Wednesday, 11 September 2013

(10.00 am)

(Delay in proceedings)

(10.15 am)

THE CHAIRMAN: Good morning. Ms Anyadike-Danes?

MS ANYADIKE-DANES: Thank you, good morning. Could I please call Dr Crean?

DR PETER CREAN (called)

Questions from MS ANYADIKE-DANES

MS ANYADIKE-DANES: Thank you very much, doctor. You have made a number of statements in three cases that the inquiry has been looking at. You have a statement in relation to the governance part of Adam's case, a statement in Claire's case, two in relation to Lucy's case, and you have made three in relation to Raychel's case.

It is those three that we are going to consider more particularly today insofar as they relate to questions that we still have. Just for reference purposes, the first of those was made on 15 July 2005, the second on 18 June 2012 and the most recent on 29 May 2013. The series number is 38.

It's correct, isn't it, Dr Crean, that you have also given evidence on two previous occasions? You gave evidence in relation to the governance aspect of Adam on

20 June of last year and you gave evidence in Lucy's case on 4 June of this year; is that correct?

A. That's correct, yes.

Q. And you have provided us with your CV with, I think, an update to it. The reference to your CV is 306-087-001. And you'll have been taken to aspects of that CV before. Some parts of it are still relevant for the issues that we have today. If I may just, without going to it in detail, pick out some things for you to comment on.

Before I do that, though, are you adopting those three witness statements that you have provided in Raychel's case as your evidence here today, subject to anything further you want to say?

A. I am, yes.

Q. Thank you very much. So just to confirm, you've been a consultant since 1984?

A. That's right, yes.

Q. And you were clinical director in the surgical and critical care services in 2003 up to 2008; that's right, isn't it?

A. That's right, yes.

Q. The page to assist is 306-087-006. You were also chairman of the excellence and governance committee from 2003 to 2011.

A. Yes, that's right.

Q. And on the Northern Ireland working group on hyponatraemia in children that produced the guidelines, that took you from 2001 to 2002. That's correct, isn't it?

A. Yes, that's correct, yes.

Q. You have been a member of the CMO's special advisory committee for paediatrics from 2000 to 2005.

A. Yes.

Q. It's quite a prestigious list of your appointments. You were the president of the Association of Paediatric Anaesthetists of Great Britain and Ireland from 2005 to 2007.

A. Yes, that's correct.

Q. And the Northern Ireland regional paediatric fluid therapy working group in 2006.

A. Yes.

Q. And bringing us closer to date, you were a professional adviser to the RQIA review team in 2010, so it says in the report.

A. Yes, that's right, yes.

Q. And you are currently chair for the NICE guidelines on IV fluid therapy in children as of April of this year.

A. Yes. I was just appointed a few months ago for that position.

Q. Sorry?

A. I was just appointed a few months ago for that position, yes.

Q. All of that spans, in one way or another, the periods that are of particular interest to us.

A. Okay.

Q. And just for completeness, though, you're also on the education committee; isn't that right? You were a college tutor in anaesthetics in the Royal from 1992 to 1998, and you were a member of the anaesthetic education subcommittee from 1986 to 1998.

A. Yes.

Q. So in that early phase, when one was talking, for the purposes of Adam and Claire, as to what people might have known about hyponatraemia, you were involved in education and training at the hospital?

A. Yes, it was overseeing the trainees, really.

Q. Thank you very much. I wonder if I might ask you to clarify this point in relation to that part of your CV: what was the excellence and governance committee concerned with?

A. Just what it says: the excellence and governance within the hospital. It could be incident reporting. We did oversee the incident reporting. We would have the excellence and governance committee and I would chair that every three months, and that would feed into the

directorate as well. So you'd be looking at all aspects of education and training, incident reporting, all those sorts of things. The sort of quality things within the --

Q. And over what sort of area? Just paediatrics or just anaesthesia?

A. No, it was really just within the Children's Hospital.

Q. Within the Children's Hospital?

A. Yes.

THE CHAIRMAN: This would have been at the time, doctor, when governance really took off?

A. Yes, it had really just started.

THE CHAIRMAN: The general picture I've got is that it was picking up from the late 1990s into the early 2000s. But if you chaired this committee from 2003 to 2011, that's when things changed more rapidly at a governance level?

A. Yes, I think so.

MS ANYADIKE-DANES: So that's the post department guideline era, and so if there are issues to do with what the Children's Hospital might have been doing, was doing, and so forth in relation to standards and quality, that would be something within your remit?

A. That's right, yes.

Q. How did you get the information that you considered as

part of surveying and maintaining standards?

A. We had different people on the committee who had their own brief, who would be looking after particular aspects of what the committee was about.

Q. Could you possibly give us an example?

A. Do you know, I ... There was one person, for example, who would give a report, for example, on complaints. So they would be able to identify the number of complaints the Children's Hospital had received over a three-month period and how the complaints had been responded to, and any learning from those that could be shared and developed.

Q. So you would have people that would provide specialist input for you on specialist areas that they were looking after those?

A. That's right, yes.

Q. But was there a system whereby your committee could be informed of, say, the results of clinical reviews, of audits? Could it come to you in that way?

A. Do you know, I just can't remember right now that sort of detail. I just can't remember. I don't believe there was someone ... The audits that were done were of twofold in some ways. You had people that would just carry out an audit because they were interested in the audit and then -- and you may not have known about

those. But then we had audits that were, if you like, referred to the audit department so they were recognised audits that the audit department would assist with.

So I would probably have known about those types of audits, but I may not have known about, if you like, personal audits that people may have been carrying out and --

Q. Yes, I'm actually more interested in how you would have known. For example Dr Taylor, he chairs an audit committee, and in fact he would see all those in relation to deaths. So if in the course of doing that he's able to see or his committee can see trends or are worried about trends because he can see the way things are happening in a particular area, how would that feed its way into your committee so that your committee can see, from the point of view of maintaining appropriate standards, what perhaps ought to be done? How would that work?

A. It depends, as I said, how that audit was ... Who knew about that audit. If it was a personal audit that someone was doing, maybe the committee that I was chairing every three months -- we may not have known about that, if you know what I'm saying. If that had been a formal audit and it had been proposed to the audit committee that this was going to be -- I mean, the

hospital audit committee within the trust, then that would be a formal audit process and I would most likely have got a report back on that.

My problem is remembering exactly when those processes were. I know the way it is now.

THE CHAIRMAN: Don't worry about the exact scheme of it. But would I be right in thinking there's probably two ways that the committee works: one is the members of the committee would themselves identify issues which they thought were worth reviewing, like how the complaint process is working --

A. Yes.

THE CHAIRMAN: -- and another one is if your colleagues in the Children's Hospital bring issues to you because they've spotted some trend emerging and they have concerns?

A. It was broader than that, really. You could have had complaints, you could have had incident reports and a review of those. We could have had educational issues. We had a whole spectrum of things that would be brought to the committee. I wish I had an agenda here just to remind me exactly what we do.

MS ANYADIKE-DANES: It may be that that's something you can provide us with after you have given your evidence. The real issue is, if you're sitting there as the chairman,

as you were up until 2011, of a committee dealing with excellence and governance, what I'm particularly interested in is how you get your information so that you know the things that are supposed to cross your radar so that you can have an appropriate oversight of them and input into something to either maintain the standard or to suggest how the standard can be raised. That's the particular area.

So I can understand how things can happen in an ad hoc way in the way that you've discussed, but I'm more interested in what the systems were so that you would routinely be advised of certain sorts of things.

A. Well, if you ... I would probably have had a list of the audits that were being carried out and I guess if anyone had major concerns about -- it may have just been a list, this and this and this, A, B, C, D, E, I may not have had the full audit report, but I would have hoped, I guess, that if anyone had serious concerns about what the audit was showing, they would have come and let me know about that.

Q. And is that committee, so far as you're aware, still in existence?

A. Yes, it is.

Q. Do you know who the current chairman is?

A. It's Dr Aideen Keaney, I believe.

Q. In the course of your time, because you span quite a lengthy time for the purposes of this inquiry, 2003 to 2011, did any concerns come to you that are relevant for the purposes of this inquiry, which is to do with fluid management, record keeping, that sort of thing?

A. Um ... Okay, I suppose some of these things may have been related to myself, actually, because what I ... Whenever the NPSA alert came out in 2007, I actually wrote the policy for the trust about fluid management at that time. And I helped to devise a new fluid balance chart for children as well, which took, actually, quite a while. It maybe took about a year or so to get that organised so that everyone was happy with that.

So I actually did audits on the fluid balance chart, how it was being filled in, how appropriate the prescription was, and we did several audits on that. We did have concerns, actually, because we embarked on a pretty powerful, I think, educational programme for the staff and I think one of the later audits showed that the quality as to how the form was actually being filled in had actually fallen off a bit. So we used that to go back to the staff and say, "Look, improvements need to be made here. This is a safety issue and we need to improve upon that", and the final audit that I was involved with anyway showed that there

had been an improvement.

Q. So is that how your committee worked? You would have a concern or a concern would be brought to your attention, you would examine it, you would examine that in relation to a standard, see how it lay with that standard, and if improvements were made, identify that and then re-examine it to see whether those improvements had been put into effect. Is that how your committee worked?

A. Yes, that would be one of the ways it worked in regard to audit.

Q. And did it issue reports?

A. Yes, there was. We had minutes of the meeting and that was fed up into the organisation. So it wasn't just kept with us, it was fed up.

Q. Thank you. Then another point that you had identified in your CV, which is the member of the SAC paediatrics from 2000 to 2005. The remit of all those CMO committees can be found at 320-110-001.

