the case and to advise Dr McBride whether hyponatraemia may have contributed to Claire's death. This was to inform his decision on whether to refer the case to the coroner."

So it'd be Professor Young's evidence that it was really the issue of hyponatraemia that he was looking at and he certainly wasn't doing a general overview of the treatment, which might probably explain why the issue of the midazolam overdose was not --

THE CHAIRMAN: Was not addressed?

MR McALINDEN: Yes. It was simply that his review was restricted as a clinical biochemist, a consultant in clinical biochemistry, to the issue of fluid management

in hyponatraemia at that stage.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: That's going to be an issue that we will develop in governance. I'm grateful for Mr McAlinden saying what he has, but perhaps we'll deal with that in governance.

THE CHAIRMAN: His intervention is perfectly legitimate in order to highlight what the limits on the role of Professor Young were in 2004.

MS ANYADIKE-DANES: Yes, from the Trust, yes, but that will be an issue in governance: what his remit was and what he should properly have looked at and what conclusions he might reasonably have reached.

THE CHAIRMAN: I know.

MS ANYADIKE-DANES: So if I can take you to the neurological observations. I'm conscious of the time, Mr Chairman.

THE CHAIRMAN: Let's try and get the neurological observations done before we break.

MS ANYADIKE-DANES: Of course.

This issue is one of those that Professor Young has commented on in his witness statement, 178/3, and if we can pull up page 2 of that. He sets out there the purpose of that report. It's to address the fluctuations in Claire's GCS scores during her admission and to comment on how they should be interpreted. In

particular, he wants to highlight the issues to do with interpretation. He says that the inquiry has focused particularly on the fall in the GCS from 8 at 8 pm to 6 at 9 pm, and a number of witnesses have been asked to agree that this represents deterioration in Claire's condition and that they have generally accepted that it does. But he says:

"These witnesses are clearly not aware of the significant literature about measurement variability in GCS assessment."

And that's really want he wants to address. He takes issue with you at the part of your report, which is 238-002-075, which I think is in your full report, and it says -- sorry, can we go back to where we were?:

"It was stated that Claire's CNS observations had remained stable over a period of time and no clinical signs of further deterioration were noted. This is not correct. The GCS reduced over the evening and had done so by the time the blood sodium level was available."

And then he refers to the evidence that he's going to -- which he does, the papers that he does adduce are attached to his statement -- and he says on the basis of that your statement is unreliable and that her GCS values during the day are:

"... entirely compatible with Claire's neurological

condition remaining stable, although she was clearly seriously ill, and that they should not be interpreted as indicating a decline in her condition over the period."

I have to say, it would appear from that that he's rather extended the record and he's not just talking about any change from 8 to 9; he refers to "during the day".

So if we can just pull up the schedule which shows her GCS scores. 310-011-001. The record doesn't take you past 9 because they remained fairly constant at 6 or 7, depending on how you are looking at it. Perhaps we can have alongside that the central nervous system observations sheet. It's 090-039-137.

So that table is to extract the information from the top part of that as well as adding, in red, an observation that Dr Webb made when he examined Claire at 2 o'clock in the afternoon. But the full CNS observation chart has all the other information that they were recording in relation to her, and you can see what it is. In addition to that, although we don't have space to put it up, there's the record of attacks, which indicate when she had her seizures -- or her episodes -- which are 3.25, 4.15, 7.30, I believe, and 9 o'clock.

So the question that's being put is, firstly, do you

look at the GCS score alone to give you a view as to whether a patient is deteriorating, or what information from all that's being recorded are you actually looking at to form that view?

A. Well, if a clinical review is undertaken by a nurse or a doctor, they're looking at the general state of a child --

Q. Yes.

A. -- and they use additional measures such as the temperature, pulse, respiration, oxygen saturation. In the context of neurological problems, the GCS is used. It's a clinical scoring system and my own experience of clinical scoring systems is that they are subject to interobserver variability. All of them are. Croup scores, our own observation scores. I have video evidence of children's breathing rates and asked two doctors to rate them and they come up with different figures.

So there is an observer error in any clinical scoring system and that is one of its defects. On the other hand, the GCS in children, the children's version, is used, it's very frequently used, it's used in head injury in particular because falls will trigger certain actions such as further scanning or neurosurgical intervention. It has been used widely in coma and it

has also been used, even with its defects, in structured research into coma and head injury.

So it is adopted in research and clinical practice, even if it has these variations. I think that Professor Young is making a valid point, but it is the best that you have.

THE CHAIRMAN: Sorry, let me ask you to pause. The specific criticism of you is that you're one of a number of expert witnesses who appear to be unaware of this literature and its relevance to the interpretation in changes of Claire's condition. Are you unaware of the literature about the variability in measurements in GCS assessment?

A. In general terms, not specifically GCS, but in general terms about any observation score because that is something we have encountered in our own research.

THE CHAIRMAN: So do you think it's fair for Professor Young to criticise you for being unaware of this literature and, by extension, of this issue about variability?

A. Then he would be criticising the neurological/neurosurgical profession handling children in that respect and I suppose we would all have to admit that that is an opportunity to be exposed to criticism. Because literature is there, one would be generally aware that the literature on variability in scoring

systems is -- we know that, it's just general background knowledge. The point is, I suppose, in adopting such a scoring system, one is conforming to what is accepted practice and this is what was accepted practice in paediatrics.

THE CHAIRMAN: In other words, it might be imperfect, but it's the best available practice?

A. It's the best that we have. It's even worse in young children, in small children who can't talk, for example, so you can't easily assess the -- this is why I referred yesterday ... In our own research studies, we've not used the GCS, but that's because we used a simpler system, the AVPU: alert, voice, pain and unconsciousness. But the principle that Professor Young is raising is an interesting and valid one. I suppose one could argue, if he is saying -- and I haven't looked in detail -- that, let's say, it could be variable by two points, you could also argue on that basis of logic that the score, say at 6, could have been ... Or the earlier ones could have been 10 or 9 and also you could say that the 6 could have been 4 or 2.

So it is the best that you have and it could have been worse or it could have been better. That would be one way of saying that it's open to criticism.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: Just so that we're clear about that point, you're not saying that you don't appreciate that there are studies, there is literature, there are concerns about the extent to which you can rely on it rigidly or how accurate any system of scoring is? You're not saying you're not aware of that.

A. No.

Q. You're simply talking about what you use and how you use it and why you use it?

A. Yes.

Q. In terms of that sort of criticism, is that what you would have been taking on board when you were trying to develop your own scales? And I think yesterday, when I was taking you through your curriculum vitae, you talked about the development of the acute illness severity scale and other instances where you're trying to bring some objective scale and structure to help people in assessing the seriousness or the type of illness of a particular child is presenting. So you're aware of that sort of thing in developing scales of that nature?

A. Yes, certainly so.

Q. And I think when you were answering the chairman just now, you said you, in your hospital, didn't use the Glasgow Coma Scale, you used a modified, simpler

version. In order to make the decision to move from one to the other, you are taking on board the implications of that for how reliable they can be in the detail of them, if I can put it that way?

A. Well, may I just clarify that point? In general paediatrics in my own hospital we use the AVPU scale. In the research studies that we've been doing, we have been using the AVPU scale. Also, in my own hospital, we use the GCS. The reason we do that is that we have traditionally always taken children's head injury under the care of the paediatric team. That varies a bit between hospitals, but ever since I went to Pinderfields we have also taken under our case admissions with minor head injuries and we use the GCS in every such child. Now that varies across the country, whether children with a minor head injury go under a paediatrician or do they go under a surgical specialty. And the general advice is that they should go under paediatricians' care, but it does vary a bit across the country. Sometimes they go under orthopaedic surgeons, sometimes under general surgeons if there isn't a neurosurgical service on site. So we have been using the GCS in my own hospital is the bottom line on that.

Q. And just finally on scales, isn't it the case that all children, when they are born, get given an Apgar scale?

A. Yes. That is a little bit more reliable though, but yes.

Q. That is a scale as well.

A. Yes.

Q. Just to go to how one might try and deal with the interobserver variability, and I think the point which I think you've conceded to Professor Young is a fair one, a point that's been made is in particular there are changes in shift, so it may be that within the shift it's perhaps not always the same nurse who does the observation, but certainly there are whole changes of shift when you don't even have perhaps the opportunity. And that's noted on the schedule. Between 2 and 3, you'll see a red vertical line, and between 8 and 9 you'll see a red vertical line. That's to indicate changes in shift.

This point about the Glasgow Coma Scale was put to the inquiry's expert, Ms Ramsay, who's the inquiry's nursing expert. Her point about that is that very often if there was a -- I hope somebody will call up the reference to it for me. Very often, if there was a change or a nurse felt that she was going to apply a score which was slightly different, she might go and speak to the nurse who had recorded the earlier score and they might talk about it and she might get a view as

to whether there was a reason for her difference or it was just her particular take on it.

THE CHAIRMAN: Or speak to the parents, she said.

MS ANYADIKE-DANES: Or speak to the parents, who were usually there all the time, and get a sense as to whether what she is noting is actually a real change or just a difference in perception. There are ways in which one can try and bring some greater accuracy to what is otherwise a subjective test, if I can put it that way.

A. Yes. I think the ideal, of course, would be one person doing a sequential scoring, but that doesn't happen in practice. It is a shorthand way of being able to hand over what a person's impression was of the level of coma from one point to another. Because otherwise, it could be quite a long way of having to describe it. So it is the best measure, if you like, that we have of the condition in Claire. And in order to address two further points, if I may.

Q. Yes.

A. Professor Young criticises my comment. I would also add in the fact that, over that time in question, when she was, according to Professor Young's view, possibly stable and my view was she was not really stable, was the emergence of a further seizure at 9 o'clock

sufficient to require additional therapy. So that is one point.

The last point before I finish answering your question is to just to deal with the question of whether was I aware of literature about scales. And it just occurred to me that one of the examples where there is interobserver variation is in the assessment of children with dehydration between individual observers. That is based on a clinical assessment and scoring system and I have a publication on that in relation to diarrhoea and vomiting and I can refer you to it, where we acknowledge the interobserver variation in a clinical observation scoring system.

Q. And I've found now the reference for Mrs Ramsay. It was her evidence on 8 November. It starts at page 60 at line 12. It's Mr Reid asking the question:

"I presume that there would be different times when you were taking a Glasgow Coma Scale result, and from your experience what did you find about the differences between the subjective views of each of the different nurses when it came to assessing someone for a GCS result?"

And her answer is:

"Well, it depends on the expertise of the person that's doing it, and possibly, if you then get more

expertise of the individuals, then you get greater consistency. If your assessment varies from the previous one, then you would either recheck it to see which one of you is the closest to it, or get somebody else to come and check what you've observed because there is some subjectivity to these assessments and some level of expertise in terms of interpreting what you are seeing in front of you."

He summarises that, Mr Reid as:

"You might double-check it yourself, you might bring another member of staff."

And then your point, Mr Chairman, at line 11:

"Yes, but also for some of these things you can ask a parent's view as well because the parents are the constant, so they might have been there when the previous person did things, and so you are asking 'How did Claire respond last time?'"

And that would give you an indication.

THE CHAIRMAN: Okay.

MS ANYADIKE-DANES: So nonetheless, is your view that the Glasgow Coma Scale is a useful tool?

A. Yes.

Q. But it's not the only tool?

A. No.

Q. So if you were trying to assess whether Claire's

condition had deteriorated over the day or over the afternoon or even just between 8 and 9, you would be looking at other recorded results and obtaining other information?

A. Yes. Looking at your general impression of her clinical state would be one. The emergence of seizures, as I have just referred to, and she had another episode at 9 o'clock. And so the clinical assessments are not confined to the GCS. Our problem, I suppose, with Claire is that there is no other record in the notes to which a reference can be made.

THE CHAIRMAN: Because no more tests were carried out on --

A. No more tests, no more clinical notes were added. The 9 o'clock assessment was followed by a change in the midazolam dosage, I think, by one of the junior doctors. Dr Hughes, I think it was. So there was a sufficient concern about her change in neurological state in terms of her seizure to increase the midazolam infusion. So that would be difficult to say that there wasn't a deterioration and it would be difficult to say that she was stable in those circumstances, given the drop in the GCS. It's on the basis of the evidence available that one would say it would be difficult to assert that she was stable.

MS ANYADIKE-DANES: Yes. You're right, the records show

that the midazolam rate increased at 9.30. The episode of screaming and drawing up of arms which brought about an increase in her heart rate to 165 and an enlarging of her pupils is recorded as 9 pm.

A. Yes.

MS ANYADIKE-DANES: Thank you. Mr Chairman?

THE CHAIRMAN: Okay. Five to 12.

(11.45 am)

(A short break)

(12.00 pm)

MS ANYADIKE-DANES: Dr MacFaul, just one point I was asked to clarify with you: when you were talking about the deterioration, one of the factors that you mentioned -- at least in terms of her deterioration between 8 and 9, say, as opposed to over the entire day -- was the fact that she had had another seizure at 9 and there had been an increase in the administration of her midazolam in relation to it, or at least you assumed it was in relation to it.

Just so that we're clear, because these seizures are described in different ways on the record of attacks and also sometimes in the evidence themselves. We can pull up 090-042-144. Is it the fact of having an episode at all in the light of having had quite so much anticonvulsant medication or is it the nature of the

episode, or both, that's relevant?