Perhaps an important area, and we'll come on to it when we look at how the guidelines finally emerge, is that the remit of this includes advising the department through the CMO, whose committees these are, on strategic policy, and presumably planning issues in relation to that policy and then commenting upon the quality of the service, particularly in relation to

quality standards. Some of that might encompass raising concerns as to the level of knowledge and the adequacy of the practice in relation to paediatric IV fluids or fluid management. That's something that could come within this committee.

A. Possibly. I don't ever remember getting down to things like that on the committee. It was usually due to manpower. I remember paediatric gastroenterology being a big thing because we didn't have one in the Province for quite a while. Those are the sorts of things I remember being discussed most of all.

Q. It does get raised at the committee. The CMO's guidelines were raised at the committee --

A. It did, yes.

Q. -- so it was clearly a relevant thing once those guidelines had emerged to discuss at the committee.

A. Yes.

Q. So the point I'm putting to you is: if the guidelines are relevant to discuss at the committee, the need to have them might be a relevant thing to discuss at the committee.

A. No, I can't disagree with you there.

Q. Thank you. There might be an issue later on when we go through what happened as to why that didn't come to the attention of the committee or why it wasn't raised

in the committee.

But if we then move on to the cause of Raychel's death. When did you first learn that Raychel was to be transferred from Altnagelvin to the Children's Hospital?

A. My memory of this is practically non-existent now, I'm afraid. But going through the notes and having read Dr Nesbitt's transcript as well, I think what has happened is that when she became very unwell early on the Saturday morning, and he was in discussion with the neurosurgeons at that time, he contacted the on-call anaesthetist in the Children's Hospital, and from what he says that would have been Dr Chisakuta.

So I must have been working on the Saturday and Sunday, so I think I would have taken over from him about 9 o'clock in the morning. So he must have phoned me some time after 9 o'clock to discuss that with me. I think he says that he arrived -- there's somewhere that he arrived with Raychel about 12.30, just around midday.

Q. When you said "phoned you to discuss", do you mean that you'd had a discussion with Dr Nesbitt before Raychel arrived?

A. I'm assuming that. That's normally what would happen. People just wouldn't arrive without some form of discussion having taken place.

Q. And so do you know what you would have known about her before she actually arrived?

A. I'm ...

THE CHAIRMAN: Let's differentiate, doctor, in this run of evidence between what you remember, which I think from your introductory remarks is very limited, and what you would normally expect to happen in this type of situation. Okay?

A. Normally, what happens is the referring doctor -- and it's often a consultant -- would phone you up and let you know about an ill child, what the status of the child is and what the concerns would be. And I would check with them has the child been adequately resuscitated and stabilised, what stage are they at, can they phone us before they leave so we know generally what time they'd be arriving at because we have other children on the ward as well. It's just a general thing, really.

MS ANYADIKE-DANES: If you'd known there had been an earlier discussion with the neurosurgeons looking at a CT scan to see whether any treatment, for example, might be offered, if you'd known that, would it have been your practice to have any kind of discussion with those surgeons?

A. Well, if they were planning to do an operation, for

example, when a child arrives, they would have contacted us. What normally happened was that when the neurosurgeons were contacted, they would then phone us as well to say, "There's a kid in Altnagelvin coming down, very unwell. This is the surgical problem and we'll need access to theatre soon after we arrive in Belfast to try and alleviate the problem". So there would be input from the surgical service who wants the child to come down and also from the referring hospital as well.

Q. I appreciate that you don't remember the details of her case. You would presumably have looked at her medical notes and records at some point when she was transferred.

A. Well, we've been looking at this, actually, the last few days, and what we got, I think, from Altnagelvin was the transfer letter and the transfer referral sheet, the transfer record sheet, a paediatric assessment sheet and a summary care plan. I don't think we actually got the notes from Altnagelvin. So the medical notes, I don't think, were actually sent down with her. So really, all we were doing was working with the transfer summary from the doctors there.

Q. Did you ask for them?

A. I am sorry?

Q. Did you ask for her medical notes?

A. I honestly can't remember.

Q. Well, I recall -- and I'm sure you do -- that when Lucy was transferred in a moribund state from the Erne, one of your concerns was that you did not have her medical notes and records and you asked for them and ultimately they were faxed to you. Would you not have wanted to see Raychel's?

A. I'm sure we would have wanted to see Raychel's. I do know that there was also a fax sent down later in the day as well -- there's a record of that as well -- but it was pretty incomplete, there wasn't very much on the fax. What the fax showed when I looked at it on the inquiry website was an electrolyte result -- two electrolyte results where the sodium was shown to be 118 and 119. 119. And I think the last fluid prescription sheet showing the prescription of fifth-normal saline and one of normal saline.

Q. Yes, just to make sure we're talking about the same thing, I wonder if we could pull up 063-005-010 and then the next page?

A. Yes, that's the transfer letter.

Q. Yes. Is this what you mean by a fax was sent? There's actually a third page; we'll come to that in a minute. But is this the fax that you mean was sent over?

A. No, that would have been the written transfer letter. That was written by Dr Bernie Trainor.
Q. It was. It's quite a detailed one, isn't it, certainly if you compare it with what came over with Lucy?
A. Yes.
Q. And you can see the history that's given on the first page. You see the number of her vomits, six to seven times during the day, no diarrhoea. And then you see over the next page that her deterioration -- 3 o'clock, the seizure was 15 minutes and so forth. Then you see her electrolyte results down there at the bottom. If we go over to the next page, you can see that she requires ventilation, fluids are changed, initially subarachnoid haemorrhage found with evidence of increased intracranial pressure, transferred, and so on.
A. Yes.
Q. So that's quite a full letter, isn't it?
A. Yes. The thrust of the letter, though, is pointing towards an acute neurosurgical problem, I think.
Q. Yes.
A. And that's what -- I mean, I can understand the concern with this at the time and the need to get her down to a neurosurgeon as quickly as possible. And that's --
Q. Yes. From your point of view in terms of -- she now comes into your care, you're her named consultant.

A. Sorry, can I correct you there? I was not her named consultant.
Q. Ah.
A. Dr Hanrahan would have been the consultant overseeing her care. We went through this, I think, in some detail the last time I was here -- and Dr MacFaul did allude to this as well -- that there were two consultants working together in the intensive care unit. You'd have the anaesthetist and either a physician or a surgeon, both working together, and it would usually be the physician or surgeon who would do the diagnostic care of a child in the intensive care unit. And it would be someone like me doing the day-to-day working, the stabilisation of that patient.
Q. So who did the diagnostic care in relation to Raychel?
A. As far as I'm concerned, it would have been Dr Hanrahan, because she came in with basically neurological collapse and I'm not a neurologist; I would have had to take a lead from him as to how he was going to investigate this collapse.
Q. But you're the clinician who is named as her clinician on the post-mortem report, which you have seen.
A. Yes, I know, and --
Q. Sorry, and you're also the clinician who gave evidence in the inquest.

A. Yes. My name, if you remember, was on the yellow flimsy on all children that came into the intensive care unit, whether I was there or not. I think we had explained previously that --
Q. You have. It's just that it seemed that you might have had slightly more to do with Raychel. Would you accept that you at least had joint care of Raychel with Dr Hanrahan?
A. Yes, we would have had joint care, but I ... For a child like her coming in, there could have been many, many causes of a coma like that, and I would not have really had the knowledge to be able to investigate properly.
Q. But you would be trying to investigate and trying to see what was the cause?
A. I would be assisting in that.
Q. That's why I'm asking you, if that's what you're trying to do, if you didn't have them, why didn't you call for her medical notes and records from Altnagelvin in the way that you did in relation to Lucy?
A. I think it became pretty clear to us at the time that the acute collapse was so bad that brainstem death had already occurred when she arrived with us. So that's the situation we were there at the time. And I think it was also clear that with a sodium level of 118 --

I think it was at the time -- that that was the most likely cause of the brain swelling that had happened. So I think that those two things had gone together.
Q. Yes, well then, either independently of Dr Hanrahan or with Dr Hanrahan, did you not seek to find out how she had got into that state?
A. Well, an acute electrolyte problem like that could happen with, I suppose, a fundamental endocrine problem. But the most likely cause was that whilst she was receiving IV fluids, she developed electrolyte imbalances. She had a low sodium, her magnesium was low and her potassium was low as well. And I just think that we at the time thought it was something to do with the fluids. But we didn't investigate anything further than that at the time.
Q. Did you look at the CT scans with Dr Hanrahan?
A. Again, I can't remember if I looked at the CT scans or not. I've read the reports of the CT scans. I'm sure we both looked at the CT scans at the time.
Q. Would you have discussed her treatment at Altnagelvin with Dr Nesbitt when he came over with her?
A. Again, I can't remember, but if we go back to the transfer letter, and I read what Dr Nesbitt had said, I think that in Altnagelvin when they were bringing her round to Belfast, they were thinking that this child had

a neurosurgical problem. I think he had talked about a brain empyema, a collection of pus in the brain, so I think that is what he was thinking and that is then what our line of thinking would have been as well at the time.

Q. If I can just be clear on that because there are some differences of views as to what was the collective thoughts about what the CT scans were showing before she left. Is this something that you think, having read the various documents on this case, was being discussed or is this part of what you might recall?

A. No, it's only what I'm thinking from what I've read, that's all.

Q. I understand. In any event, you seem to have reached the view, at least as expressed in your witness statements to the inquiry, that the problem was actually caused by a fall in her serum sodium levels, and that is related to the fact that she had received Solution No. 18 post-operatively.

A. No, it's not that she had received Solution No. 18, it was --

Q. Sorry, let me pull it up.

A. -- related to her intravenous fluids.

Q. Well, that was her intravenous fluid.

A. It's about her ... It's more complicated than just one

single fluid.