A. What is relevant is that it was some kind of disturbance of her neurological status.

Q. Thank you.

A. It could be epileptic. In other words, a fit. But in brain oedema it is possible, when the brain swells, to get odd movements generated as part of the disturbance of intracranial pressure and they become generated from the brainstem if it is ... Or the basal ganglia may get disturbed. These are parts of the brain which are not necessarily generating seizures, but they're generating what are called dystonic movements -- either extension of the trunk, flexion or extension of the arms -- and these may be non-epileptic episodes indicating brain swelling and they're open to either. You may, if you're doing cerebral function monitoring, which is a continuous EEG, determine between the two, but if you are not doing cerebral function monitoring, then it is open to question what it is and it was not unreasonable to consider an adjustment in the anti-epileptic therapy in response to that.

Q. It wasn't so much that I was asking you; it was to ask you to clarify your position that this is part of what led you to believe there had been a deterioration in her condition. The mother herself, who saw it -- and maybe

her father saw it too -- they certainly described her screaming and drawing up her arms, but to them it looked as if she had shocked herself out of her sleep and she was sudden -- and her eyes were open. Somebody will find it in the transcript if I've misdescribed it. In any event, that was their characterisation of it.

Obviously they're not trained, they weren't sure what it was, but that's how it struck them. This is how the nurse has recorded it. However it's described, is it to you an indication of a deterioration in her condition?

A. It's an indication that she was unstable.

Q. Thank you.

Mr Chairman, I'm going to pass over Dr Webb's examination at 2 o'clock. Professor Neville has described the criticisms that he makes of it and I think it starts at ...

THE CHAIRMAN: Dr MacFaul touched on this yesterday when he said what you would be critical of Dr Webb for at 2 o'clock is the lack of testing which he directed on foot of his examination.

A. Yes.

MS ANYADIKE-DANES: Yes. Well, Professor Neville has expressed his view in not such dissimilar terms, in fact, at 232-002-008 going on to 009. In Dr MacFaul's

own report, he talked about the lack of testing and he also said at 238-002-046 that a neurologist really ought to have been aware of the risk of the development of raised intracranial pressure even if there were no signs of it at the time.

So I think Dr Neville and Dr MacFaul are not so far away from each other and, in that case, I don't propose to go into it any further.

THE CHAIRMAN: I don't require it unless anybody else requires it. No? Okay, thank you.

MS ANYADIKE-DANES: There might have been a question I was asked specifically to raise. (Pause).

I think actually, you may have touched on it a little bit yesterday, but just for clarity because we have been asked.

If, at 2 o'clock, Dr Webb was under the impression that the serum sodium level was 132, what at that stage do you think he ought to have done?

A. In my view, he should have recognised that the slightly out of range sodium -- it was out of range, not by definition hyponatraemia, but out of range -- should have triggered him to consider that inappropriate ADH and/or water overload were present because both of these conditions are contributory to evolving brain oedema and brain oedema was a risk because of the brain problem

which Claire had.

Q. Thank you. Then if I might ask you about the CT scan before we go on to Dr Webb's examination at 5 o'clock in the afternoon. Professor Neville regarded the lack of a CT scan as a major omission. In fact, he believed that it should have been carried out on the evening of the 21st. The reference for that, which we don't need to pull up, is 232-002-004.

He also thought it should have been carried out at the very latest by the morning of the 22nd. That's 232-002-007. And in any event, it should have been carried out before the administration of any further anticonvulsant medication other than the rectal diazepam. When I had read out a part of his report to you about testing, Professor Neville always thought that the rectal diazepam was probably all right to administer; it's what you did thereafter.

In terms of the carrying out of a CT scan, do you have a comment as to the views that Professor Neville has expressed there?

A. Well, I think that a scan was indicated, but exactly when, I would defer to Professor Neville, I think, on that point.

Q. Thank you.

A. As far as should it have been done, the answer is yes.

And the reason why is that you could not, at that stage, know why Claire had a brain disease. And amongst the conditions that could have been present would have been a brain tumour of long-standing, which had just become increased in size. There could have been even a small bleed because she might have had a head injury that somebody hadn't noticed if she'd tripped over. And there could have been even a brain abscess, exceedingly rare, but it does happen, without there being a fever. In other words, there could have been a structural lesion within the brain responsible for her brain illness. And she did have focal neurological signs. In other words, a difference between the sides which was reported on admission. And all of these features would indicate that a scan was necessary to either include or exclude those conditions because one of them -- for example, an abscess or a tumour, another -- would require a neurosurgical intervention.

Q. Thank you. Then if we come now to Dr Webb's actions at 5 o'clock in the afternoon. Both Dr Scott-Jupp and Professor Neville were asked to comment on what actually happened and, more to the point, what they thought should have happened at 5 o'clock in the circumstances. If I provide you with Professor Neville's views. He thought that Claire's state at 5 o'clock when she was

examined by Dr Webb required a diagnostic assessment of the cause of what he considered to be her deterioration. So he was of the view she had deteriorated and what was required was some sort of diagnostic assessment of that. That would have included electrolyte testing, an EEG, a CT scan, if it hadn't already been done. And the reference for that is 232-002-010.

He also considered that any differential diagnoses should have specifically included the causes of raised intracranial pressure, particularly as they are quite common and he regarded them as potentially treatable. And that's on the same page. And staying with the same page, he said that any review of Claire's condition should also have included a review of the prescribed drugs. Do you differ in any way from him or wish to add anything to that?

A. No, I agree.

Q. Thank you.

THE CHAIRMAN: Is this the difference, doctor? Can I ask you it in this way. If Dr Webb had come through at 5 o'clock and he had seen that Claire had responded, that her condition had improved, then he may have been able to leave the hospital at that time or not long afterwards with some reassurance that the treatment he had prescribed for her was working, so you could

relax to some degree. But when he goes along at 5 o'clock and there isn't any clear improvement, despite the drugs which she's been administered on his direction during the afternoon, that then becomes more worrying, doesn't it?

A. It does, sir, yes, but I was taking my approach as clinical governance, and on that I would just say how was the care management plan consistent with guidance at the time? The guidance at the time was, by that time, a range of blood investigations should have been done and reported and a CT scan and an EEG should have been carried out. In other words, to conform with what Professor Neville has said, by that time a more precise explanation should have been obtained of the cause of the underlying brain disease.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: What in fact happens is he prescribes yet more medication.

A. Yes.

Q. I think you have, to some extent, addressed the question of admission to paediatric intensive care. But just so that we're clear in terms of the timings of consideration for these things, is that a time when you think that might be considered, along with all the other things that Professor Neville had indicated and you've

just agreed with?

A. I think in my own view on this, it depends on whether or not Dr Webb recognised that the dose of midazolam was what he had intended or was an overdose. I don't know what he intended, and we have referred to that this morning. I suspect it was more than he intended, but that's a suspicion only. Had that been the case, then an overdose would have occurred and that would have been a good reason to consider intubation and ventilation in that circumstance, and that would mean inviting an intensive care specialist to come and see Claire and get her into the intensive care unit. So there was an opportunity then to do that.

THE CHAIRMAN: Okay. That's one scenario. If he didn't realise, as appears to be the case, that there was an overdose when he examined her at about 5 o'clock, in terms of a referral to PICU, what is your position?

A. Well, I think that by that time he should have considered that cerebral oedema was a significant risk. He ideally should have had a feedback from his blood investigations ordered at 2 o'clock, but he didn't. As a minimum, I think he should have had a forward plan, which would have included that as a contingency.

THE CHAIRMAN: Would that involve making contact with the anaesthetist in PICU to discuss with them, so even if

she doesn't go into PICU at that point, there's at least a discussion?

A. Yes, there's a view around, and it's still current, that if you have a child that is likely to require intensive care, and you've got your intensive care on site, it's a good idea to discuss, if nothing else than to give warning that this may be a problem in the evening.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: Is that also the case if you're considering, as Professor Neville thought that he might be considering, or ought to have been considering, raised intracranial pressure? Because a way of dealing with raised intracranial pressure, amongst other things, might be ventilation. And if that was the case, that would also require being carried out in paediatric intensive care.

A. For certain that would be a good indication for intubation and ventilation electively. Cerebral oedema was very much on the cards at that point, even in the context of managing non-convulsive status because cerebral oedema can complicate status epilepticus.

Q. So in terms of having the discussion, I think the way you put it to the chairman, even simply to put them on notice that something like that might happen, might that be a prudent thing to do if you're about to go off duty

and then that makes it rather easier for the registrar who remains, or the junior team who might have to do that without your assistance, if you've already raised that with the paediatric team in intensive care?

A. Well, yes, because at that point Claire, in his eyes, was being managed for status epilepticus with pretty maximal medication. The next step, if that didn't control the seizures, would have been -- to control the seizures alone would have been to proceed to elective ventilation because you would be adding some other medication such as thiopentone, which stops respiration, in effect.

Q. Yes. If we actually look at what he recorded for 5 o'clock, it's 090-022-055. At this stage, he's acknowledged that she's had her loading dose of phenytoin. That in and of itself was too much because of the way it was calculated. She had had a bolus of midazolam. And he acknowledges that she continues to be largely unresponsive. So despite all that's gone before, and as the chairman said, his treatment therapy, she's not been responsive to that.

Then he takes the background from her mother, then he formulates this plan, which is to deal with the viral sides of things, check the cultures, and then add a further anticonvulsant. But in terms of the matters

that you were just raising with the chairman for the plan, where in that plan do you find plan B for if the treatment with the anticonvulsants is not successful in the way that it hasn't been successful all afternoon? What's the plan B in there?

A. Well, there is no recorded forward contingency plan, as we call plan B, which would have been good practice.

Q. So does that mean, without any foresight as to what actually might happen, which isn't signalled there, or what people should be looking out for, which is also not signalled there, it's left to the rather overstretched registrar and the junior members to determine who they contact, when they contact them, and what they do, should her condition deteriorate?

A. Yes. I think the other missing thing there is the inter-reaction between Dr Webb and the consultant who is undertaking her care.

Q. Yes. That probably does bring us on to that. But before we get quite there, I wanted to ask you about an issue to do with keeping Dr Steen informed or Dr Steen keeping herself informed, if I can put it that way, because that does lead on to the other question about the relationship between the two consultants.

So far as you can help us, whose responsibility was it during the various stages of the day, if I can put it

that way, to ensure that Dr Steen knew what was happening to and with Claire? In terms of whose responsibility, the three that I have in mind are Dr Steen herself, Dr Sands and Dr Webb.

A. Well, I think Dr Webb and Dr Steen had mutual responsibility to keep up-to-date. I think that Dr Webb had been asked to provide an opinion and, in effect, take a lead in the care of Claire while her responsible consultant remained Dr Steen. He had been asked by the registrar on behalf of Dr Steen. I think my view is that each had a responsibility to ensure that there was a discussion, either face-to-face or on the telephone.

Q. You mean in terms of him becoming involved at all? Because Dr Steen might not have appreciated that at the time it happened.

A. No, I mean around 5 o'clock. Because he had been engaged with assessing Claire. He had instructed some therapy and he was reviewing the effect of the therapy. So he had come to a position where he was ready, if you like, to discuss with Dr Steen and, equally, if Dr Steen was aware and, if she was aware, that Dr Webb had seen her on her behalf, then it was incumbent for her to find out what he had come to conclude.

Q. If we come to the period before Dr Webb is either

contacted, which may have been round about noon, or actually first examines Claire, which is about 2 o'clock, but if we come into the morning. Dr Steen's rota meant that she was scheduled to be in the hospital that morning. During the afternoon, she was going to be at a clinic, which is off the site, but at least she was scheduled to be there that morning. And you will know that there are issues as to where she was and so on.

But leaving that aspect of it aside, whose responsibility, as between Dr Steen and Dr Sands, was it to make sure that, by the time she leaves for her clinic, she is aware that a child like Claire has been admitted under her care and the belief at that stage that she is neurologically very unwell, the differential diagnoses are for status epilepticus, encephalitis and encephalopathy?

A. Well, I think it would have been Dr Steen's responsibility to find out what was happening to children admitted under her care and, in particular, to children who were unusually unwell. And Claire was clearly somebody who was significantly unwell. So it was her responsibility to determine whether there were any children like Claire because she may not have been the only one on the ward before she went off to her clinic. When she did that, ideally before the morning

started, if you like, but if she was not able to attend the ward then at least by a telephone call, and then subsequently if she was in the hospital, by a meeting with her registrar who had conducted the round on her behalf to determine whether there were any children that she should have seen or at least been in a discussion with before she left for her clinic.

Q. Thank you. During the afternoon, is it the responsibility of her registrar to keep her up-to-date with what has happened to Claire or is it her responsibility to phone in and to see how matters lie?

A. Well, if she was aware that Dr Webb was seeing Claire and she was aware that Claire was significantly unwell, it was her responsibility at least to ensure that she spoke to Dr Webb. Of course, Dr Webb might have consulted her, had a discussion with her around 5 o'clock, but he didn't. And in absence of that, she should have contacted him by telephone as a minimum. The role of the registrar -- well, he was aware of what was going on and I think it would be ... I believe he had a discussion with Dr Steen at some time.

Q. He did, in the afternoon at some point.

MR GREEN: Perhaps if Dr MacFaul's memory could be refreshed as to what Dr Sands' recollection, as supplemented by his -- as you've used the phrase on a number of

occasions, sir -- best guess is. If we can pull up the transcript for 19 October at page 182 to start with, please.

The run-in to it is at line 3 where Dr Sands sets out his understanding that Dr Steen was the consultant under whom Claire was admitted. There's no issue, of course, about that. Then he begins to set out what he would have said to Dr Steen in that paragraph.