Q. Let me pull up the witness statement and maybe you can help me with it. It's 038/2, page 4.

THE CHAIRMAN: Your point, doctor, is it's too simplistic to say this is just Solution No. 18?

A. Yes. I just want to tell you something. I'd used Solution No. 18 for over 20 years at that stage and if it's used appropriately, then I didn't think it was a bad solution to use. It was when it was used inappropriately, it could do harm. But then, anything can do harm. Driving your car the wrong way can do harm, any medication can do harm if it's used inappropriately. People need to have the knowledge and background to do -- any medicines that you give, any fluids that you give need to be used appropriately.

MS ANYADIKE-DANES: I think we are talking about an inappropriate use of it, not just its use per se. If you look at your answers to (a) and look at your answers to (d).

So at (a) you note she had been vomiting after the operation. Then she receives the fluid post-operatively, her serum sodium fell from a pre-operative value of 137 to a value of 118, and you say there was no other apparent cause for her collapse.

What did you think was the cause of her collapse

that you say there's no other apparent one?

A. Sorry, I'm ...

Q. Just look at (a).

A. I think it was just the fact that her sodium level was 118. It was a very, very low level of sodium.

Q. No, sorry, that wasn't actually quite the question. The question came from your statement. You said that:

"The most likely cause of her cerebral oedema was a rapid fall in serum sodium."

We see that above. That's your statement. So we ask you:

"What factors led you to the conclusion that that was the most likely cause of her cerebral oedema?"

And this is the answer that you give in relation to that:

"What was the cause of the rapid fall? She had been vomiting after her operation, she received one-fifth normal saline post-operatively."

That seems to be your answer to that question. That's why I was asking about it.

A. The problem -- I think the problem with a lot of these things when you're trying to fill them in is that you mix in things that you knew at the time, that you know afterwards, you've been to her inquest, you've seen expert reports as well, and it's actually very, very

hard to discriminate that timeline of things that have happened all the way through. It's only recently when I was looking back that I realised we actually didn't have her fluid balance notes whenever she came into the hospital, into the Children's Hospital at that time.

THE CHAIRMAN: Okay.

A. So I can't actually remember what my immediate concerns might have been then. I'm not trying to fudge the issue. I'm just trying to be truthful.

THE CHAIRMAN: You're not the only one, doctor, who has a problem distinguishing between what you knew in June 2001 and what you know by an accumulation of knowledge in September 2013.

A. Thank you. Might I say something at this moment? Whenever Raychel came in, her mum and dad came down with her and they would have had some hope that there was hope that she may survive this. We were in a position that when she came down to us that it became clear to us very quickly that that wasn't going to be the case. And I have to say that I think the main thrust of what we were doing at that time was to take the family through a terrible journey. Raychel was lying on a bed, she was connected to a ventilator, she was warm, they could feel her hands being warm, and we had to take them from that situation to try and bring them through the

concepts of brainstem death to the next day, where we were telling them that we had to turn the ventilator off.

So I think that that was the -- that's really what we were trying to do then.

MS ANYADIKE-DANES: I understand that and I'm going to ask you something about that. But at the moment I'm actually trying to see if you can help us with what you thought was the principal cause of the development of her cerebral oedema. The closest thing in time we have to your statement, from you, if I can put it that way, to the event is a record that the coroner makes of a telephone conversation with you. That's on 11 October 2001. Raychel, of course, dies in June 2001.

A. Yes.

Q. We can pull that up. It's 012-052c-275. Actually, you're really contacting, so it would appear, the coroner to see if it was permissible for you to speak to the parents, who wanted to speak to you again. You had already, of course, spoken to them at the time.

A. Yes.

Q. And he records you as saying that there was mismanagement of this case in the Altnagelvin Hospital, she was admitted to have her appendix out, but in fact the appendix was normal:

"The fluid balance was the key to why her condition deteriorated."

And he's noted "dilutional hyponatraemia". So leaving aside what you may have learnt along the way when you provided your witness statements for the inquiry, it would seem that at a fairly early stage you'd formed the view that the problem here was the management of her fluids.

A. Yes, it would appear so from there.

Q. And if any management of her fluids to have been significant in her demise was going to be at Altnagelvin?

A. Yes.

Q. You had just touched on something that I wanted to take you to as well, which is you mentioned that the family had some sort of hope that Raychel, having been brought to the Children's Hospital, that perhaps something might be done. Maybe they thought some sort of surgical intervention could produce something or some other treatment that you, as a sort of specialist centre, might be able to offer. That was apparent to you, that they had some sort of hope?

A. I can't remember. It's just what I've read on the inquiry website.

Q. Okay. When Dr Nesbitt gave evidence to say that one of

the reasons he transferred or sought to have Raychel transferred to the Children's Hospital was, even though things looked pretty bleak -- and in fact some of the clinicians thought there was no coming back from the condition she was in in Altnagelvin -- you never really give up hope on a child and he then specifically said he has seen children come back.

From your point of view, was it clear to you that there wasn't any coming back for Raychel from the condition you saw her in?

A. When we examined her, the situation at that stage was irretrievable.

Q. Is that something that you were able to form out of your specialist knowledge and experience or is that something that you would expect a consultant paediatrician or a consultant paediatric anaesthetist to be able to appreciate?

A. I think that's very difficult for people in district general hospitals to deal with. I think that children who have deteriorated the way Raychel did would nearly always be transferred to the Children's Hospital, even if the clinician's feeling was there was really no hope. I don't see any other way of doing it.

THE CHAIRMAN: I just want to get this clear, doctor. That's something you wouldn't necessarily discourage

because, even if 99 times out of 100, or 9 times out of 10, the result is the same, there may be occasionally a chance that something might be done?

A. Yes. There's that, and also from the family's point of view as well, chairman, that if a family's been managed in a hospital and the child becomes very ill, at least if they are seen -- we may not be able to offer anything more, but at least if they're seen to go to the Children's Hospital where they may feel people with more expert knowledge are available, at least they feel that everything has been done that could be done. I think that's an important thing.

THE CHAIRMAN: So it takes away the wondering afterwards?

A. Yes.

THE CHAIRMAN: Might things have been different if Raychel had gone to Belfast?

A. Yes, I think that's very important.

MS ANYADIKE-DANES: If it's being done in that way, does an important element of the transfer become how you manage the information to the families so that whilst you haven't removed absolutely all hope if there's 0.001 per cent that something might happen, you haven't necessarily allowed them to travel in significant hope or even real hope?

A. Yes, but I mean -- I think many doctors are quite

optimistic. They're hopeful that a disastrous thing that seems to be occurring in front of them -- that that's not true. And that maybe when they go down to the specialist centre, we might think of something else. No one wants to give up hope on a child. It's not like your mum or dad dying or something, it's different.

Q. In your view, if one's to establish a best practice about it, what is the sort of thing that you should be telling parents in that situation?

A. From the other hospital, you mean?

Q. Yes.

A. I think you need to tell them that the child is critically ill and that they are critically ill and ... It was my practice to be pretty blunt with people and just say, "Look, there's a really good chance your child will die". With meningococcal septicaemia in children that we would get in, that's what I would say, so that at least you've laid the groundwork that if the child doesn't survive, that they're thinking about the most terrible thing that could happen so that it's not, if things develop that way, an absolute surprise to them. I always hope it's not going to be that way, and I would say, "Look, I know I'm saying this to you, but please do not give up hope either just because I'm telling you these things".

Q. You have nonetheless given them what you think is the likely possibility, but nonetheless said, "We're going to the specialist centre; maybe something can be done there"?

A. I'm saying that from my practice in the intensive care unit, but I think that people in the district general hospitals can be a bit more optimistic because they're not used to dealing with ... I was here when Ian Carson was here the other week and you showed him -- it was an audit, I think, Dr Taylor did, and it showed -- I can't even remember which year it was, but it showed the mortality rate that year. It was maybe 20, 30, 40 children died. I worked in intensive care for 21 years and, when you multiply those figures up, many children in the Province have died in our intensive care unit. So death is something we see on a regular basis. So maybe our way of dealing with death can be different from the way people who don't see children dying -- their way of dealing with it can be maybe a bit different.

THE CHAIRMAN: Yes.

A. That's all I'm trying to say.

THE CHAIRMAN: I've got it, doctor, thank you.

MS ANYADIKE-DANES: Raychel's parents have given evidence on their discussion with you because their clear evidence

was they did travel in hope, real hope, that something might be possible.

A. Yes.

Q. And they believed they were given that hope by at least Dr Nesbitt from Altnagelvin. And when they had the discussions with you and Dr Hanrahan, they felt that they were understanding what the true position of their child was and the juxtaposition of those two things was actually quite difficult: the hope with which they had travelled and yet the reality that they were being introduced to by you and Dr Hanrahan. One of the things that Mr Ferguson said -- and he attributes this comment to you. The reference is the transcript of 26 March 2013, page 161:

"The words coming from his mouth[that's you] were before he went out, 'What's Altnagelvin trying to do here, pass the buck?' That sticks with me from that meeting."

Sorry, the actual words he did say was:

"Don't quote me on this, 'Are they trying to pass the buck here?'"

That's obviously something that stuck with him. And that actually, if it's correct that you said that, puts a slightly different understanding from you as to why Raychel was being transferred to the Children's

Hospital. Can you comment on that?

A. I have no recollection of saying that and it's not a phrase that I recognise that I would even use. I just have no memory of that.

Q. If you didn't say that, did you voice that sentiment or could you have voiced that sentiment?

A. I ... It's just not something I feel -- it's not a sentiment I would have -- I believe I would have used. As I've said to you before I recognise the difficulty that the district general hospitals have with very, very ill children and it was pretty much routine that they would have been transferred to Belfast for continuing care, even when there was little or no hope at that time.

Q. I understand. That's not actually quite the point that Mr Ferguson's making. It's your suggestion that they did not truly believe that there was any hope or anything that could meaningfully be done for her and that they were transferring her simply so that the bad news, the fatal event, would happen at the Children's Hospital rather than Altnagelvin. That's actually the essence of what he's saying.

THE CHAIRMAN: Yes, but I'm sorry, the comment that is remembered or the way in which it's remembered isn't consistent with what Dr Crean has said because Dr Crean

has said you expect, and perhaps you even want, children like Raychel to be sent to the Royal because there might be something to be done and it also takes away the concern the parents have afterwards that more should have been done.

A. I think the parents have the rest of their lives to think about things and if we can assist in any way for that memory, if we can at least show them that we have tried everything, that every stone has been -- we've looked at every aspect and we've got the specialists in, at least they know that everything that could have been done was done.

MS ANYADIKE-DANES: Yes, but if you leave aside the passing the buck element of it, what it does seem to suggest is that there was some discussion between you as to perhaps the quality of the management of her care at Altnagelvin. Are you likely to have discussed with them her care at Altnagelvin?

A. With the mum and dad?

Q. Yes.

A. I doubt it at that time. I think we were just trying to ... Probably just trying to get over the concept that she wasn't going to live any more.

Q. You see, their evidence went into a bit more detail than that, that you continually asked them about how many

times she had vomited, whether the vomit had any traces of blood in it. There's actually quite a bit of detail from them as to --

A. We would have --

Q. -- sorry, if I may just finish -- which all goes to the issue of fluid management. And then if you look at the fact that the coroner seems to have recorded from his telephone conversation with you mismanagement of the case at Altnagelvin, does that all not point to the fact that you thought things had not been properly managed in terms of her care?

A. I think that by the time I phoned the coroner up, it was evident that there were errors in her management. The working group -- which I'm sure you're going to come to later anyway -- the reason why that working group started was because of Raychel's death. So there would have been issues around her care, I am sure, discussed at that working group.

Q. Yes.

A. So I would have learnt things probably from there. That's all I can really say at the moment.

Q. I understand.

A. What I knew then and what I knew four months later, I would suggest were probably different.

Q. Well, the chairman has their evidence and he has yours,

and you say that you don't have a very clear recollection of those events.

A. Which events, I'm sorry?

Q. Of any of it, really. I thought you said.

A. That's correct, yes.

Q. But you are recorded as having formed a view -- and I'm not sure that you're resiling from that -- that you had formed the view at some stage that there was mismanagement of her care at Altnagelvin.

A. I have no doubt that that was my view when I phoned the coroner up in October 2001.

Q. Thank you. Is that something that you communicated to Altnagelvin?

A. Um ... I'm more of the opinion that that is something that was communicated to me by Altnagelvin.

Q. Sorry?

A. I'm more of the opinion that that is more likely to be something that Altnagelvin provided to me. I think I would have only got to know that through the working party, the working group that started in September, I think. Because there must have been some discussion around Raychel's management. I don't believe I ever reviewed a fluid balance chart or her notes. I think probably the first time I did that was maybe looking at them on the inquiry website.

Q. You reported Raychel's case to the coroner.

A. Yes.

Q. Why did you do that?

A. Because she was a post-operative death.

Q. Sorry?

A. Because she was a post-operative death.

Q. And you mean insufficient time had elapsed from her operation?

A. It would have been normal practice that if a child has died following an operation that you would inform the coroner.

Q. On the brainstem death test sheet there is a place to say whether this is a coroner's case; that's correct, isn't it? We'll turn it up just in a minute. And you sign the brainstem death test sheet with Dr Hanrahan. We can pull it up now. It's 063-010-024.

The final question:

"Is this a coroner's case?"

It's left blank.

A. Well, we hadn't informed the coroner at that stage, I guess. I think what this is probably to do with is that ...

Q. No, no, sorry, that question is not "Have you informed the coroner?", the question is "Is this a coroner's case?"

A. Okay. I don't actually remember having filled that in on that before.
Q. Well, should it have been filled in "yes"?
A. I can't -- I have to answer yes, of course it should have been, but I don't remember having filled it in before for anyone.
THE CHAIRMAN: Okay.
MS ANYADIKE-DANES: It is filled in in the affirmative for some of the children that are the subject matter of the inquiry. It wasn't filled in in the affirmative for Lucy, which was an issue that we took Dr Hanrahan to. In any event, having completed that brainstem death test, and so you were recording her as brainstem dead, in your view was there any doubt that she was going to be a coroner's case?
A. No.
Q. She could have been a coroner's case on the basis of possible negligence; isn't that right?
A. Yes, that's correct; yes.
Q. In fact, one of the reasons to refer is that the person has died either directly or indirectly as a result of negligence or in such circumstances as may require investigation. That's section 7 of the Coroner's Act of Northern Ireland. And all clinicians dealing with children or anybody who dies, for that matter, have an

obligation to refer and that act tells you the bases on which you make a decision as to whether the case should be referred.
So what was the basis for referring Raychel?
A. I think it was on the basis that she was a post-operative case. I mean, it was a totally unexpected outcome from a simple operation, and I think it was that, and somehow the electrolyte disturbance was in some way related to the fluids, her fluid balance at the time.
Q. And if the electrolyte disturbance is somehow related to fluid balance, fluid balance is a matter that can lead you to human intervention, isn't it?
A. Yes, that's correct, yes.
Q. And that's what you thought at the time, wasn't it, that the way in which her fluids had been managed, for whatever reason, had led to the development of her cerebral oedema and her collapse? That's what you thought.
A. I think even a non-medical person would have come to that conclusion as well.
Q. So that means if it was the way in which her fluids were managed, that means some problem at Altnagelvin, mismanagement?
A. I don't know. It ... I really just can't answer that

at the moment because I didn't have the notes available to me at the time to say something as robust as that. But there was some sort of an issue there, I would agree with you. I think the most we probably said is "Look, it's probably related to something to do with the fluids".
Q. Thank you. I just want to ask you a little bit about -- if we go back to the growing knowledge about the importance of appropriate fluid management and the role of low-sodium fluids in that that was being developed at the Children's Hospital.
I had asked you some of those questions in relation to Lucy, whether the Children's Hospital might not have been able to produce some guidance prior to the CMO's guidelines or at least disseminate the information and experience that they had gained about the risks involved in the use of low-sodium fluids. So I want to ask you about what might have been being disseminated.
A. Can I maybe just --
Q. Of course.
A. It's the potential risk of the inappropriate use of low-sodium fluids.
Q. Yes.
A. Potential risk of inappropriate use.
Q. That's what I mean. That's why there is a risk

surrounding it. The risk surrounding it is that it can be inappropriately used and we've seen the evidence of how easily that can happen and if it is inappropriately used that can lead to injury and fatal outcomes.
A. Yes. To put it sort of into context -- and I in no way wish to diminish what has happened to Raychel -- but having worked in the intensive care unit for over 20 years I saw some extremely rare syndromes and I'm not going to go through what they were, but there was one I remember, it's got an incidence of 1 in 200,000 live births and recently a case like that was mentioned at our mortality meeting. And most of the people there hadn't even seen one child like this in their working experience. I'd seen two.
Raychel's the only child that I've ever seen where this has happened to them in the post-operative period. It is a very, very rare thing that's happened and it's extremely -- it's a terrible thing for the family, but in the context of my working practice, this was an extremely rare event.
Q. You mean it's extremely rare that she died?
A. Yes.
Q. It's not extremely rare, is it, that her poor fluid management could lead to hyponatraemia?
A. Well, you know, hyponatraemia is one of the most common

electrolyte problems. What I've done as well -- I've been doing other types of audits in recent years as well, and one of the audits we have been doing is the biochemistry laboratory can generate reports for us and it can identify any child who's had a sodium less than 130. And it's actually surprising the number of children who came into the hospital through the A&E department with low sodiums. And they've just been managed at home with oral hydration and their sodiums have been very low as well. Some of them are as low as 126, 127, 128. So it's a common thing to see.

Q. Yes, but if I may bring you to the area that we're interested in, we're interested in hospital-acquired hyponatraemia.

A. Yes. Okay.

Q. That's the first distinguishing factor. Not something that happens at home and the child arrives with it. But the point that I'm putting to you is: it may well be rare for a child to die, but for a child to have their fluids inappropriately managed so that they develop hyponatraemia is not necessarily rare and is not the point to communicate that once you mismanage the fluids and they get to a stage where they have developed hyponatraemia, unless you are monitoring the child, unless you take corrective action, then things can

become very, very serious indeed? That's the learning point, is it not?

A. I agree entirely with you. I think this was the -- what you've just said there is the most important thing that came out from the working group, absolutely. I agree entirely with you there.

Q. And in terms of where things went awry in Raychel's case at Altnagelvin, whenever you became in full possession of the facts of how she was treated, leaving aside her death, which was a rare thing, but you could have seen that there was a potential problem there because she was vomiting, she didn't have her U&Es appropriately checked and she was being given all the time greater -- maybe not hugely greater -- but greater than her needs to maintain her fluids. So that combination of factors in the light of the fact that she'd just had surgery -- and that can have its own effects in terms of water retention -- that was a risk right there: it needn't have led to her death if appropriate monitoring had taken place and if there had been a change to her fluids and so forth. But if all that carried on, there was a risk of real injury to Raychel. And you would be able to see that.

MR STITT: Can I interject for one second? It was a rather lengthy question, but there were two factors in it which

I would ask you, sir, to consider, or ask Ms Anyadike-Danes to consider putting into the question. One of them is the evidence, whether it's ultimately accepted by this inquiry or not, the evidence of the extra amount of fluid as put forward by Dr Nesbitt, either 75, in rough terms, or 140 extra millilitres, if that was put in numerical terms to the witness.