Then if we move down to line 19:

"Well, I may have talked to Dr Steen by that point. I know that I talked to Dr Steen after I had spoken to Dr Webb, but I can't time my conversation with Dr Steen exactly."

THE CHAIRMAN: Would you remind me: does that mean he can't remember whether he spoke to Dr Steen after Dr Webb had been to see Claire at 2 o'clock-ish or after 5 o'clock-ish? He believes that he spoke to her once but he can't time --

MR GREEN: He believes he spoke to her once. I think, if you just bear with me for a moment, that he's unsure, although he accepts that he may well have spoken to her after he had referred the matter to Dr Webb, but before Dr Webb had seen Claire. Because if we go to page 183 at line 16, his recollection was that it was early in the afternoon.

THE CHAIRMAN: Thank you.

MR GREEN: And then finally, if we can just follow this through, if we go to page 185 at line 19, he adopts what Ms Anyadike-Danes put as to what would have been said during that conversation. Starting with how Claire had been admitted, what her presentation was and, perhaps most importantly, what Dr Sands felt:

"... because I had just examined her on the ward round and what my specific concerns were ..."

Which would suggest perhaps it was shortly after the ward round.

Then page 186, he says at line 3:

"'Neurologically very unwell' is a term that I've used, I think, in witness statements, and I think did describe how I felt about Claire, that her problems appeared to me to be neurological and of a serious nature."

Then Ms Anyadike-Danes asks the following pointed question:

"Question: What was your expectation that Dr Steen might do as a result of realising her patient was in that condition so far as you saw it at that stage?

"Answer: I'm not sure. I'm not sure at the time what I would have expected Dr Steen to do except to perhaps keep in touch, preferably to talk to Dr Webb if

at all possible."

Next question:

"Question: What would you have actually wanted her to do?

"Answer: Ideally, I would have liked her there."

I raise that series of passages for two reasons: first of all, to help Dr MacFaul's memory to be refreshed on the matter; and second, I wonder if he might be invited to comment on whether he and Dr Sands are at one with the minimum expectations of Dr Steen as Dr Sands set them out at lines 10 to 12 of that page.

MR FORTUNE: To assist Dr MacFaul as well, so far as Dr Steen is concerned, you'll recall, sir, that Dr Steen has no specific recollection of the events, no specific recollection of being telephoned by Dr Sands or what Dr Sands said. But Dr Steen did believe that she made contact with the ward about 5 o'clock or when her clinic ended and was given some reassurance, in whatever terms, that there was nothing to bring her into the ward immediately. There is no question of her speaking to Dr Webb or being contacted by Dr Webb during the course of the afternoon.

MR GREEN: I'm grateful for Mr Fortune's interjection. However, just to bring us back to the point I'm seeking clarification about, I just wanted to know whether

Dr MacFaul and Dr Sands speak with one voice on this issue.

THE CHAIRMAN: I think the point, doctor, is this: having seen what Dr Sands had to say at the hearing, do you, in broad terms, think that he did what you would have expected him to do as a registrar?

A. Yes.

THE CHAIRMAN: And would you be critical of him for not doing more than that?

A. No. He did ask Dr Webb to see Claire as well and that was a very responsible action. Whether that was following or before Dr Steen's discussion with him on either side, it was a good thing to do. And the expectations that he had of Dr Steen are entirely reasonable.

MR GREEN: Thank you very much.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: Thank you.

The other matter that I wanted to address in terms of just keeping Dr Steen informed -- it's one area, of course -- is Claire's condition and how she has fared over the day and what the various therapies are that have been tried. There is another issue to do with what her parents know about her and what's happening and what's likely to happen.

Whose responsibility was it, as between Dr Steen, Dr Sands or Dr Webb, in terms of Dr Steen finding out what the position was with Claire's parents?

A. I think it would have been good practice for Dr Webb to have spoken to the parents, and I suspect that he did, I can't again remember --

Q. No, sorry, it's a different question I'm asking you. It's not whose responsibility it is to speak to her parents; at the moment I'm trying to find out who should have been keeping Dr Steen informed. And the things that we have so far, or I have raised with you, are to do with the differential diagnoses for Claire, how she has fared over the day, what the treatment therapies were and so forth; the other issue is what her parents know.

Is it for Dr Steen to find out, what did this child's parents know about her condition and what's being done? Is it for Dr Sands to let her know: don't worry, they're being kept informed, you don't need to concern yourself about that? Or is it for Dr Webb to tell Dr Steen: I've spoken to them, I have briefed them so far as I can on the neurological aspects. How is Dr Steen to find out what Claire's parents know?

A. The normal mechanism is by communication through the registrar, but of course at this point I suspect that

the therapy plan and assessment was still ongoing in the afternoon.

Q. Yes.

A. And so by around the 5 pm time, one of those doctors should have taken some steps. But the responsibility ultimately was Dr Steen's because Claire was admitted under her care. So she perhaps should have either seen the parents herself or assured herself that somebody had kept the parents involved. That might have been, of course, through a telephone conversation with one of the nursing staff because the nursing staff are often conduits for information at more frequent intervals than the doctors' interaction.

Q. But in any event, the issue, if I have you correctly, should have been a live one for Dr Steen, "What do Claire's parents know about her admission?", and she should have been informing herself as to what they actually do know --

A. Yes.

Q. -- and how that information is to be provided to them if it hasn't already been provided to them.

A. Yes, I agree with that.

THE CHAIRMAN: Subject, surely, to this, doctor, that if there appears to be trouble in tracing or finding Dr Steen, then somebody else has to speak to the

parents? Because if you can't contact the consultant who's responsible, then the parents shouldn't be left waiting until God knows when.

A. I agree with that. I think it then falls on to Dr Sands or Dr Webb. Sometimes, of course, in this situation, in real life, it's the nursing staff who say to the doctors, "Go and see them".

MS ANYADIKE-DANES: Mr Chairman, I am going to come and ask that question specifically. At the moment, I was trying to find out how Dr Steen should have got that information for herself or whether indeed she should so that she should have ended up the day being satisfied that the parents have the appropriate information or if, they haven't, how that's going to be addressed. That's going to be my next question. Who should be responsible during the day for keeping the parents appropriately informed? If I then go to that question, which is part of a larger one, which is to do with consultant responsibility.

You have expressed the view that Claire should have been seen by a consultant in the morning following her admission or, at a very minimum, she should have been discussed with Dr Steen. I think you've dealt with that. You go on to say in your report:

"Dr Steen was the responsible consultant throughout

Claire's stay and there is no indication in any documentation that consultant responsibility was transferred."

That is certainly Dr Webb's position, that it never was, he didn't ever accept her as his patient. As far as he was concerned, he was providing expert guidance and direction. I wonder if you could expand your point that, so far as you're concerned, Dr Steen was the responsible consultant throughout Claire's stay. Can you explain what you mean by that and what the implications of it are in terms of responsibility?

A. Well, the consultant responsibility is to ensure that --

Q. I'm sorry, I'm talking about 1996.

A. The consultant responsibility in 1996 was, to a large degree, the same. They are responsible for ensuring that the diagnosis and treatment and communication with the parents is carried out to the best. If another consultant is involved, then that consultant may, as Dr Webb undertook, lead on the particular management and offer an opinion and set out and advise on a treatment plan, which he did. And the plan was implemented by the general paediatric team on behalf of Dr Steen, so she was responsible in a way for her junior staff in the administration of the therapy plan. She was also responsible throughout Claire's stay for being

up-to-date, if you like, with what was going on, or, if she was not on call on the night of the Tuesday, to have handed over to the consultant who was on call. Because Claire was at least, even if Dr Steen was reassured about the fact that a plan was in place and was ongoing, she should have been aware that this -- I think it's likely that Claire was an unusually ill child for the ward that day -- to have ensured that the consultant taking over was informed. The general paediatrician, I mean.

Q. Yes. This question when it came to the management of her fluid regime elicited different responses from our experts, although they might have come closer together when Dr Scott-Jupp was actually giving his evidence. The question is: to what extent should the neurologist, Dr Webb, have been involved or offered guidance and opinion on her fluid management?

A. Well, in my view, and I've stated it in my report, I expect part of the neurological opinion and treatment plan in an acute encephalopathy is to encompass the management of the fluids. By that, I mean he should have advised on the fluid treatment plan because of the reasons we've discussed, of the need for fluid restriction and adjustment of the sodium.

That advice should have been given to the junior

paediatric team either verbally or in writing in the notes. The fact was that the prescription and administration of the fluids was undertaken by the junior paediatric team, general team, but they should have been working to a plan set out by the neurologist in the same way as the drug therapy was set out by the neurologist, but the prescription of it and the administration of it was undertaken by the general paediatric team.

Q. I understand.

Are you of the view that because of the particular role or implications of fluid management in the treatment of her neurological condition, if I can put it that way, it is so integrally bound up with each other that that is something that the neurologist himself should have understood, appreciated and taken on board as part of his responsibility?

A. That is my opinion on this matter, yes.

Q. Then if we go to the communications between consultants, I was asking you before about how Dr Steen should have been informed, and I think your view came down, essentially, that it was her responsibility to know what was happening with Claire and, so far as it can be done, she should be taking the initiative to satisfy herself as to what was happening, in broad terms.

But in terms of closer discussion, Dr Webb has been asked to provide advice and guidance in relation to her patient, and he is planning her drug therapy and seeing what her response is to that and adjusting her drug therapy, bearing in mind the possibility of a CT scan the next day, that sort of thing. Because he's doing that, to what extent should the two consultants have been discussing Claire's treatment with each other and who should have taken the initiative to do that?

A. Well, they should have discussed at least by telephone if not face-to-face. The mechanism by which Dr Webb communicated, I suspect, was through the junior staff. So he may have felt that he had discharged that responsibility and that that team would have kept Dr Steen informed or that Dr Steen -- and this is the preferable option -- would have, knowing about the presentation of Claire, because we've just heard that she did, made sure that she was kept up-to-date by her juniors as a minimum, but preferably I would guess, given the condition, that after she'd heard about it from her juniors she would have initiated and should have initiated a discussion with Dr Webb.

Q. If, as seems to be the case, although we do not know exactly, that Dr Steen and Dr Webb have not actually made contact with each other by 5 o'clock. He is about

to go off duty, although he remains on call. He's adjusting her medication again. If he hasn't heard from her, should he be contacting her irrespective of whether it would have been preferable, prudent or protocol for her to contact him? Should he be trying to reach her?

A. I think in terms of the balance of where the responsibility lies, my view, which I'm trying to articulate, is that it was the responsibility of Dr Steen, really, because I think it would be fair to say that Dr Webb had written in the notes, he had written a drug therapy plan. I think he should have written a fluid plan as well, which we've just addressed. And he had had an interaction with Dr Steen's team.

Q. Yes.

A. So to an extent, he could have satisfied himself that he had discharged that responsibility in offering the opinion and therapy plan to the general paediatric team. I think therefore I would place the greater onus on Dr Steen to have informed herself and to have initiated a contact with Dr Webb, who had seen Claire on her behalf.

Q. Then what do you think should actually have happened at 5 o'clock?

THE CHAIRMAN: In terms of what?

MS ANYADIKE-DANES: In terms of the plan going forward. I don't just mean literally the prescription of medication, but how Claire's care was going to be managed.

MR FORTUNE: Is 5 o'clock before Dr Webb examines Claire?

MS ANYADIKE-DANES: Sorry, you're quite right. I mean after he has examined her.

MR FORTUNE: And after he has spoken to her mother. So he's got a full history and he's about to alter or has altered the plan.

MS ANYADIKE-DANES: Yes.

A. Well, he has offered a plan, which we've just discussed did not include a contingency plan for the forward management. He may well have felt that by doing that, he was now handing back to the general paediatric team in the expectation that the general consultant, Dr Steen, would become involved in some way. You could argue, well, in not knowing that, there's the case he should have initiated a telephone conversation, but I think we've just covered that.

Q. Yes. So that's from his side. From Dr Steen, what do you think should have been happening at about that time?

A. I think she should have seen Claire.

Q. She should have come back at the end of her clinic to see Claire?

A. Yes.
Q. And if she had done that, what do you think should have been happening? If she'd been able to do that and had a meeting with Dr Webb, which would have been ideal, I presume.
A. Yes.
Q. Let's say that happened. What do you think should have been the outcome of that?
A. I believe she should have had a discussion with Dr Webb either face-to-face or on the telephone as a minimum. I think she should probably have written her own assessment of what was going on in the records. And that didn't happen. And I think that there should have been some kind of contingency and handover plan, because by that time Claire was pretty unwell, to the consultant who was taking over for the evening.
Q. It wasn't going to be a consultant, it was going to be a registrar.
A. I meant the consultant because, by 5 o'clock, either Dr Steen was the consultant on call, and I don't know, or overnight there was a consultant general paediatrician responsible for Claire's management on behalf of Dr Steen. That is the person, the shadow, if you like, that hasn't appeared. I don't know who that was.