And secondly, missing from the equation in the question was the relevance or otherwise of SIADH. So if we're going to put this, really, it should all go into the question.

THE CHAIRMAN: We're not going to make a compendium question. The fundamental point is that Raychel didn't die up Slieve Donard or something; she was in a hospital ward, she was in the constant care of nurses and doctors and, similar to Claire's case, the seriousness of her decline was not spotted. Do you agree with that?

A. Absolutely, yes.

THE CHAIRMAN: And that's the real problem. I understand that it must be right that many other children who -- virtually all other children who received Solution No. 18 have not died. Virtually all other children who end up with low sodium in one way or another do not die. But a child who's on a hospital ward with a non-life threatening condition should not

deteriorate under the notice of the nurses and doctors to the extent that she dies.

A. I was in no way trying to diminish what --

THE CHAIRMAN: I understand. Sorry, Dr Crean, I wasn't trying to get at you in any way. But I think that's the point you accepted because Ms Anyadike-Danes made it a few moments ago and you said that is the most important point.

A. Yes.

THE CHAIRMAN: You must monitor the child and take corrective action. And I'm afraid, if we set aside Adam's slightly different circumstances as another variation of dilutional hyponatraemia, what happened in Claire's case, what happened in Raychel's case -- and we have to set aside Lucy in this at the moment because there's a limit to our investigation there -- what happened in Claire and Raychel's case is, on the face of it, on the evidence before me, the children weren't monitored and corrective action wasn't taken.

A. I agree with you.

MS ANYADIKE-DANES: Thank you, Dr Crean, and thank you very much indeed, Mr Chairman. That was the point I was actually getting at: you had that knowledge and experience, not just you, but your colleagues also at the Children's Hospital, that if you carry on with

a situation like that and do not take corrective action, then what may be a slightly ill child, who can come through, can deteriorate, and if absolutely nothing changes from that pathway, that can lead to a fatal cerebral oedema.

You didn't see many fatal cerebral oedemas in those circumstances, but that may well be because some corrective action is taken. But the point that I'm asking you is: you appreciated those dangers. And what I'm inviting you to consider is why it was that the Children's Hospital did not see fit to adequately communicate those dangers to district hospitals in a more systematic way.

A. Well, the ... The first surgical ward I worked in was in 1976. And okay, it was an adult ward, but I remember in the evening time before I went home, filling out the blood bottles to do biochemistry checks the next morning on everybody on IV fluids. We did a morning ward round, we did an evening ward round before we went home to reassess the patients there. So if there had been a change in a patient's status, you would pick that up. And that's basically what you're alluding to. This was nothing new. This was just good medical practice at the time and it had been embedded in my practice for many, many years.

In the intensive care unit we did that, we did a morning round, we did an evening handover round. I even came in in the evening at about 10 or 11 o'clock at night to reassess children before I went to bed. And it's about assessment and reassessment and re-evaluation and that has been embedded in my practice since I was a houseman.

Q. Yes.

A. It wasn't something new and it wasn't --

Q. But you knew that in the district hospitals there was poor fluid management from your point of view. In fact, you knew -- and you told us when you were giving evidence in relation to Lucy -- that when that sort of thing happened and you perceive that it had happened in relation to Lucy, that you would communicate in a tactful way with the responsible clinician and point out some of the difficulties in the way that the fluids had been managed for that particular child. That was your evidence.

An example of having done that, you said, was your communication with Dr O'Donohoe. So what I'm putting to you is that you knew that, that it was happening out there for reasons of bad practice, maybe for whatever reason, but it was happening. And since it's a potentially very serious thing, why wasn't the

Children's Hospital taking it upon itself, or you for that matter, in a more systematic way to produce some sort of guidance to remind clinicians of the dangers of mismanaging IV fluids in children?

A. I think that debate was ongoing within our own hospital as well, and I think we were trying to convince our own paediatricians that change should be implemented as well. It was a general thing. I also heard what Dr Carson was saying as well, that this type of linkage between Children's Hospitals and district general hospitals really wasn't well formed. I think he gave the --

THE CHAIRMAN: He did, and I'm going to ask you about that later because you've been -- you're still in practice and you've certainly been in practice more recently than Dr Carson.

A. Yes.

THE CHAIRMAN: So I have a note towards the end of your evidence that I want you to contrast how this communication works now as opposed to how it did then.

A. What we did back then in trying to -- and you can criticise the kind of things we might have talked about, but we did actually try in 1999 to set up a group of, if you like, the lead paediatric anaesthetists in all the district general hospitals. In many ways that was quite

innovative within the UK at the time. That wasn't something that was happening in very many places around the UK. And that was just to try and get the people who were taking a lead for paediatric anaesthetic care in the hospitals to kind of come together, to have a forum to discuss things, and to try and take things forward.

I agree with you, we could maybe have discussed fluids, but I think at the time all I was trying to do was just getting a debate going so that we could trust each other, we could work together and let people in the district general hospitals set the agenda rather than it always being from the centre outwards.

MS ANYADIKE-DANES: I think the group you're talking about is the Paediatric Anaesthetic Group for Northern Ireland --

A. Yes.

Q. -- which I think you were instrumental in setting up.

My question is not directed to what individual clinicians did because you took the initiative to establish that group and Dr Taylor took the initiative to establish the Sick Child Liaison Group, which is based in Antrim Hospital, I believe, and that group did produce guidelines on bronchiolitis and meningococcal disease. What I'm inviting you to consider -- and I do this given your position, you were a lead consultant at

that time in the Children's Hospital, a very senior person -- I'm inviting you to consider whether it wasn't the case that the Children's Hospital could do something so these important developments are not left to individual clinicians, seeing where the gap is and trying to fill that themselves with their own limited resources in terms of time and so forth, and it becomes a more systematic thing that the Children's Hospital does.

The reason I'm asking about the Children's Hospital in particular is because it was the regional centre of excellence for paediatric care. It was the only hospital offering paediatric intensive care facilities, and, at that regional level, the whole region was its community. So that's why I'm asking you whether there wasn't any thought amongst you senior clinicians that this is something that the Children's Hospital could do.

A. I think that really what you're alluding to is the development of networks of care, which is something people speak about much more in recent years. I don't think that was something that was in any way established back then. I think that the groupings that we had set up were very informal, we just met in the evening time, in our own time, and we took turns to host those meetings. But they weren't formalised links as --

Q. I appreciate that. I'm only --

A. I know what you're getting at. I can't say that that would have been a bad thing to do. It would have been a great thing to do. But it's not what was happening back then, unfortunately.

Q. Well, then, I move on to if the Children's Hospital itself wasn't going to issue guidelines in fluids because it didn't do that sort of thing, whether you senior clinicians could. If I just pull this up -- and the chairman has referred to Adam's case -- could we pull two documents up side by side, 122-013-001 and 060-019-038?

These are drafts of a draft statement that ultimately was presented to the press and to the coroner. I appreciate that your evidence has been that you didn't see this particular one. What you saw was a draft practice statement that relates to how the anaesthetists, and for that matter the Children's Hospital, was going to conduct practice in relation to cases like Adam's, but if we stay with this one for the moment. Maybe you can see how those at Altnagelvin and other places which do surgery might have felt they could benefit from this kind of statement.

The first thing it does is it refers them to the Arieff paper in 1992, which of course talks about the

deaths of children in these circumstances, where there's not major surgery, some of them didn't have surgery at all. So it's a clear highlight to the potential danger involved in inappropriate use of low-sodium fluids. Let's put it like that.

And then it goes on to talk about -- before it goes into referring to major paediatric surgery, just undergoing surgery. So the first thought was that this was significant for the future management of patients undergoing paediatric surgery. And the thought was that they should be carefully monitored and reappraised in relation to the information now available. The part of the information available was that paper that's referred to.

Although it's got "major surgery" there, it goes on to talk about children who have a potential for electrolyte imbalance and being carefully monitored according to their clinical needs and so on, and refers to the "now known complications of hyponatraemia" and all that being assessed.

So even if something along those fairly general lines was put out, do you not see how those engaged in paediatric surgery in hospitals like Altnagelvin would have considered that helpful because it would have pointed them immediately to some of the issues that in

fact arose in Raychel's case?

A. That's probably best answered by the people in the district general hospitals and how they would have engaged with that information if they'd received it.

Q. Yes. If they received it, that's the point.

THE CHAIRMAN: Sorry, Ms Anyadike-Danes, we've been through this area quite a few times before. Let's move on.

MS ANYADIKE-DANES: Thank you.

THE CHAIRMAN: We don't need to go back over everything today.

MS ANYADIKE-DANES: When you were considering Adam's case, you said that one of the things you learnt -- in fact one of the two significant things you learnt -- the first was that children can die of dilutional hyponatraemia. You said that was the first case where you had appreciated that that could happen; is that correct?

A. Yes, that's right.

Q. Well, leaving aside anything else, was that not a message to be got out? If you hadn't come across it and therefore you weren't aware of it, was that not something to be got out?

A. Yes, it is, and I think that that was something that I picked up on when I read Dr Nesbitt's evidence as well. I know that you put it to him that Dr Chisakuta

had given a talk where that was part of the talk, I think. But there's also a duty of people working with children to keep up-to-date. I mean, some of the hospitals around the Province anaesthetise 2,000/2,500 children a year so it is important that they do keep up-to-date as well. There's an onus on them that they should take journals like Paediatric Anaesthesia and read them. So we've all an onus to keep up-to-date in our own specialty and sub-specialty.