MR FORTUNE: Nor does the hospital, apparently.
THE CHAIRMAN: No.
MR FORTUNE: Sir, can I ask Dr MacFaul whether, in these circumstances, if Dr Webb for some reason is unable to get hold of Dr Steen, Dr Webb is about to go off duty but remains on call for the night, is there any duty on Dr Webb to find out who the on-call consultant is to be to speak to that consultant with a view to flagging up what might be a problem during the course of the night?
THE CHAIRMAN: In other words, if Dr Webb doesn't speak to Dr Steen at 5, 5.30, on Tuesday evening, should he speak to the person who is going to be the on-call consultant and/or speak to the oncoming registrar?
A. Either could have happened. I do think that there's an argument for him, yes, to discuss with the consultant on call. On the other hand, I believe Dr Webb was on call himself that night. So he may well have felt that if a problem was going to occur, he would have been contacted as well. I don't know what his expectation in that respect was. It's not written in the notes like "Keep me informed" or anything like that. There's no forward plan. But he would have envisaged that the consultant paediatric team would continue looking after Claire, whoever that consultant was.

If he had not had a discussion with the on-call

consultant, in other words if he and Dr Steen had not communicated, then one could argue that he should have contacted the on-call consultant, or indeed the registrar.

MS ANYADIKE-DANES: That's on Dr Webb's side. On Dr Steen's side, I was asking what you thought she should have done ideally. Well, you think she should have come and seen Claire. Ideally, she should have had an opportunity to speak to Dr Webb either then or on the telephone. What else do you think she should have done before she went off duty?

A. Well, if she had done these two things, she should have written in the notes what her assessment was and she would have -- if she was on call herself that night, that's fine. If she was not, I think she should have contacted the consultant on call.

Q. And spoken to that consultant, effectively briefed the consultant about Claire?

A. Yes, because it looks as though Claire was the most unwell child on the ward that day. But of course, we're talking about 1996 and we're talking about a regional teaching hospital. I don't know what the convention and practice was at that time. One of the things about it is that within such a hospital, you have quite a lot of supportive resources and you may feel the registrar

was, if you like, capable of picking up the strands. I think there's a lot of evidence to show that those registrars were very busy and really distracted from carrying on plans and review to an extent which couldn't be relied on. So I do think that Dr Steen should have seen Claire, spoken to Dr Webb, written in the notes, and then, if she wasn't on call, communicated with the on call consultant.

THE CHAIRMAN: There's lots of options and hypotheses and possibilities, but the one thing that does not appear to have happened at any point is a consultant to consultant conversation about Claire.

A. Yes, I think that is definitely really, in the circumstances, a major shortcoming.

MS ANYADIKE-DANES: And then one can move on to the discussions with Claire's family. If she had done that, should she have spoken to Claire's parents?

A. Oh yes, yes.

Q. What sort of thing should she have been telling them?

A. Well, she should have told the parents that Claire was significantly unwell in the views of the staff on the ward, that they had brought in another expert, Dr Webb, to assist, that it was considered that she was in coma of a degree and that she was being treated for non-convulsive status because that was thought to be

the cause of the condition by the team.
Q. What Dr Scott-Jupp had said in his report -- I think it's at 234-002-011. He considers that Claire's parents actually weren't appropriately informed either by the medical or nursing staff of the severity of Claire's condition. He says they should have been spoken to, whether by a registrar, consultant or a senior nurse, but the information that they should have had was that Claire was quite unwell, her diagnosis was still not entirely certain, further investigations might have been necessary and that there was a possibility that if she didn't improve a transfer to intensive care might be necessary. Would you disagree with any of that?
A. Not at all, no.
MR FORTUNE: Sir, without ducking the issue of Dr Steen's responsibility on the assumption she comes in, examines Claire and then speaks to the parents, what does Dr MacFaul say, bearing in mind that Dr Webb has examined Claire at about 5 o'clock and spoken to the mother? Is that not an opportunity when he should have outlined Claire's situation as he saw it? Does he expect Dr Steen to repeat all of that if she comes in later?
MS ANYADIKE-DANES: Well, I wonder if I could frame it in --
THE CHAIRMAN: Let me ask it this way. What should Dr Webb

have said to the parents when he saw Claire at about 5 o'clock-ish? Sorry, it was Mrs Roberts on her own at that point.

A. I think he should have given an indication that Claire was significantly unwell, that she had a brain disorder which had not been fully characterised and that his plan, in fact, was to do a CT scan the following day and that she was on a package of therapy which he expected to control her symptoms. That would be the minimum that he should have conveyed.

MS ANYADIKE-DANES: I think, in fairness to Dr Webb, how the point was put is that if he was aware that he was brought in to give a specialist view and that she was Dr Steen's patient, he may have wanted to give rather limited information and leave Dr Steen to give a fuller explanation. Of course, that would depend on whether Dr Steen had sufficient information to give a fuller explanation, but I think that's where the balance lay. So far as you're concerned, how does it work? Does the specialist give the specialist view or is he entitled to expect that the consultant who's responsible for the child gives the full view?

A. I think that the specialist called in should give the parents a summary of his conclusions and his treatment plan.

Q. As his own responsibility?
A. Yes.
Q. Irrespective of what the consultant is going to give as her responsibility?
A. Yes.
THE CHAIRMAN: Well, aren't there two things? First of all, it would look rather odd to the parents that this is a doctor who's come in at least twice, maybe three times to see their daughter, and hasn't explained to them what's wrong and so on. And I very much suspect that Mr and Mrs Roberts might be sitting listening to this and wondering, "Well, surely you don't stand on ceremony about who should have rung who between the consultants and who should have told us what". Nobody should have stood on ceremony. One of the consultants should have spoken to them to explain exactly what was going on with Claire in the most appropriate terms at that point.
A. I agree with that, yes.
THE CHAIRMAN: And that should have been a process which was going on through the day?
A. Yes, by somebody.
THE CHAIRMAN: And it doesn't even have to be the same person. It could be that nurses do it at one point, it could be that the registrar does it, it could be the

consultant does it?

A. Yes.

THE CHAIRMAN: But one thing that should never have happened is that they went home at some point soon after 9 o'clock without appreciating remotely what condition Claire was in or the risk she was at.

A. I understand that, yes.

THE CHAIRMAN: And that just should not have happened.

A. No.

THE CHAIRMAN: Thank you. Let's not stand too much on ceremony about who should have rung who.

MS ANYADIKE-DANES: One thing that Dr Scott-Jupp expressed a view on was in the most careful way possible, nonetheless the parents -- I think if it wasn't Dr Scott-Jupp, it might have been Dr Aronson -- that the parents should have had the opportunity to realise that Claire was sufficiently unwell that they might want to stay that evening. I think it was put in the way that one wouldn't want necessarily to frighten parents or make them feel guilty if they couldn't because their personal circumstances didn't permit them to do that, but at least to give them the information in such a way where, if that was possible, they could make that decision and stay there. He thought that that kind of information should have been provided to the parents.

Would you accept that?

A. Yes, I think they should have been made aware of how unwell and how ill Claire was, yes.

Q. During the day you said that it could be done by different people during the day. Is it everybody's responsibility who interacts with Claire and her treatment and the parents to make sure that the parents have some appreciation of what's being done to their daughter, why it's being done and what her condition is?

MR FORTUNE: Does "everybody" include the nurses?

MS ANYADIKE-DANES: Yes, I'm talking about the nurses.

A. Well, I think that there is an element of cross-communication that can occur. So the ideal is that the doctors managing her would do so. The nursing staff ideally have a named -- I don't know whether that was in place at the time, but I think in my own hospital in 1996 and in many others there was the concept of the "named nurse". That's the one that's taking the lead on your child, as it were.

Q. Yes.

A. So rather than, as has just been suggested, that you can't have all the nurses just being asked a little bit, it would be better for any communication to be channelled through the nurse that was particularly engaged with Claire at that time, the so-called named

nurse.

Q. That could, for example, be the nurse who's taking the hourly observations?

A. Yes.

THE CHAIRMAN: Another take on it is that a nurse or the lead nurse should nudge or suggest to the doctors that they need to tell the parents more?

A. Oh yes.

THE CHAIRMAN: Without necessarily doing that themselves, particularly in a complex case?

A. Yes, very much so. That is one of the things that nurses do all the time. They ask us to go back and say -- one of the things they say is that they haven't understood what you've told them, please go back and tell them again.

THE CHAIRMAN: Yes.

MS ANYADIKE-DANES: Even if they didn't want to take upon themselves the duty of explaining what might have been quite a complex emerging condition, are the nurses in a position to appreciate whether the parents at least understand that they've got a daughter who's really quite ill, that at least they could understand?

A. Yes, and of course Claire was having an unusual form of therapy with an infusion of midazolam, and that in itself, as well as the other anti-epileptic drugs that

she was on, was a measure of unusual therapy, and that should have been -- the parents should have been made aware of that.

Q. Thank you.

A. There is a counsel of perfection. It just occurred to me and perhaps it's not relevant. At the time in question -- and it's something we did struggle with was to what extent a parent should be informed that the drugs being prescribed and used on a child are off licence or off label. I say "struggled" because an awful lot of what we use in outpatients and so on has been off label or out of licence. So one wouldn't criticise the doctors at the time if they hadn't done that, but it is an issue.

Some hospitals produce a little printout that says, "There's your prescription", if you like. "We are giving this drug off label, that's why". It explains why. And the reason for doing that was, of course, when as an outpatient the parents would pick up a prescription, they would usually open the leaflet that was in there and they would say, "Not suitable for children". And when that happens, of course it causes problems, so it's better to anticipate that.

THE CHAIRMAN: Yes, okay.

MS ANYADIKE-DANES: Thank you.

MR FORTUNE: Sir, there has been no evidence about that particular aspect, that there should have been such a discussion.

THE CHAIRMAN: No.

MR FORTUNE: Indeed, none of the experts have criticised any of the clinicians for not giving that explanation, as far as I can recall. Dr Aronson dealt with the issue of off label, off licence, but it went no further than that.

THE CHAIRMAN: Yes. I don't think that Dr MacFaul is being critical because he introduced that comment that he was making by saying that this may be a counsel of perfection, so I think that's something short of being critical.

MR FORTUNE: Yes. We need to stay with real life.

THE CHAIRMAN: Well, Dr MacFaul isn't departing from real life, he's reminding us that there are different levels of standards. We generally shouldn't be critical and I shouldn't be critical of people who fall below perfection; there are other standards. So I'm not concerned.

MR FORTUNE: And I wasn't being critical of Dr MacFaul.

THE CHAIRMAN: I understand. I think it was suggested earlier that the parents -- this constant debate about how much you tell parents. Part of that, I assume,

doctor, is your assessment of how much information particular parents can take? Some can take more information than others, some understand more than others; is that correct?

A. Yes, that is true.

THE CHAIRMAN: There was at least one suggestion that it might have been better when the midazolam was added to the mix, that some explanation about that -- that this wasn't off licence, but it was a newer treatment or an innovative treatment.

A. I think that would be a reasonable step to take. As I said earlier, I think in my preamble, if we go back to the transcript, I said I wasn't being critical of the doctors at the time because it was a hot topic, if you like, for debate. Should they have been told that an innovative therapy was being used? That can cause nervousness. I think one would just say that you're giving the best treatment and the maximum treatment was being given to control Claire's problem, would have been a way of saying it.

THE CHAIRMAN: Okay, thank you.

MS ANYADIKE-DANES: I want to move on to the serum sodium result at 11.30 that evening.

THE CHAIRMAN: Well, if you're moving on, it's 1 o'clock, we're not going to get Dr MacFaul finished before lunch,

so let's break now for lunch. We should be able to finish Dr MacFaul this afternoon without taking a break. Thank you very much. 2 o'clock.

(1.00 pm)

(The Short Adjournment)

(2.00 pm)

MS ANYADIKE-DANES: Good afternoon.

Dr MacFaul, there are two points just to pick up from the session before lunch. I wonder if you could clarify them.

The first relates to the CT scan. When I had asked you about the CT scan, I read out to you what Professor Neville had said in his reports about the CT scan and you, I think, broadly agreed with that or at least accepted it.

The first of which was that he saw the lack of a CT scan as a major omission and he thought that a CT scan should have been carried out on the evening of the 21st. The reference for that is 232-002-004. Then he went on to say that it should have been carried out, at the latest, by the morning of 22 October, and the reference for that is 232-002-007, and that, in any event, it should have been carried out before the administration of any further anticonvulsant medication other than the rectal diazepam. When I put that to you,

you were in broad agreement with that.

The question is, though, whether you thought that the requirement for a CT scan was of such importance that it ought to have been arranged for the evening of her admission at some point.

A. I think it is difficult to envisage Claire's presentation on that evening in sufficient detail. She had obviously presented with an element of disturbed level of consciousness, from my reading of it. It wasn't clear immediately whether she had had a seizure and was in the recovery stage from it or whether she was just unwell. It was also known that Claire had some degree of learning disability and it is the case that communication in that situation may not be as clear. The parents would be able to give a clear advice on how much she was different from normal.

So what I'm saying is that I don't think it was so clear-cut to my reading of it, the presentation to a general paediatric team, that this is a child in sufficiently deep coma to justify pulling all the stops out. I concluded, and I think to some extent stand by that, that it was reasonable to observe for a period of time to see what happened, because in general paediatrics that's what we do: we observe the trajectory of the illness, which moves at different paces and it

goes higher and lower in different patients. That is part of the practice of general paediatrics.

In support of Professor Neville's view, however, would be the fact that she had focal neurological signs: there was asymmetry and there are what are called upper motor neurone signs with the upgoing plantar. And again you could argue that that was sufficient to indicate a scan. But as far as the doctors were concerned, it may be that she'd already had those because she was known to favour one side. That was in the history. And she may, as far as they knew, have had such signs as a long-standing feature.

It was on that background that I felt that I would distinguish the urgency of the scan from Professor Neville's view, and that I suppose is encompassing a general paediatric vision rather than the paediatric neurology vision. So that, I think, summarises my position.

Q. The other factor is that for a CT scan to be arranged that would have been done with the involvement of a consultant, so that would have required the registrar that evening to have contacted her consultant and had that organised. And that might add another layer to a consideration of: have we reached a stage where this is something that ought to happen tonight, as opposed to

perhaps on review by the daytime team?

A. Yes. In my report, I did say that to some extent there was an argument for involving a consultant at that time, but that would depend on the level of experience of the admitting registrar.

Q. Thank you very much. Then the other point to raise with you is one that you touched on a little bit when you talked about her learning difficulties. It was known that Claire had had epilepsy or she had had some form of seizure activity when she was quite small, a baby. They had never really got as far as, as far as her records show, the bottom of why she had it, but she came under the care of a paediatric neurologist at the Children's Hospital, Dr Elaine Hicks.

A. Yes.

Q. And you've probably seen her earlier notes and records relating to that period. And they knew that when she came in and they also knew, in broad terms, the treatment that she had had for it and also when, roughly, she had had her last episode, if I can put it in that way. The fact that that had happened and maybe also the fact that she did have learning difficulties, did that in any way make Claire more vulnerable perhaps than another child who didn't have that history to the sort of disturbances that you described earlier, perhaps

to the onset of SIADH or anything of that sort that could be working in her condition?

A. I don't think so, no. She had a long-standing problem, but I don't think it ... There was no structural lesion on the CT scan when it was done. There is some still ongoing debate about whether she had a cellular problem on the histology of the brain. But I don't think I've seen anything there that would lead me to conclude that she was more vulnerable to getting brain oedema than another child.

Q. Professor Neville's view -- and one sees that at 232-002-012 -- was that they had assumed that she had a subclinical seizure activity and, maybe influenced by her history, they simply stuck firmly to non-convulsive status as a diagnosis. His view was that that seemed to have stopped other avenues being pursued until it was almost too late.

A. I think that that applies to the 22nd.

Q. Sorry, I meant in relation to the 22nd.

A. My view on that I expressed in my report and it's based on my experience, and I would defer to Professor Neville, who's a much greater expert in that area than I am, and indeed taught me. My experience of non-convulsive status is that is usually occurs in children who have had poorly-controlled seizures over

a long time and it usually occurs in children who have had myoclonic seizures, which are a peculiar type of seizure, and that because of that Claire was not a particularly high or even moderate candidate for that condition because she hadn't had those seizures. There was some suggestion that as an infant she might have had infantile spasms. That's a condition that has myoclonic seizures, but it has a very characteristic EEG appearance. The term hypsarrhythmia comes from the description of a sea horse, and you have the appearance of a sea horse on the EEG. So they were looking for that pattern on the EEG when she was under Dr Elaine Hicks, and they did not find it.

So as a younger child she didn't appear to have the myoclonic syndrome. She appears to have had what are called tonic-clonic seizures, and furthermore they were well controlled, very well controlled. She was over therapy and was seizure-free for a number of years.

So for all these reasons I came to the conclusion that she was not likely to have non-convulsive status as a particularly significant risk.

Q. Thank you. Then I wonder if I can take you now to the events at 11.30.

MR FERNANDO: Sir, my learned friend raised a comment earlier in respect of the registrar seeking the approval

of a consultant. My understanding from Dr Sands' first witness statement was that it required the approval of a consultant neurologist. And I wonder whether that made a difference in respect of the evening of the 21st.

THE CHAIRMAN: The CT scan?

MR FERNANDO: Yes, the CT scan, sir.

A. Well, it places a higher hurdle in the process.

THE CHAIRMAN: You can see an argument for it being considered, but you're not critical of the fact that it wasn't done and every added element makes it a bit more unlikely that it was a requirement on Monday night?

A. That was my opinion.

THE CHAIRMAN: Yes, okay.

A. But I defer to Professor Neville's view in some ways.

MS ANYADIKE-DANES: Thank you. The events at 11.30. In fact, we can pull up the medical notes and records so that we're dealing with it. 090-022-056. There we see that the serum sodium level has come back. Those bloods were taken at 9.30. They were, as we understand it, primarily being taken for the phenytoin levels, but they also provided the opportunity to do serum sodium tests, which is what happened. So you've got the serum sodium level at 121, the phenytoin level at 23.4 and when that comes in, that note is being written up by Dr Stewart, who's quite a junior SHO.

In terms of the medication at that time, it's unclear whether they had started the intravenous phenytoin. The records seem to suggest that that might have happened at 11 o'clock. But then the evidence of Dr Stewart was that he thought he had received this record at about the time that he was going to administer the phenytoin, so the conjunction may not be entirely precise as to which order things went in.

Certainly the increase in the midazolam had occurred because that occurred by 9.30. She had had her sodium valproate. It's not clear whether she'd had a further infusion of that. And she had, round about that time, the cefotaxime and she'd also had some paracetamol, and the acyclovir had been started at 9.30. So all that has happened and Dr Stewart is now writing up these results and forming this view, preliminary view, because he has a query over it, hyponatraemia, and he queries whether it's fluid overload and low-sodium fluids and he also queries whether it's SIADH, either of which may be producing the hyponatraemia.

He also notes:

"Impression: query the need to increase the sodium content in the fluids."

And he contacts the registrar.

The question I wanted to raise with you is: in terms

of the fluid restriction, the upshot of his discussion with the registrar is that the fluids should be reduced to two-thirds of their present value, and that produces the rate of 41 ml per hour, and also to send the urine for osmolality tests.

What I wanted to ask you is: was that an appropriate, so far as you are concerned, response in terms of fluid management in all the circumstances at that time?

A. The plan to reduce the fluid? The plan was correct.

Q. Yes.

A. I agree with Dr Stewart that the sodium content of the fluid should have been increased. I appreciate that that step was not taken on the advice, as far as I understand it, from Dr Bartholome's evidence, given I think on the transcripts which I've read, but I'm relying on memory, to the fact that she wanted an urine osmolality done first. I would be critical of that. I think that the immediate step should have been to increase the sodium as well.

Q. Should she have taken it further and discussed Claire with her consultant?

A. I believe so, yes.

Q. Dr Scott-Jupp, just so that we have it, his view was that Dr Bartholome should have actually re-examined

Claire --

A. Oh yes.

Q. -- at that stage and a more severe fluid restriction should have been imposed. He considers that it might even have been appropriate to stop IV fluids completely and it would have been advisable to check the blood osmolality as well as the urine osmolality. The reference for that is 234-002-008, which we don't need to pull up.

Professor Neville's view was that he would have expected Dr Bartholome to have taken further action, including inducing diuresis by mannitol and ventilating Claire to reduce the intracranial pressure that he believed was present at that time. And the reference for that is 232-002-011. Can you comment on those experts' views?

A. Well, I've expressed in my report that I thought the registrar -- it was obligatory for her to see and record her assessment of Claire and also that she should have called a consultant. I think the next steps envisaged -- which are elective ventilation and mannitol -- would be indicated by her condition at this stage, certainly so. But I think that the step -- the process to doing that would probably have been via the consultant rather than Dr Bartholome doing that,

1 although there was an argument for her doing it.
2 I understand she was the paediatric neurology registrar
3 and that she was also a senior registrar, more
4 experienced than others, and she could and perhaps
5 should have initiated those steps herself.
6 Q. She herself was the sole registrar there covering,
7 I think, about 115 beds at the time.
8 A. Yes.
9 Q. So there may have been reasons why she wasn't able to
10 come and examine Claire. I think her evidence was that
11 she would have wanted to examine Claire and may even
12 have intended to do so, but in any event it doesn't seem
13 to have happened.
14 MR GREEN: Sir, may the doctor be invited to consider what
15 she actually said about the systemic pressures that she
16 was operating under in an effort to see whether, on
17 reflection of those pressures, he is prepared to cast
18 his comments more softly?
19 THE CHAIRMAN: I think if I can summarise it -- you'll
20 correct me if I'm wrong, Mr Green -- it's the fact that
21 she was the registrar in charge of 115 patients on wards
22 and A&E, which seemed to me to be overwhelming and
23 almost certain to cause problems. Not just on that
24 night, but potentially night after night.
25 A. Well, I agree, and I agree with the points raised,

I accept that, that she was under a lot of pressure, and there are lots of reasons why she didn't get involved. What I'm saying is that in terms of standards of practice to be reached -- and don't forget that my approach is from the governance point of view -- it was necessary for Claire to have been seen -- let me couch it in this way -- by a senior doctor at that time. If Dr Bartholome was so engaged -- and I understand that -- then that was a further indication to summon a consultant, given the underlying condition in Claire and given these findings, because more ready access to a consultant would have been a solution within that system of heavy workload and I have made reference in my report to this very heavy workload as being a factor to have been -- and I expected it to be brought up in some sort of governance process. But that's obviously separate from this discussion. Because it was clearly an unreasonable workload. So I accept that perhaps I'm being hard on Dr Bartholome. I'm just matching what was done with what should have been done and what should have been done was the involvement of a more senior doctor.

THE CHAIRMAN: So acknowledging the extreme pressure that Dr Bartholome might well have been under that night, she receives a calls at about 11.30, it alerts her to

a very, very low sodium reading --

A. Yes.

THE CHAIRMAN: -- and she discusses an alteration of the fluid regime.

A. Yes.

THE CHAIRMAN: She then wants to see Claire, but apparently can't.

A. Yes.

THE CHAIRMAN: Does that make it all the more necessary to bring in a consultant?

A. Yes.

MR GREEN: What she said is she should have contacted a consultant, she would normally document having contacted such a consultant, she hadn't documented it on this particular evening and, in terms, she couldn't say one way or another whether she had. It's a complete blank in her recollection.

THE CHAIRMAN: I think it's hard to avoid the conclusion that she didn't because when the consultants were later contacted, they both came in.

MR GREEN: I follow that point.

THE CHAIRMAN: I accept your point or, more importantly, I think perhaps the doctor accepts your point that there is some level of criticism of Dr Bartholome, but it's as much directed at the pressure she was placed under by

the way in which the Children's Hospital was organised at night as it is personal to her.

MR GREEN: Absolutely, and I raised it at this point because this seems to be a classic example of where the governance and clinical issues merge into one.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: Thank you very much.

There are three possibilities as to which consultant might have come in if a communication had been made: it could have been Dr Webb, who had been conducting or managing her treatment therapy previously and was the neurologist; it could have been the on-call paediatric consultant; or it could have been Dr Steen, whose patient Claire was. Do you have a view as to, if anybody was contacting a consultant at that time, which consultant should have been contacted?

A. I think probably in the hierarchy of things and -- it would have been the immediate involvement of the consultant paediatrician on call. Claire was under the consultant paediatrician and it would be then for that consultant paediatrician, having seen or updated himself or herself on Claire's condition, then to update with Dr Webb's opinion so that she might or he might have contacted Dr Webb.

Q. Yes. And if for any reason that on-call consultant

couldn't be reached, then do I understand what you're saying to be that it's Dr Webb you then go to?

A. He was on call, I understand, and yes, that would be my view.

Q. Thank you very much.

MR FORTUNE: Sir, without standing on ceremony, to use your words, if time is of the essence does the hierarchy actually come into play? Is it not who is best in all the circumstances?

A. If I may answer that? As far as I understand it at this point, Claire was much the same. She had deteriorated a bit over the evening, she wasn't stable -- let me underline that because of the features we've spoken about this morning -- but she wasn't, at that time, collapsing. If you had a child who was collapsing then clearly, yes, you would get hold of who you could immediately. Here, I would have expected an immediate consultation with a consultant about this.

Dr Stewart did the right thing, he contacted the senior registrar. The senior registrar wanted to do something more, but was distracted by a completely unreasonable workload from doing so. So we have a situation which means that something isn't done. That is part of the process that you're examining.

THE CHAIRMAN: Yes.

MS ANYADIKE-DANES: But I think the point was that if a consultant needs to be brought in or contacted at this stage, who, for Claire's condition, is the best consultant in terms of their expertise?

A. Well, this is a fluid management problem and the paediatricians -- and I think Dr Scott-Jupp said he thought the paediatricians should be capable of handling an electrolyte problem. My advice was that the paediatric neurologist should have advised on the underlying regime. Here we have a situation of an acutely developing hyponatraemia in a child with an encephalopathy. This is a very risky situation. Dr Stewart has beautifully encapsulated what needs to be done in terms of immediate treatment.

The next stage though -- of envisaging frusemide, mannitol, elective ventilation -- is either the paediatric neurologist on call in consultation with a consultant paediatrician, or a consultant paediatrician contacting intensivists, because the intensivists have an expertise in this area.

I agree with Professor Neville's actions as proposed. It was the time -- I think I may have said it in my report, but I'd have to go back -- to consider elective ventilation and these other steps to shrink the brain swelling.

Q. So it seems like -- I'm just trying to see if we can get a definitive answer. It may not be one of those things that --

THE CHAIRMAN: I'm taking it from that that, frankly, it doesn't matter whether you call the paediatrician or the paediatric neurologist, but you certainly bring in a consultant.

A. Yes.

MS ANYADIKE-DANES: Either could have managed the appropriate regime for her?

A. Yes. And probably consult with intensive care.

Q. Thank you.

THE CHAIRMAN: Unfortunately, this didn't happen, obviously, but if a consultant had been contacted about 11.30 and let's say arrived at about midnight, do you think it's pretty much inevitable that that would have led to Claire being transferred to intensive care?

A. That is a more difficult situation.

THE CHAIRMAN: So it wasn't even inevitable at that stage?