Q. That's agreed. But the fact is that you are likely to have around you in the Children's Hospital a greater concentration of that kind of specialism. And if you hadn't seen a death or appreciated that there might be a death from dilutional hyponatraemia, then it's quite possible that those in the district hospitals wouldn't appreciate that either, and since that had come to you, all I was putting to you is it might have been appropriate to get that message out.

A. Look, I can't disagree with that comment.

Q. Thank you. Then if we pick up the point that the chairman had put to you. Another message that might have gone out to reinforce matters is the absolute importance of fluid management, and you had seen that in Lucy. Lucy's was a case -- I know we're not going into the reasons why she came by her demise, but you

discussed her fluid management in the course of giving your evidence and, in your view, her fluid management may not have been appropriate. Is that not something that could have been also got out?

A. I think the importance of fluid management in all patients has been underrated.

Q. Sorry?

A. I think the fluid management in all patients has been underrated or undervalued in its importance. There was a paper that came out -- I think it was around 2001/2002 -- and it highlighted the fact that fluid prescriptions and management in the ward situation, hospitals was nearly always managed by the most junior member of the team. And it was the junior member of the team that had the least knowledge in fluid management. But that was the way it was done over a decade ago and I think things have come a long way since then.

All the things that you've said are true. It should have had a much higher importance. When I worked in a surgical ward back in the 1970s, it was of very high importance. But I suppose it just depends on who you're working with, the senior people who are on your team, and how they teach you and engender that ethos within you. But you're right, I mean, it is an extremely important aspect of medical care, and I would like to

think, certainly in Northern Ireland, that things have improved a lot.

I mentioned a little while ago about the audit we did in children whose sodiums are less than 130. And what I have to do is go through every single set of notes and look at -- and what we're really auditing is children who are on intravenous fluids therapy, who develop a sodium of less than 130. And I have to quality assure the notes and see if the appropriate things were done, if it's documented in the notes and how everything is followed up. And I am impressed nowadays by the quality with which children are now managed, whose sodiums are less than 130.

A major part of this, Mr Chairman, is because of the outcome of Raychel's sad death and this inquiry as well, that it has moved things on a huge amount in this province.

THE CHAIRMAN: Can I ask you this: when you said a few minutes ago that when you were trained in the 1970s, fluid management was given very high importance, does that suggest that its importance somehow slipped a bit and then has reasserted itself in more recent years?

A. I'm not sure, Mr Chairman. I worked with a fantastic group of people back then. They were very, very good.

THE CHAIRMAN: Right.

A. And they would have killed me if I'd done the wrong thing. They would have been on my case immediately. They were just very, very proactive, very smart people, and I just am grateful that I worked with them at the time.

THE CHAIRMAN: Okay, thank you.

MS ANYADIKE-DANES: If we just go on to talk about what happened, perhaps in the light of what you have just said there about the use of Solution No. 18 in the Children's Hospital. The point that you have just made to the chairman then, is not a task to make sure that the learning or the training is improved for everybody so that it's not just by chance that you are exposed to the importance of certain things in relation to the management of children's care, but that everybody is exposed to that degree of importance?

A. Yes, you're right. The amount of effort -- it's not right in here yet. We're better than most places, but the amount of work that has gone into this in Northern Ireland to try and improve it is a huge piece of work and I think it takes that level of commitment by people to move it forward. I don't think there is that level of commitment elsewhere in the UK. That's one of the reasons that I wanted to get involved with NICE to try and bring what we have learnt locally here in

Northern Ireland to --
Q. I'm going to ask you about that.
THE CHAIRMAN: Let him finish.
A. It was really just to try and bring the learning here, to try and disseminate that learning. Because one of the things that I wanted NICE to do was to look at education as well as just which fluids, and what they do is they do a whole evidence base and they have questions designed around that. But I asked them to do something more than that and it was about education, about fluid prescription and fluid balance charts, that there should be like a generic template for that throughout the United Kingdom, much in the way things have developed here in the Province.

I believe we've done a lot of work on this and there's a lot of learning about this that can be disseminated to all hospitals in the United Kingdom where children are managed. In fact, one of the spin-offs that has happened locally here in Northern Ireland is that we've been re-evaluating the way adult fluid management prescription charts are managed as well and that has been -- that profile has been raised as well.
THE CHAIRMAN: Thank you.
MS ANYADIKE-DANES: You were asked about the changes in use

of Solution No. 18 when you were giving evidence in relation to Lucy. I think I specifically put to you the evidence of Dr Nesbitt, of what he said he was told about the children, that the reduction and actual elimination of the use of Solution No. 18 about six months before Raychel's death, and you responded with really not understanding how that could be because it didn't equate with your experience. Would that be a fair way of summarising it?
A. Is it my response to the inquiry a couple of weeks ago, you mean?
Q. No, when you were giving evidence in relation to Lucy you said you weren't aware that there had been a change of that sort.
A. That's correct.
Q. In your own practice you didn't use Solution No. 18 very much and you weren't aware that the Children's Hospital had reached an abrupt point six months or thereabouts before Raychel's death when it was no longer using Solution No. 18. That was the essence of your evidence; is that correct?
A. Yes, and you showed me a graph, at that time --
Q. I did.
A. -- which surprised me, to say the least.
Q. We won't pull it up now, but the reference for that is

319-087a-001. And then there was another letter, which retracted some of the information in that first letter and provided order numbers, which showed a dropping off from about April 2001. In other words, before Raychel. The reference for that is 319-087c-003.

If we can maybe pull that up. That was it. You didn't recognise that either, I don't think.
A. No. I mean, I see what you're showing me there, but I don't remember something happening where that effected that change is really what I'm trying to say.
Q. And then I think that we have had another letter from DLS of 23 August 2013, seeking to explain matters further. We can pull that up. It's 321-073-001. And if we get the 002 on, just to make sure there's -- I don't think there's anything relevant there.

So it all happens in that paragraph which starts "paragraph 213". This is directly relating to Dr Nesbitt's telephone survey. If we can substitute 022-102-317 for that letter. There we are.

It says:

"Children's Hospital anaesthetists have recently changed their practice and have moved away from Solution No. 18 to Hartmann's solution. This change occurred six months ago and followed several deaths involving No. 18 Solution. Craigavon Hospital and the

Ulster Hospital both use Hartmann's intraoperatively and No. 18 post-operatively [which is what Altnagelvin was doing]. The anaesthetists in Craigavon have been trying to change the fluid regime to Hartmann's post-operatively, but have met resistance."

So this paragraph is seeking to address that and the evidence that we have already been provided about the use of Solution No. 18. Firstly, did you provide this information?
A. Yes, and I must apologise for this because I was completely mistaken about this. I was actually on my holidays at the time and I got the opening statement for this part of the inquiry; it came through on my phone as an e-mail attachment. It was the first time I'd seen this statement that -- I'd heard before about the change in practice and moving -- and not using No. 18, but it was the bit where it said about "to Hartmann's solution". And I don't believe I had seen that before. So all I thought was at the time, "Goodness, if that's ..." It was the perioperative thing as well, which means intraoperative and post-operative. And I thought, "Goodness, maybe that means we had changed from a hypotonic solution to Hartmann's for the intraoperative period", but in fact that was completely wrong.

Q. This is incorrect?
A. Totally incorrect. We were the same as everyone else: we were using Hartmann's as the intraoperative fluid, the way all the other hospitals were as well. So I was wrong and I apologise for that.
THE CHAIRMAN: Thank you very much. That clarifies that.
MS ANYADIKE-DANES: So the position remains as: there is a change, you're not entirely sure why though?
A. Yes, but can I ... Let's look at the statement as it sits there because the statement is there was a move away from fifth-normal saline to Hartmann's about six months before Raychel had been admitted to Altnagelvin Hospital. So you'll be looking for supportive evidence to show that there was a change there. So I would have thought, the way you showed me the graph of the change in use of No. 18 Solution, there would be a change in use of Hartmann's solution if there was a change in practice.
I know that there's a document here -- can I mention it? Is that okay?
THE CHAIRMAN: Yes.
A. It's 321-054c-002. That's basically the use of Hartmann's in the Children's Hospital over a three-year period. And to my eyes, there doesn't really seem to have been a change in the usage of that solution. Look,

we would have used it mainly in theatre, but it was used in the wards as well. I now know that people like Dr Loan favoured that solution and other people favoured it as well, but some people, probably like myself, were used to using hypotonic solutions as well.
I think many of us at that time who had who had been a bit longer were concerned about changing practice, changing fluids to something we weren't as comfortable using. Because the evidence at that time wasn't strong. You had almost two diametrically opposed views of what fluid balance should have been around 2000 and 2001. You were worried about moving away from your comfort zone to something else in case it could do harm.
I, for example, recently have seen children who have been on non-glucose-containing fluid who have developed profound hypoglycaemia and now very young children in our hospital, children under five -- I would think they're nearly on normal saline with 5 per cent glucose. About three-quarters of the post-operative fluids in the first 24 hours are glucose-containing fluids and Hartmann's didn't routinely contain glucose; you had to get it specially made that way.
MS ANYADIKE-DANES: Dr Crean, all we were trying to do is to try and see what might lie behind the very clear statement that Dr Nesbitt has made. He's absolutely

clear in his mind that that's what he was told.
A. Okay. I'm just trying to --
Q. I understand that. Not only that, when we asked for the usage, if I can put it that way, as measured by the bags being ordered for Solution No. 18, we saw a fall. So we're simply trying to understand. And the only relevance of trying to understand all of that is obviously if the Children's Hospital has made a decision like that or altered their practice in that way, then it raises the question of whether they should not have shared that with the other hospitals. In fact, the clinical director of paediatrics at the time, Dr Hicks, says that if they had changed their practice in that way then she believed it was reasonable to criticise the Children's Hospital for not advising other hospitals. And that's in the transcript of 7 June of this year at page 43. We don't need to go into it. So that's the reason why we were looking at it.
Since then, we have received a statement from Dr Paul Loan, and it's worth pulling this up. It's witness statement 360/1, at page 2. And if you can bring up page 3 alongside it. So you can see just for those who may not have seen this statement before, Dr Loan in that second paragraph is appointed as the consultant paediatric anaesthetist in 1996. He had

training, as did Dr Taylor and others, at the Sick Children's Hospital in Toronto, and he returned in 1997. You see that from the middle paragraph. He became educational supervisor in anaesthesia for the Children's Hospital. That involved coordinating the educational programme and assessments for junior anaesthetists and medical students during their anaesthesia attachments to the Children's Hospital.
So that's his position, but you're aware of who Dr Loan was and is?
A. Yes, I have a very high regard for him.
Q. So he sets out his own concerns about the use of Solution No. 18, which he brought back with him from Canada.
THE CHAIRMAN: Sorry, have you seen this statement before, doctor?
A. Yes, I saw it -- it was yesterday or the day before, I think.
THE CHAIRMAN: Thank you.
MS ANYADIKE-DANES: He talks about introducing his students to that, so they were taught about the potential risks in the use of low-sodium fluids. In fact, he says there in that middle paragraph:
"I consistently taught my approach to fluid balance in children to these groups."

And he gave regular talks on fluids and blood products and so forth:

"Many paediatricians seemed to believe with some reason that the evidence of any harm from hyponatraemic fluids [as he calls them] in paediatric medical patients was weaker than in surgical patients, so an anaesthetist's interpretation of the literature did not apply to their own patients."

And that's one of the reasons why he felt it important to address them.

And then he thinks some of that may have had an effect in the reduction in the use of Solution No. 18. He's not claiming that for himself. Then he goes on in that penultimate paragraph to talk about Mr Trevor McNulty. Are you aware of who he is?

A. Yes.

Q. He was appointed as the resuscitation training officer at the Royal Group of Hospitals soon after Dr Loan's appointment. He says he was a "vigorous proponent of the APLS style of fluid management" and he describes him as "a forceful and didactic teacher". He thought his teaching methods might have had more effect.

Then he comes to something that may be closer to what could have given rise to a change in practice. He describes how there came a time when they were going to

reassess what went on to the contents of the resuscitation trolleys. There was an exchange between them. And if you see that bottom sentence:

"I suggested by e-mail that accidental use of hyponatraemic fluids during resuscitation would be counterproductive and dangerous and they should be removed from the trolleys."

This was part and parcel of Dr Loan's concerns about --

A. I would agree with that sentiment as well.

Q. And then if you see over the page:

"I believe that Mr McNulty accepted my argument and Solution No. 18 and 5 per cent dextrose solutions were removed. And following this, I heard that the removal of hyponatraemic fluids had been extended to the entire emergency medicine department in the Children's Hospital for similar reasons."

So he is giving an explanation for why one might see a reduction in the use of Solution No. 18: a combination of teaching from himself and from Mr McNulty and also what is a clear change in practice, which is the removal of that solution from the trolleys for use in resuscitation and also the removal, he says, of that from the emergency department in the Children's Hospital. Were you aware of that?

A. I can't remember, but the important thing here is it wouldn't have just been fifth-normal saline; it would have been all hypotonic solutions. You must remember that when you go back to the NPSA document that came out in 2007, there they state that the most common fluid in the alert that came out that they thought would be used in Children's Hospitals would be half-normal saline, and that is a hypotonic solution. So we have upped the ante slightly, we have got a bit more sodium into it, but it's still a hypotonic solution. So what Paul has suggested there -- in an A&E department you're resuscitating collapsed children and you need to give them something like normal saline as a resuscitation fluid and there was no place for any hypotonic solution there. I think that is the point that he is making. Although he has mentioned fifth-normal, that would go for all hypotonic solutions. And that's best practice.

Q. Yes, but he has specifically mentioned Solution No. 18 and what I'm asking you is -- and I just want to capture your answer -- were you aware that that had happened?

A. I honestly can't remember. I just can't remember at this stage.

Q. Well, if that happened in the way that he has described it, is that a practice that it would have been helpful if the Children's Hospital had communicated to other

hospitals?

A. Um ... It's almost so basic that I don't know why those fluids were on our resuscitation trolleys in the first place.

Q. Yes, but since they were and they were removed, it might be that they are on resuscitation trolleys in other hospitals. The question is really a simple one. If the Children's Hospital have reached a stage where they don't have that solution on their resuscitation trolleys and they are extending that practice to emergency medicine, is that not something that they might have disseminated to other hospitals?

A. I can't disagree with you that the dissemination of this is a good thing. But I don't think there was that culture at the time to do things like that, to be quite honest with you. If it was a perfect world, we should have done all these things, and I agree with you entirely on what your sentiments are.

Q. The culture, of course, is one for the Children's Hospital to develop. They can set the culture.

THE CHAIRMAN: There's more to it than that. And Dr Loan says in the second paragraph, the first new paragraph on the right-hand page, that this was incremental rather than sudden, so he's saying there are several factors

which feed into this and it happens over a period rather than suddenly, though curiously the drop in the ordering of Solution No. 18 is quite sudden.

A. It is, I agree with you. Can I follow on from what you've said, chairman? I have written these two words down to remind me that it's evolution and revolution. Things evolved, there wasn't like some shining light in most of our practices, the way things happen. Things seem to evolve. And it's almost imperceptible the way things change. And who notices the change most? It's the trainees. People have said to me, "But I was working here three years ago, you weren't doing it that way", and things like that. I think just by discussing things with new people coming to the department, things you pick up in meetings, your practice does change, but we almost don't notice it.

THE CHAIRMAN: Thank you very much. Doctor, we'll take a break for ten minutes.

(11.55 am)

(A short break)

(12.10 pm)

MS ANYADIKE-DANES: I just want to ask you one final question in relation to Dr Loan's witness statement. If we might pull up witness statement 360/1 at page 2. We can see in the middle of that page he says that he

found it difficult to challenge the widespread attitude to fluid therapy and that he found there was considerable resistance to any idea that previous practice might be inappropriate, especially amongst some senior paediatricians.

But then he talks about when he became education supervisor, which he did shortly after his return, that he taught his approach. In your view, was there a consistent teaching of fluid management to the trainees at that time in the Children's Hospital?

A. It's hard for me to remember. I think the one consistent thing that we had was that if you were using fluids for anything above the maintenance fluid, you would use isotonic fluids. The maintenance fluids may have varied between different people, but there would be that consistency, over and above the maintenance fluids, that we would use isotonic fluids, I think. I do feel that that just reflected not just people's own practice, but what was coming out from the literature at the time as well. It was actually very hard. A lot of the things that were coming out then were people's views with a small number of case reports. There weren't randomised controlled trials largely that were coming out, there were just the odd cases. And I think that you want to make sure that if you are going to change,

that you're not going to do harm with that change. That's something that you need to be very careful to do.

Q. Yes. What I'm wondering is whether it was possible, depending on who you were being trained by in terms of who you were following, who the consultant group was that you found yourself with, to have a different training or teaching as to the appropriateness of fluids at that time.

A. That's a possibility. That is a possibility. And also, you have to take into account the age of the child as well because what might be right for a 10-year-old might be different for a six-month-old child as well. But that variation in practice would be common in relation to many things in medicine as well.

THE CHAIRMAN: Because there's not necessarily unanimity on a single route. Different consultants have different approaches?

A. And not only that, chairman, it's different things still work and work well if they're done in the appropriate way.

MS ANYADIKE-DANES: Yes. I don't mean so much that one size doesn't fit all and so different conditions in children merit different approaches. I don't mean that variation. I mean the variation between what is appropriate fluid management and not, and that will,

of course, take into consideration that you're dealing with a range of different scenarios.

A. Yes.

Q. Was it possible for trainees to be having different training about that at that time?

A. They could be, and the trainees are -- they're smart people coming through, and at the end of the day they should be in a position to look at all the relevant details and the relevant practices that are out there and make up their own mind as to what is the most appropriate thing to do as well. But I see where you're coming from, that by giving conflicting advice and conflicting thoughts, that can be confusing and it's maybe not getting the relevant message through as well. I take your point.

Q. Given that it was known that there were differences of view between the anaesthetists and intensivists and the paediatricians and maybe sometimes also the surgeons, so given that that was known, was any thought given as to how we can have an approach that perhaps doesn't confuse within the hospital?

A. I can't remember anyone bringing that up for consideration at the time. It would have been a good idea, I think, but I don't remember that having been discussed.

Q. I presume Dr Loan might have voiced his view of how difficult it was --
A. He was -- he was very good, actually, he was very, very good and very vocal on those things. I think that he was almost pivotal in changes that were made there.
Q. Just finally, there was something that came across when you talked about people having to bear in mind the changes in literature.
A. Yes.
Q. The 31 March 2001 lesson of the week is published -- that paper, I'm sure you have seen it. It's 043-104-228. If we lift that up so we can see the marginal note:

"Do not infuse a hypotonic solution if the plasma solution concentration is less than 138."

It's a fairly stark instruction. So that would have come obviously before Raychel. But is that the sort of thing that influences practice in the Children's Hospital?
A. I think it's the sort of thing that can influence practice around the world, not necessarily just the Children's Hospital.
Q. Yes, but I'm thinking about the Children's Hospital and I'm thinking of you there, on the subcommittee of excellence and standards. Is that the sort of thing

that influences practices as far as you're concerned?
A. I'm not sure. I'm not sure. I'm just not sure. Something like this is something -- I mean, we didn't review the literature on a monthly basis and think, "What can we use here that might influence our practice?" That might be something that an individual says, "Look at this article here, I think this is very important and it's something maybe we can take forward".
Q. Thank you. Then if we move to the working group that was established to produce guidelines. You said a little earlier, when you were giving evidence, that what prompted that was Raychel's death.
A. I believe that to be the case, yes.
Q. In your mind, what was it about Raychel's death that required or merited regional guidelines?
A. What I believe now -- and you were actually very good, a while ago you mentioned this yourself and you said it very succinctly, it was about the infrastructure there to support good practice, about monitoring patients, making sure their U&Es were done, making sure people were properly trained, making sure they knew how to calculate fluids in children, making sure the fluids they used were used appropriately, making sure they regularly assessed the children.