A. Well, I think it should have been, but you asked me what would have happened.

THE CHAIRMAN: Yes.

A. What might have happened would be that the steps that have been set out here, reducing the fluid volume and increasing the sodium content and waiting and seeing,

might have been the step taken. Because elective intubation -- that is giving a light anaesthetic and intubating and establishing on a ventilator -- are all pretty strenuous activities for a child to sustain. But it certainly should have been part of that discussion and forward plan. Whether it should have happened then -- and Professor Neville believes it should, and I would lean to support that view -- it is difficult to see what would have happened because I don't know what the opinion of the on-call paediatrician would have been, for example.

THE CHAIRMAN: Yes.

MS ANYADIKE-DANES: Thank you. I'd like to move on to Claire's arrest, which is what happens next. She suffers a respiratory arrest at 2.30. She is intubated then and she is transferred to paediatric intensive care. The parents are informed and they make their way to the hospital. Dr Steen is notified, she comes to the hospital, and Dr Webb is notified, and he comes to the hospital. It's not entirely clear whether the on-call paediatrician -- and I think you refer to that person as a shadowy character in the sense that nobody has actually pinned down whether there was one, and if there was, who it was. So those are the only people that we are aware of who were actually contacted about that

collapse.

So that happens and the parents come in. If we can keep up the notes that are made by Dr Steen and Dr Webb at the time. It's 090-022-057.

MR FORTUNE: Can I just remind my learned friend they're not the only people because, of course, Dr Clarke comes from PICU to assist Dr Bartholome?

MS ANYADIKE-DANES: Thank you very much.

So that's the note. You have looked at that before, at least the note from Dr Steen you have looked at before. I'd just like to ask you about that before I then ask you about the discussions with Claire's family. Just above the 3 am note there's:

"Fluids restricted to two-thirds. Obs otherwise stable."

And then that's in the light of the reciting of the results that Dr Stewart had written in his note. So far as I can recall, we've seen no lab report for that serum sodium test of 121. So it's to be presumed that if Dr Steen is writing that down there, it's because she's at least seen the entry by Dr Stewart where he recites those results, and also if she's looking at that she would have seen his view -- if we pull it up alongside for convenience, 090-022-056. There we are. She would have seen his view that you've just described as

beautifully encapsulating not only the likely problem, but a way forward for it.

A. Yes.

Q. When she is writing that note, is that anything that she should reflect in the note, the possibility that it is hyponatraemia caused in that way?

A. Yes, I think she should have. I know that in her summary later, in the autopsy request form, there is an appreciation of what was going on. Should she have written it there? Well, it was already recorded in the notes. The content of a note written in the context of this situation in the middle of the night tends to be variable and doesn't always summarise what is in the doctor's mind. The fact that fluid had been restricted is a response to Dr Stewart's response and, ideally, yes, she should have written it, but in practice it would be not unreasonable to see the note that she has made, other than the omission of the midazolam, which I think is a significant omission, and I don't know why that is the case.

Q. Even if she wasn't trying to summarise all that had been written before, if I can put it that way, and therefore have included it at that point, is it something that she should have at least thought about so that when she's forming her views, perhaps for discussion with Dr Webb,

and thinking that she's going to have to have some sort of discussion and explanation for the parents, that she's reflected on that possibility that what might have happened is actually the hyponatraemia resulted from fluid overload as a result of low-sodium fluids?

A. Yes. I mean, she has ordered mannitol, which is a way of shrinking the brain. She hasn't advised frusemide, which is a way of getting rid of water as well, which would have been part of the regime. She's considered doing urgent CT scan, she has a forward plan, and it may well have been in her mind, and certainly when Dr Webb enters later, that's top of the list.

Q. The reason I'm asking this is because when Dr Steen was giving her evidence, although she can't remember it, her thinking was that the hyponatraemia resulted from the SIADH and therefore was part of a chain of consequence, if I can put it that way, and that it wasn't the hyponatraemia per se resulting from fluid overload that had caused the cerebral oedema. In fact, you can see Dr Webb's note just immediately below hers:

"SIADH. Hyponatraemia, hypoosmolality, cerebral oedema."

That was the mechanism of the terminal cerebral oedema, if I can put it that way, whereas Dr Stewart has a different mechanism for that. He would have, if one

turns it into the same pattern, the administration of the low-sodium fluids, fluid overload, hyponatraemia developing, and as a result the cerebral oedema, which continues unabated until she cones. That's a possibility from his first line.

What I was asking you is: given that he's actually, in cryptic terms, set that out in the previous page, which she's had to look at to get the results, is that something she should have thought about to at least have a discussion of that sort with Dr Webb ahead of speaking to the parents?

A. Yes, I believe so, and whether she recorded it or not is the issue that we were discussing before. But yes, she should have considered how hyponatraemia could arise and, as we've been discussing, the mechanisms were well-known at the time to be a combination of inappropriate ADH and volume overload, water overload. Yes, she should have done and I think so should Dr Webb. We know from subsequent events that there doesn't appear to have been any consideration of the two factors which were combining to produce the hyponatraemia.

Q. Yes, Dr Webb's got the second limb of Dr Stewart's assessment, if I can put it that way, and there doesn't seem, as I'm hearing you say, to be evidence any of a consideration of the first limb.

A. No. Neither in the autopsy request form because there is no suggestion there that water overload might have contributed, nor in the subsequent events in reflection on what might have happened to Claire.

Q. And although it's not a very comfortable discussion to have with the parents at whichever stage you do it, but is not the potential significance of it that if it's caused -- and if I can call it Dr Stewart's first line -- like that, then that's a fluid management issue, and that does bring with it the possibility that her fluid management was inadequate?

A. Absolutely. The iatrogenic causation of hyponatraemia is documented in textbooks as a significant causation of hyponatraemia in acute encephalopathy.

Q. If you can help me with what you think in all the circumstances Dr Steen and/or Dr Webb should have been discussing with the parents. There are some periods of time when that might happen. There's probably a time just before she goes off and gets her CT scan before they see what happens, and then of course when the CT scan comes back, they're able to see what the position is, and there's a discussion around brainstem tests, the first one, and then the second one and the results of those. So there is quite a period of time in the early hours of the morning, stretching down into,

I think it's 6.25 in the early evening, when the second brainstem test is done. But without necessarily wanting to be too definite about hour by hour, when exactly it should have been happening, what is the information that you think that Dr Steen and/or Dr Webb ought to have been giving to the parents?

A. If I put myself in the position of meeting the parents at that point, which is possibly the easiest way to handle the question, I think I would explain that Claire has suffered brain swelling and that that has caused her to stop breathing and has damaged her brain irretrievably, that the brain has swollen from an underlying disease of the brain and the complications of that, which are a reduced sodium level, and that the reduced sodium level was due to the production of a higher amount of hormone, which reacts to acute brain illness, but also to volume overload, fluid overload from retention of water, resulting -- and I suppose one would have to say possibly in part from the intravenous infusion.

THE CHAIRMAN: Sorry, when you say, "I suppose one would have to say", that's --

A. It's a difficult -- one is always hesitant to lay blame on oneself, I think, and on the regime. It would have to be stated because if you're explaining the

hyponatraemia and you've properly conceived its mechanism, then you are considering the two main causes. One is fluid overload and the other is inappropriate ADH. There's only one way that the fluid overload could have occurred and that is by the fluid that had been administered.

MS ANYADIKE-DANES: What the parents actually recall being told from Dr Steen -- and one sees it at Mr Roberts' witness statement at 253/1, page 14. It's his answer to question 14(c). He is asked a series of questions as to who gave him the results of various things and then it says:

"Please describe any other discussion that Dr Steen and Dr Webb had with you at that time."

He says:

"Dr Steen explained that the virus from Claire's stomach had spread and travelled into Claire's brain and caused a build-up of fluid. I recall asking Dr Steen if it was possible for any type of surgery or to drill into Claire's skull to drain the fluid or relieve the pressure build-up. Dr Steen informed me it was not possible. I asked her if everything possible had been done for Claire and if anything else could have been done. Dr Steen informed me that everything possible had been done for Claire and nothing more could have been

done."

Apart from what you have just answered and your response to the chairman, can you comment on that particular explanation?

A. Well, it is one of the explanations. There was no reference in that discussion to the epilepsy being the cause of brain illness in Claire, which was what was being handled as the primary explanation, and the alternative explanation which had not received much attention, but had received some, was meningoencephalitis because Dr Webb had attempted to treat that with acyclovir.

But in terms of saying "everything possible had been done" is evading the issue because, actually, her management was not up to the standard of the time. The standard of the time, which we've gone over a number of times, is fluid restriction and adjustment of the sodium content of the intravenous fluid, and that should have happened, in my view, from, at the latest, around mid-afternoon. So in that sense, this was misleading.

Q. And nothing more could have been done if that refers back to the period of her treatment?

A. Well, I think that that is wrong.

Q. Thank you.

MR FORTUNE: Could we establish from Dr MacFaul whether at

this time -- and we're talking about the period before 6 o'clock in the morning when the first set of brainstem tests are carried out -- what it is that the consultant should be telling the parents? Is it, "This is the situation, we're managing that as best as we can", or, is it that and, "By the way, this is how we got here"? Because perhaps Dr MacFaul will accept that there is a time for reflection once everything has been considered fully by the consultant or, in this case, both consultants.

A. Well, I think in response to that, at the time that they were talking about what was being done then, I think it would be fair to say that by that time Claire was in intensive care and was being ventilated and had a CT scan. So in the sense that part of that question posed, everything possible was being done at that stage.

But the answer there, "had been done", is reflecting what had happened the day before. It doesn't seem that either here or later or during the entry into the records that we've just been rehearsing that Dr Steen or Dr Webb had appreciated the contribution that the failure to adopt the mechanisms of containment of brain swelling by fluid management -- it doesn't seem as though they reflected that this might have been causative.

That failure to reflect and consider what might have been done is then carried forward beyond this time to the autopsy request form. It may well be that the doctors just did not appreciate that form of treatment and, if so, I and others have criticised that. And in the context of them misunderstanding, they may have been explaining to their own satisfaction. I think I'd better stop at that point because I don't think there's any more to say on it, really.

THE CHAIRMAN: I think Mr Fortune's question was really directed at the timing of the explanation which was given to Mr and Mrs Roberts about, (a), what is happening now and, (b), what was happening before.

A. Yes.

THE CHAIRMAN: Do I understand your answer correctly to mean that, yes, there is no absolute right and wrong way of going through that, but you have to explain what's happening now.

A. Yes.

THE CHAIRMAN: The point at which you explain how this has come about is not necessarily quite so clear.

A. No. I think that's true.

THE CHAIRMAN: Okay.

A. Yes. There was something else I had considered, but it's gone out of my mind. It was a very difficult time.

At this point, I think both consultants had appreciated that, although the formalities of brainstem testing had to be done, that, in essence, Claire was irretrievable.

MS ANYADIKE-DANES: Perhaps we can now turn to the brainstem death form itself. That's 090-045-148. If we can pull up alongside that 090-022-058.

The particular note that I would like you to look at first is Dr Webb's entry. That's the entry at 6 am, "Brainstem death", and it's going to be evaluation 1. He recites matters. Then you see, literally three lines up from his last line, if we can just expand that:

"Under no sedating/paralysing medication."

I had put that line to the inquiry's expert pharmacologist as to whether that was an accurate thing to say at that time given what Claire had in her system, if I can put it that way, and the length or the half-life of the medication that she had in her system. His view is that that wasn't an accurate statement. Do you have a view?

A. Yes, I do, and I expressed it in my report, that this was not correct.

Q. Not correct?

A. It was not correct that she was under no sedating medication. The fact is that she was still having some effect of the sedating medication because the phenytoin

was likely to be at a significant level, exactly what -- but it has a long half-life. I would defer to the pharmacologist. The valproate is a sedating medication, both phenytoin -- and all anticonvulsants are, to a lesser or greater degree, particularly when first used.

So those two drugs -- I suspect valproate was still in the system, but again I'd need to defer to a pharmacologist and I am not absolutely certain when the last dose was given, but I suspect that it was present and couldn't be ruled out as being present, let me put it that way. Then the midazolam infusion had stopped some, perhaps three or four hours before, again uncertain. I suspect, given the loading dose, and given then the infusion, that there would still be some midazolam in Claire's system, but again I would need to defer to a pharmacologist to be sure.

So in essence, what I'm saying is that it was incorrect to state that she was under no sedating medication.

Q. I think actually her phenytoin levels had been taken.

MR FORTUNE: They were 23 at about 9.30.

THE CHAIRMAN: 23.4.

MS ANYADIKE-DANES: Yes, 23.4. 090-022-057 I think shows you that they were taken together. I think they were

19, if my memory serves me rightly, or thereabouts. There we are, 19.2.

MR FORTUNE: 090-031-101.

MS ANYADIKE-DANES: We have it here, it's up on the screen. 19.2 is what they were.

I had asked Dr Aronson, who's the inquiry's expert pharmacologist, about that, and he said even though that was slightly within range, in his view it was still too high and he would have preferred to have waited, deferred the first brainstem test and waited until the levels came down to 10 or below and then performed the first brainstem test. In any event, his view was that it wasn't accurate to include in the notes "under no sedating/paralysing medication".

A. I agree. She was under that because phenytoin has a long half-life and I'm confident that there would have been phenytoin in her system. What I'm not so confident about is the degree of midazolam that would still be remaining. That was where I would defer to a pharmacologist. And similarly, the valproate. They are all "sedating medications" to a greater or lesser degree, although in practice they're not so sedative, but they are still sedating medications by definition.

Q. When you say you're not so sure, in fact when Dr Aronson was thinking about it, if one assumes that they

literally stopped the infusion of midazolam at 3 o'clock -- it's unclear exactly when they stopped it. This note says, "Midazolam is no longer running". That's Dr Steen's note. And she's moved at some stage between 3 and 4. It's not clear whether they stopped it running before they moved her at some point or when she arrived at intensive care, but in any event, assuming it was 3 o'clock, he was unclear as to exactly how much would still be in her system. And Professor Neville thought that you might actually do a blood test to satisfy yourself about that.

A. Yes.

Q. Given that there is some uncertainty from the experts themselves without the benefit of further testing of exactly what was in her system and therefore what its effect was, am I understanding you to say that Dr Webb couldn't, with confidence, say that she had no sedating or paralysing medication?

A. Absolutely not because she would definitely have had phenytoin in her system because of its long half-life, as a minimum.

Q. Thank you. If we bring back up the brainstem death form at 090-045-148. The first of the questions relates to "Drugs/hypothermia". 1(c) is:

"Could other drugs affecting ventilation or level of

consciousness be responsible for the patient's condition?"

And the answer to that is "no". Both at 6 am and at 6.25 pm when the second test is done. Do you have a comment about that?

A. Yes, I do. I think that's an incorrect completion of the form and I've said so in my report.

THE CHAIRMAN: What's the effect of it, doctor? If that had been completed accurately in your view by the word "yes" being entered, would that have led to the deferral of the test?

A. In theory, yes. One should have deferred it even a couple of hours because then you could write on the form to be honest about it, and open, that yes, she still had it, and you could put an addendum that at this stage it is unlikely to contribute to the outcome of the test. I think that was probably true then as well and it would have been an indication to defer the first of these two. The second of the two, of course, some hours later is a system, it's a system to try to overcome these problems.

THE CHAIRMAN: What is the purpose of this question? What's the purpose of 1(c)?

A. It is, in a way, to make whoever's completing the form state what is or is not there and to consider whether or

not the outcome of the testing could be affected by those drugs.

THE CHAIRMAN: And as it happens, you don't think in Claire's case that was a possibility, but there may be other cases?

A. There may be other cases. In my personal opinion, specifically to Claire, did I think this would have affected the outcome of the brainstem test, the answer is, in my personal opinion, I don't think it would have done. But the point is I suppose it's inaccurately completed.

THE CHAIRMAN: Okay. Mr Fortune?

MR FORTUNE: Can we have Dr MacFaul's opinion on this? Because my learned friend read 1(c) incorrectly. According to the transcript, my learned friend read "been" as "be".

THE CHAIRMAN: B-E instead of B-E-E-N?

MR FORTUNE: Yes.

THE CHAIRMAN: There's a grammatical error in the question.

MR FORTUNE: If it's "be" it's one thing. If we import so that 1(c) reads:

"Could other drugs affecting ventilation or the level of consciousness have been responsible for the patient's condition?"

Then is "no" an appropriate answer in those

circumstances? It's a poorly drafted paragraph (c) as Dr MacFaul will no doubt acknowledge. How should it read?

THE CHAIRMAN: That's why I asked him what the reason for the question was in the first place.

MR FORTUNE: And you'll recall Dr Haynes on this point, sir.

THE CHAIRMAN: Yes.

A. I think it probably is "be responsible for the patient's condition at the time of testing". I suspect that's the aim of it. There are publications which give this because this is an intercollegiate -- I think this is the output of an intercollegiate working party and I would need to go back to see if the wording accurately reflects it. My interpretation is "at the time of testing".

THE CHAIRMAN: Right. And in that event, since Claire had been given anticonvulsants, which do have a depressive effect on the level of consciousness, the answer to the question, is it still "no" or is it "yes"?

A. "Yes." It should have been "yes" in my view.

MS ANYADIKE-DANES: If you think you're going to answer "yes" to them -- other than a "yes" to (e), for example, or a "yes" to 3(b) -- is a better thing to defer do that you can answer "no" or to answer "yes" with a very strong explanation as to the consequences of that added

to it?

A. Ideal practice would be to defer the test.

Q. Thank you. What do you do in the interim when you're deferring it? Are you just waiting or do you carry out any tests?

A. Well, you could do a blood test to assist in evaluating the impact that the drug might have. You obviously continue as far as supportive care in ventilating and maintaining homoeostasis as best you can. The maintenance of homoeostasis of a child in this situation is not easy.

Q. Can I ask you about (f)? In your view, is (f) correctly answered?

A. My reading of this --

Q. And it definitely says "be due".

A. Yes, "be due". Is now, here and now. Here, I suppose what is being considered is this is applicable to all situations -- is the child hypothyroid, for example? In other words, is there an endocrine or metabolic problem like hypoglycaemia, which can cause coma. So the answer is, you should have that in mind.

Q. And hyponatraemia?

A. Hyponatraemia -- well, that comes, I think -- is there nothing on electrolytes? That would be included -- yes, that's where the electrolyte business should come in,

yes.
Q. Yes. So is that an appropriate answer "no" in your view?
A. Well, that depends on the level at the time, and I can't recall exactly what the level was because the sequence of -- the timing of this test was done at ... We need to know what the levels were.
Q. Yes, we can just get that. It was 129, I believe. Let's see the reference, though. 090-057-207. Can we blow that up a little bit? There we are.
A. And the timing of the test?
Q. 6 o'clock, the first one.
A. Is it 129 or ... Is it that one? Ah, 6 o'clock, yes. It's 129.
Q. Yes.
A. I think the proper answer there would probably have to be, "Yes, there is a problem, because that is not in range". Having said that, it is unlikely, in my view, that a blood sodium of 129 would significantly affect the response to a brainstem testing process. But to be specific to that question, the answer is: it could have done.
Q. How important is it to ensure that these things are answered precisely accurately, if I can put it that way?
A. Well, it is a difficult situation because, as I've

already alluded to, a child -- and the same with an adult -- who has got to the state of brainstem coning starts to open a cascade of deranged electrolytes and other features as well. And to get absolutely perfect electrolytes before you complete a brainstem test would be very difficult. It should be attempted, but it's very difficult. A seriously out of range level, you would have to defer. But a 129, I think the answer on the form should have been, "Yes, there was", but then possibly either to defer it or to just carry on, but note it.

Q. Yes. Could you answer "yes" and then note the actual level --

A. Yes.

Q. -- which would give some indication?

A. Yes, yes. Because what it would show is that you have considered it and concluded that it's not responsible for the condition. Because in essence -- and it may be worthwhile if this is important to ask anaesthetists who do this much more often -- what their practice is. But I would have thought, in my own opinion, that 129 would not make me conclude that the response to the brainstem tests would be such that it would be an inaccurate test.

THE CHAIRMAN: But do I understand you correctly that the answer to 1(c) is a bit more serious?

A. Yes.
THE CHAIRMAN: And is part of the problem here not just the fact that the test went ahead at 6 am on this basis, which you think is questionable, at least, but that it raises questions about the level of understanding which Dr Steen and Dr Webb had at 6 o'clock or their level of recognition of what had brought about Claire's condition?
A. Yes, I think that would be fair to say. But obviously, more important, in terms of the governance hat which I'm wearing, that it was an inaccurate completion of the form.
THE CHAIRMAN: Thank you.
MS ANYADIKE-DANES: Then I wonder if you could go back to a point that you made, just for clarity. I think when I had taken you to the statement from Mr Roberts as to what he recalls Dr Steen telling him and his wife about Claire, you looked at also the note at 090-022-057 for Dr Steen's summary of matters. You expressed the view that the omission of midazolam was a significant omission from her summary, if I can put it that way. Why do you consider it to be significant?
A. Well, she was listing the medication that Claire was on, and that was not a complete record.
Q. And was the midazolam a sufficiently important part of

her regime to have required it to have been included?
A. I think so, yes. It can't have been very familiar to Dr Steen as a treatment.
THE CHAIRMAN: Just for the record, Dr Steen said in her evidence that if she'd got talking to Dr Webb earlier during the day, she would certainly have asked him about the drugs he was prescribing for Claire because they were well beyond her familiarity in the treatment of children.
A. Yes.
MS ANYADIKE-DANES: Just finally on that, because I've been asked about it, 090-022-057, if we can now pull it up. It's really a bit of clarification of something else you said. On the third line, when she's reciting that Claire was seen by Dr Webb, and then towards the end there's a query about the aetiology. So she is not quite sure either how Claire is being diagnosed as acute encephalopathy -- either she's not very sure or she's not certain that Dr Webb is very sure what the cause was. In any event, the query is there and they are both going to be there in intensive care. Apart from the possible discussion that you think they might have had about hyponatraemia and how that resulted, do you think she should have taken the opportunity to try and get from Dr Webb, if he knew it, his view as to how she had

developed the acute encephalopathy?
A. Yes.
Q. Was that important in your view?
A. Yes. I think she was making this note before Dr Webb appears on the scene.
Q. Yes, exactly. It's like an aide-memoire for her in a sense, that query, and that's why I'm asking you if you thought that was something that she should have picked up with Dr Webb when he does come --
A. Yes.
Q. -- and get his best explanation for that.
A. Yes, I do.
MS ANYADIKE-DANES: Mr Chairman, I don't have any more questions, but there may be some, and I wonder if I might do the rounds.
MR FORTUNE: Before my learned friend does the rounds, as she puts it, on the subject of discussions with the parents, I was waiting for my learned friend to ask Dr MacFaul about the contents of the document 090-028-088, which is the relative counselling record.
THE CHAIRMAN: Yes, let's round that off, thank you.
MS ANYADIKE-DANES: Thank you.
That's the description. You have dealt with that in your report. It's at 238-002-029. Maybe if you pull that up alongside, perhaps that would be the better way

to do it. I didn't ask you about it because in paragraph 138 you had referred to it as being a good record. I don't know if my learned friend has a particular point that he would like to ask you to address.

MR FORTUNE: I was merely drawing Dr MacFaul's attention to it because you had been referring to discussions between the parents and Dr Steen. These would have been two further discussions certainly in the presence of a nurse each time. And of course, there is certain information imparted to the parents before and after the first tests for brainstem death.

MS ANYADIKE-DANES: Yes. Dr MacFaul, I wonder if I can do it in this way. My learned friend Mr Fortune and also, I think, the chairman have asked you about certain information that might have been imparted at certain times during what must have been quite a difficult time, from some time past 4 o'clock up until 6.30 or so in the evening. What I was trying to seek from you is, at the end of it, what is the sum of the information that the parents should have understood about what happened to their daughter? Without necessarily asking you to go to each and every stage, what might they have been told at this stage and what might they have been told at that stage? But just to pick up on what my learned friend

has said, is it important that they're told certain things at certain stages, leaving aside the issue of the post-mortem, just in terms of what has happened to their daughter and how that happened? Are the timings important?

A. They are to the extent that there is a need to explain what is going on now. In other words, what is Claire's state here and now? And that is what's being explained there. How has she got there? Well, they're ascribing this to a virus. And why had she got into that state? Because of breathing difficulties, because of brain swelling, and we think the brain swelling is due to a virus or has been caused by a virus. I think it's a good nursing record. It's a record that a nurse has tried to put in the notes to reflect a conversation. So she is in a way making a synopsis of what has been said, and I thought, to that extent, it had served its purpose well. But in my next paragraph in my report I do say that I thought that the doctors should have recorded what they had said to the parents in terms of content and timing to a greater extent than they did.

Q. So that might have been a good nurse's note in terms of recording what she heard and trying to reflect that?

A. Yes.

Q. But that's a whole different issue from what the doctors

ought to have been telling the parents?
A. Yes.
THE CHAIRMAN: Sorry, doctor, I thought you took it a step further. I thought that what you meant was that that was a good nursing record, but of a rather inadequate explanation to the parents.
A. I think that is true. The nurses understood that the doctors have explained to the parents it had been caused by a virus, and that is what is reflected in Mr Roberts' recall of the stomach bug story.
THE CHAIRMAN: Thank you.
MS ANYADIKE-DANES: Sorry, Mr Chairman, I don't think I properly expressed myself.
THE CHAIRMAN: Don't worry, it's okay.
MS ANYADIKE-DANES: So what was told to the parents, to go back to something that you said before, was inadequate?
A. Yes.
Q. Thank you.
THE CHAIRMAN: Right. Shall I wait for a few minutes? Are there perhaps more questions?
MS ANYADIKE-DANES: I think there are, Mr Chairman.
THE CHAIRMAN: I'll just take a few minutes, doctor.
(3.15 pm)
(A short break)
(3.25 pm)

THE CHAIRMAN: Okay. What do we have?
MS ANYADIKE-DANES: Three points, Mr Chairman.
The first relates to the conversation between Dr Steen and Claire's parents. Dr Steen's view is, although she can't remember it, she thinks she would have mentioned low sodium. The parents say that that wasn't mentioned to them, but in any event that is her view. If she had mentioned low sodium as being a problem, does that satisfy the requirements in addition to what is also recorded? Does that satisfy the requirements of a proper explanation or not?
A. I think if she had explained that there was low sodium, I think the next point would be to say there was a low sodium because ...
Q. Right. And from what you had said before, that would lead into possibly having to explain that that was down to the way the fluids had been managed.
A. Partly so, and the other would be the syndrome of inappropriate ADH combined with the water overload.
Q. So it's a step along the way if she had said that?
A. It's a combination of the two.
THE CHAIRMAN: But to mention low sodium on its own, does that take things anywhere?
A. No. From the parents' point of view, if low sodium had been mentioned, it should have been accompanied by an

explanation, firstly, of how it had come about and, secondly, what effect it had had on the brain swelling.

THE CHAIRMAN: I think I should say for completeness, Dr Steen is quite accurately saying she doesn't remember the conversation, but her basis for suggesting that she mentioned low sodium was because that was what she thought would have alerted Mr and Mrs Roberts to hyponatraemia when they watched the local television documentary in 2004. Mr and Mrs Roberts say that isn't what alerted them at all. Even if she did say low sodium, it doesn't advance things unless it then leads into an explanation, which it is not suggested was given.

A. Yes.

MR FORTUNE: Having asked my learned friend to deal with this matter, I have suggested to my learned friend that it's day 3 of Dr Steen's evidence, it's on Wednesday 17 October. The transcript is at page 122 and the questioning starts at line 19. I understand that my learned friend and I may be looking at different page numbers. There we are.

MS ANYADIKE-DANES: I hope I summarised it reasonably fairly.

MR FORTUNE: If we go on to page 123, you may have noticed, sir, that Dr MacFaul does not use the word

"hyponatraemia" as being a word to be used with parents.

THE CHAIRMAN: That's right.

MR FORTUNE: Nor does Dr Steen in her explanation on the assumption that this is what she might have said.

THE CHAIRMAN: No, and I think that the evidence to date has been that if you're going to explain something to parents in this terrible situation, using a word like hyponatraemia is relatively uninformative because, like all of us, they need a more simple understanding, at that point at least, of what's happening.

A. Yes.

MR FORTUNE: In fact, you'll recall Professor Savage didn't use that term either.

THE CHAIRMAN: Yes.

MS ANYADIKE-DANES: Thank you.

Then I have two other questions. One goes back to a point that I had raised again with you, which is the reference to the omission of midazolam from Dr Steen's note. The only question is why you used the expression "significant" and it was wondered what was your explanation for that. You didn't just say it was an omission from her note, you said it was a significant omission, and I think that's the point that people want to understand: why you think it was significant.

A. Well, Claire had suffered a respiratory arrest, almost

certainly from brain swelling. But midazolam can cause respiratory arrest. It's rare, but it happens. That's why I felt that it was a significant omission.

Q. Thank you. Then the final point. I wonder if we can pull up 089-003-006. I'm going to ask for something to be pulled up alongside it. Can we pull up alongside it 096-018-111? You have seen part of this before. On the left-hand side, that is recording a meeting relating to certain questions that were put. Then, on the right-hand side, is the response that he receives from Nichola Rooney. The question relates to item 1, which starts:

"Was Claire's condition underestimated, ie were the doctors concentrating on a viral infection when a more serious illness was building, which required early diagnosis?"

Then it leads into the question of whether hyponatraemia was considered at this stage.

Then, if one sees the answer to it which comes at 1(c):

"Claire's condition was not underestimated as she was considered to be very unwell, with a diagnosis of non-convulsive status epilepticus and encephalitis/encephalopathy. Claire consequently received intensive medical intervention."

And their question is:

"Is that really a satisfactory answer to Mr Roberts' question?"

THE CHAIRMAN: Satisfactory in the sense of accurate or satisfactory in the --

MS ANYADIKE-DANES: Accurate and complete.

A. Well, it is an account that she had been recognised to be very unwell. That recognition, of course, was later in the day, probably from -- well, late morning, I should say. The diagnosis of non-convulsive status epilepticus was the working diagnosis. Encephalitis had been considered and treated with acyclovir. Encephalopathy was the underlying condition. That is also -- all of that is the truth. Claire consequently received -- that's consequently upon those diagnoses -- intensive medical intervention. That again is the truth because she did receive intensive therapy for status epilepsy in the sense that, as we've discussed, she was on several anticonvulsants, including one which I described in an unfortunate term, but was innovative in essence, and that is pretty intensive and I have explained that she was receiving level 1 intensive care. So that is the truth. I would leave it to others to determine whether it's the whole truth, but it is certainly the truth.

Q. The issue that they're getting at is, if they were proceeding upon those as differential diagnoses, had they not considered other diagnoses, which were serious and developing without attention? And I think if you lead that first question into the second, "Was hyponatraemia considered at that stage?", that's what I think Mr Roberts is really getting at, that there was something else that they could have addressed, they didn't address it, and all the time they were looking at those other differential diagnoses, that condition was developing, she was deteriorating and untreated for that potential condition.

A. Unless it is answered on the next page of the letter --

Q. Let's pull up the next page. That's 112. So the closest one gets to it is (d), which is:

"At the time of admission, Claire's sodium was only slightly below the normal serum level. At this stage, hyponatraemia as a complication of her illness was not considered as a major component."

One could then add "and never was" in terms of what's recorded for her.

A. Well, again, that is a statement of the truth at the time of admission, which is what is the entry point. Hyponatraemia was not, at that time, considered a major component. So that is again a statement of the truth.

Q. Yes. But I think it's not really addressing what Mr Roberts is asking you to help with, which is all those things may be the statement of the truth, but does it still mean that there was something more serious, namely a developing hyponatraemia that they had not correctly diagnosed and, therefore, had not treated?
A. Well, the fact of the case is that that is what happened. She developed hyponatraemia, it was not recognised through failure of frequent enough monitoring, and it was not treated until, or an attempt to treat it, until very late.
Q. Yes. I think what Mr Roberts is getting at is, when it was recognised -- it was certainly recognised in the notes by Dr Stewart --
A. Yes.
Q. -- who had a pattern for how that had happened. I think what Mr Roberts is wanting to know is: should they have explained any of that in much the same way as when I was asking you about the discussion between Dr Steen and the parents, and your view is that they should have referred to the low sodium, hyponatraemia, and the possibility that that had been caused maybe by SIADH, but maybe by the very fluid regime that had been administered to her. And that, I think, having heard your evidence about that, that is what Mr Roberts is getting at. Should

some of that explanation not have been reflected in this letter?

A. Absolutely, yes.

MR FORTUNE: If you look at paragraph 5(a), and perhaps you can bring up the next page of the letter so that Dr MacFaul can read the entire letter.

MS ANYADIKE-DANES: Yes:

"Claire was given fifth-normal saline fluid, which is the most common type of fluid to be administered in 1996. Treatment has now changed. Nowadays, Claire would be given smaller amounts of a different type of fluid following admission. It is not possible to say whether a change in the amount and type of fluids would have made any difference in Claire's case as she was very ill for other reasons."

MR FORTUNE: 8(a) may also assist.

MS ANYADIKE-DANES: "Hyponatraemia was not thought, at the time, to be a major contributor to Claire's condition. It is noted from the ..."

And then it goes on to deal with the post-mortem report:

"The presence of hyponatraemia was indicated in the clinical summary provided to the neuropathologist conducting the post-mortem."

Does that indicate there that hyponatraemia, if it

was indicated in the clinical summary, means it was something that was recognised and therefore that goes back to Mr Roberts' point: if they did recognise it, is that something that they were treating Claire for or had they not treated her adequately for that and were focusing on these other matters? That's actually what he was asking in terms of the completeness of this answer to his concern.

A. Well, in respect of 5(a), I have already addressed this question because I don't think -- although it was the most common type of fluid to be administered in 1996 in general paediatric practice, it was not appropriate in acute encephalopathy and I think we have mentioned that at some length. The next statement is "treatment has now changed". I believe it has not, and I have again addressed that issue. This is where I differ from Professor Young's view and I have explained that.

Hyponatraemia was not, at that time, thought to be a major contributor to Claire's condition. Well, it was listed on the autopsy request form as a significant finding. It was also recognised in the discharge letter from the intensive care unit. So the fact is that it was documented as a significant contributor. I believe that "the clinicians failed to appreciate" would be the most generous interpretation of the degree to which it

had contributed to her condition.

Q. In fact, we will be returning to this letter and the explanations during governance. But I think Mr Roberts was simply wanting, given that you were talking about fullness and completeness of explanations, to know whether you regarded this letter to him as being a full explanation of what had happened.

A. I don't, no.

Q. Thank you. One final point. 090-022-057. If you look in the margin of this note, you'll see the osmolality figure --

A. Yes.

Q. -- of 249. Then if you look at the first line of Dr Webb's note:

"SIADH, hyponatraemia, hypoosmolality."

As I understand it, the range, normal range, is 275 to 295. It would seem that Claire's result is outside that. Is there any connection to be made between that result and the hypoosmolality inclusion in that line by Dr Webb?

A. Yes, she was hypoosmolar. The osmolality as recorded is low, and one of the factors in maintaining homoeostasis, which is part of the therapy of acute encephalopathy is to try to get osmolality within the normal range, if not a little bit above the lower end of the normal range.

In fact, Milner & Hull, the little handbook which doctors carry round with them or at least study for membership says specifically in 1992 -- I think it's that document, it's in my report -- "maintain the osmolality at 300".

Q. So what is the significance of that figure so far as you understand it?

A. Well, one of the simplest ways to estimate the osmolality is roughly to double the blood sodium level. So it was 121, double that, it's 240. It's not far off. And so you always have to add the glucose on as well and a bit of potassium, but they're small figures. As a rough estimate of osmolality at any stage you simply double the sodium for a quick answer, unless you have a blood osmolality, which they have here. It is low. It's significantly low.

Q. And what does that mean in relation to her condition?

A. Water overload or syndrome of inappropriate ADH secretion.

THE CHAIRMAN: Doctor, thank you very much. It's been a long two days for you. We'll see you again in governance in December.

(The witness withdrew)

Timetabling discussion

Ladies and gentlemen, as you know, Dr MacFaul's

evidence was the only remaining evidence to hear this week. I'd already announced that we were not going to sit next week. We're going to resume on Wednesday the 28th with the evidence of Dr Webb who has recovered sufficiently to come and give evidence. That will start on Wednesday the 28th and run into the 29th. That first week, starting on Wednesday the 28th, we're going to sit on the Friday, so it'll be Wednesday to Friday. The following week, we'll resume and then go Monday to Thursday on 3 to 6 December, Monday to Thursday again on 10 to 13 December and, perhaps, Monday to Wednesday on 17th, 18th and 19th. We'll circulate a more detailed schedule over the next few days when we fit various witnesses into place, but we intend to start on Wednesday the 28th with Dr Webb straightaway and we'll leave any opening of the governance element until into the week of Monday the 3rd. But we'll put a date on that.

I think that sorts your problem out, your problem having arisen from our indication to everyone that we weren't sitting on the Monday and Tuesday.

MR FORTUNE: I'm very grateful for that, sir.

Insofar as those three days -- the Wednesday, Thursday and Friday are concerned -- is it envisaged that Dr Webb is likely to take most if not all of those

three days?

THE CHAIRMAN: I certainly hope not.

MR FORTUNE: Are we to expect any witness apart from Dr Webb during those three days whose statement or reports we've not yet had?

THE CHAIRMAN: No. In fact, what we're looking at -- and this is to be confirmed -- is Dr Webb on Wednesday into Thursday, and then we'll try to do doctors Herron and Mirakhur on Thursday and Friday. I'm not sure that there are any statements that you shouldn't now have.

MR FORTUNE: I was merely asking.

THE CHAIRMAN: I think there have been supplementary statements coming in from people like Professor Young and one or two others, but I think that the governance statements are out. The sole exception is that we're still hoping to get something from Professor Lucas, who reported, as you'll remember, in Adam's case, and his oral evidence was, by agreement, dispensed with because it turned out to be non-controversial.

MR FORTUNE: I'm grateful for that indication because, as you might imagine, Dr Steen has asked me more than once when she is likely to be asked to come and give evidence the second time.

THE CHAIRMAN: Yes. What I have is very much a draft schedule and I think if we -- it is likely to be in the

week of Monday the 3rd, perhaps on Thursday the 6th. But that's a perhaps. That's for Dr Steen herself. On this provisional schedule which I have, she would give evidence on Thursday the 6th, but that is subject to confirmation about the availability of various other witnesses who we've gone back to repeatedly about days and another day and then a different day and so on.

The important thing is that we're starting on Wednesday the 28th. That will be a Wednesday to Friday that week. And the following weeks are: Monday to Thursday, 3rd to 6th; Monday to Thursday, 10th to 13th; and hopefully finishing by Wednesday the 19th.

MS O'ROURKE: Sir, do you have any idea when Professor Neville will come? Our difficulty is in terms of arranging an appropriate person to be here. As you know, I am sort of filling in for Mr Sephton. Obviously it's gone beyond the timetable anticipated. He's obviously an important witness as far as Dr Webb is concerned. Obviously, one of us will have to be here on the 4th because Dr Scott-Jupp is coming back and he's obviously significant. Do we have an idea for Professor Neville? Is it going to be that week and, if so, when?

THE CHAIRMAN: At 1.30 I was told that we were trying to get Professor Neville in in the morning of Tuesday the 4th

and Dr Scott-Jupp in the afternoon.

MS O'ROURKE: That would be perfect if it's workable.

THE CHAIRMAN: It hasn't been confirmed. What we're trying to do is get Professor Neville and Dr Scott-Jupp finished on Tuesday the 4th and then the governance openings on the morning of Wednesday the 5th. We'll let you know as soon as we possibly can. Thank you very much. Until two weeks.

(3.48 pm)

(The hearing adjourned until
Wednesday 28 November 2012 at 10.00 am)

I N D E X