To me -- and this is where I was coming from when

I was on that group. To me, that infrastructure was nearly more important than deciding the fluids or banning this fluid or recommending that fluid. I felt that those structures were the most important thing because I remember someone saying, "Well look, if we shouldn't use fifth-normal saline, what fluid should be used?" And they were missing the point. They were missing the point that the fluids need to be individually tailored to the needs of the child and people needed to think more. It wasn't about one particular fluid, it wasn't, as you said a while ago, one size fits all.
Q. Yes. So if that was what came out of Raychel's case and made that appropriate for regional guidelines, and that would have resonated with you because you had seen the absence of that kind of infrastructure, and that's presumably why, off your own bat, you communicated back to clinicians who you thought perhaps had not employed an appropriate fluid management regime for a child you then subsequently saw at the Children's Hospital. So you would have noted the absence of that?
A. I guess so, yes.
Q. Is there any reason why that couldn't have been the response to Lucy's death, for example, where there were similar features of that sort?

A. No, there's not, no.
Q. In the way that --
A. About the management of fluids?
Q. Yes, exactly. In the way that the Altnagelvin clinicians had seen that in their own practice of Raychel and realised, whether you say that Solution No. 18 in and of itself is inappropriate, but there were features of her care that might have benefited from the infrastructure that you've just talked about to send the message round the region, they saw that. Could the Children's Hospital not have seen that in relation to Lucy, as suggested, this infrastructure, we need it, we think?
A. I don't think we picked out the importance of her fluid balance at the time. I can't disagree with what you're saying that if you see an issue that is inappropriate or you're not happy with, that more can be done about that regionally. Nothing that you have said is incorrect, I can't disagree with anything you are saying. It's all best practice, what you're saying.
Q. Yes. In any event, it did prompt the CMO to establish a working party. And you received a letter on 21 August, I believe, if we pull it up. 007-050-099. I say "you", I think everybody on the working group received this letter.

A. Okay. I don't remember this at all, but thank you.
Q. So then you see that:
"Increasing evidence that acute hyponatraemia is emerging as a significant clinical problem in sick children receiving IV fluids."
Would you agree that by August 2001 there was that increasing evidence from your experience?
A. Well, there was definitely more coming through in the literature at that time. We had the Arieff paper in 1992, we had Dr Sumner's editorial in 1998, the paper that you've just mentioned there, that came out in March 2001. So there's definitely emerging evidence there.
THE CHAIRMAN: Plus, from the evidence I heard a few days ago, you had Raychel's death itself.
A. Oh, absolutely.
THE CHAIRMAN: You then had --
A. Yes.
THE CHAIRMAN: You then have Dr Fulton raising it at a meeting of medical directors and Dr Kelly saying, from Sperrin Lakeland, "Oh, we have had an incident here too". And Dr Loughran from Daisy Hill apparently said to Dr Nesbitt, or Dr Fulton maybe, that he had come across something like that or knew something like that that had happened in Dublin.

A. He was in my year at college, he was an anaesthetist from Daisy Hill.
THE CHAIRMAN: Are there different bits and pieces coming together here? You've got some direct experience in the north, which we'll probe in a few minutes, published papers and a growing general awareness.
A. Yes.
MS ANYADIKE-DANES: And then he attaches a BMJ paper and a brief resume of the problem prepared locally. There is a resume of a problem, which is prepared by Dr Taylor and is attached to an e-mail that goes from Dr Carson to the chief medical officer. Just to orientate you, if we can please pull up 026-016-031. That's the e-mail. You see it says:
"Attached is a document drawn up by Dr Taylor and his colleagues. It reflects current opinion among experts, but it does not yet command full support amongst paediatricians."
Then he refers to the problem of dilutional hyponatraemia:
"The anaesthetists in the Children's Hospital would have approximately one referral from within the hospital per month."
Were you aware of that incidence of hyponatraemia?
A. No. I mean, what does it say? One referral ...

We would see hyponatraemia -- I mean, this has been mentioned by many people: it's a very, very common electrolyte imbalance to have. And we would see it amongst our own patients as well. But I don't recognise children being admitted to the intensive care unit because of low sodiums to be corrected.
Q. In fairness, it doesn't actually confine it to the intensive care unit, it talks about the Children's Hospital.
A. I don't recognise that.
Q. You don't recognise that?
A. No, I don't.
Q. Is it because you don't believe that serious hyponatraemia, if I can put it that way -- that children with that condition were being admitted with that frequency?
A. No more than they are today. That's what I'd really say. I don't think so.
Q. Then he says that:
"There's obviously a need to get better agreement amongst anaesthetists, intensivists and paediatricians."
Then the document that's attached to that, if we pull up 043-101-223 and 224.
A. That's the attachment, okay.
Q. Yes. And this is the document that's attached along

with the BMJ article to the letter of invitation to people to participate in the working group. And really, it's summarising the problem, if I can put it that way, in those first four paragraphs. So it recognises that the particular fluid at issue, Solution No. 18 as we've called it, is one that's used frequently. Then in the third paragraph it talks about its effects in the body and the significance of those effects if you combine them with the response to a stressor, which is essentially to retain water. That's a point that I was putting to you before. That is being described as "a double whammy".
That has been portrayed as something that people appreciate or at least had been appreciated. Was there any discussion between you and Dr Taylor about the production of this document?
A. Who produced this document?
Q. Dr Taylor.
A. I honestly don't remember. I ... Um ... I honestly don't remember.
Q. I will ask him in due course when he gives his evidence about who he discussed this with. Because the e-mail suggests that it has been drawn up by Dr Taylor and his colleagues.
A. Right. I'm not sure.

Q. Would you disagree with any of it in terms of the first four paragraphs?
A. No, not at all, no. It's very good.
Q. And how long have the anaesthetists in the Children's Hospital been of that view, the situation that's described there in the first four paragraphs?
A. Well, I think, basically, that's what has been said in the Arieff paper from 1992, really. It's really just saying it in a different way.
Q. So that particular way of describing the problem is something that was known and accepted --
A. For a number of years.
Q. -- amongst the anaesthetists in the Children's Hospital?
A. I would have thought so, yes.
Q. And if you look at the recommendations and the IV fluid prescription, is there anything there that you would disagree with?
A. At the moment -- back then, not really, I don't think so. I mean, you could argue about the maintenance fluid, whether you could use fifth-normal or half-normal. They're both equally bad if you're concerned about hypotonic fluids. But it seems fairly reasonable.
Q. But if he'd come to you and said, "Look, given some of the cases that we're seeing coming from the district

hospitals, would you have any objection if we put this out as just an aide-memoire to remind people of the problem?" Would you have had any objection to that?
A. I don't think so, no.
Q. So that is a guideline that could have gone out?
A. It could have been a recommendation, yes.
Q. And it derives from the information in the first four paragraphs. So that could have gone out well before Raychel's death?
A. Yes, it could have done, yes.
Q. Thank you. So that information comes to you and then a meeting is convened, and we have the minutes of that meeting. If we could perhaps pull up 007-048-094 and 095 together. Was there any discussion with you about being a member of this working group or did you get communication out of the blue?
A. Honestly, I just can't remember at all about this. I'm sorry. Do you know, I can't even remember the make-up of the group apart from Liz McElkerney. I know that when Dr Nesbitt was questioned about this, he thought she was a biochemist; she was one of the senior nurses in the Ulster Hospital. I remember her being there, but I just don't remember very much else at that time.
Q. You seem to have attended this first meeting.
A. I did, I can see my name.

THE CHAIRMAN: Is that partly because it didn't meet as a group very often?
A. Again, I ... When I read Dr Nesbitt's evidence he seemed to think it met once and then there were like subgroups to do pieces of work. That's the way I read it. I just don't remember. And when I looked on the website that was the only minute I could find. Maybe there are more.
MS ANYADIKE-DANES: There is an informal minute --
A. Are there more?
Q. -- which I'll take you to, of another meeting in October, but we'll come to that.
A. Okay, okay.
Q. When you received the letter or received the invitation to be part of a working party, was that the first time that you were aware that there was any possibility of guidelines being produced for hyponatraemia or in relation to hyponatraemia?
A. I'm just unable to remember that at the moment.
Q. Let me see if I can help you, prompt you, with something. Dr Taylor has a meeting of the Sick Child Liaison Group on 26 June 2001. I'm not going to put it up, but the reference for it is 008/1, at page 15. In that, under "Chairman's business", it says:
"Hyponatraemia. BT [Bob Taylor] presented several

papers which indicated the potential problems with the use of hypotonic fluids in children. Work to take place on agreed guidelines from the Department of Health on this subject."
So he, within two weeks or so of Raychel's death, has a meeting where he is referring to the fact that there are going to be departmental guidelines. Were you aware of that?
A. I'm sorry, I just can't remember.
Q. Okay. Then if we look at the people who are on the working group and if we look at them in relation to the children that the inquiry has been investigating. If I can just pull up 328-003-001. That's the first page. Then there's another page, but let's deal with this.
So as you can see, it's very straightforward. Along the top are the children. Along the side are certain members of that working party. One sees for Dr Taylor his involvement in those children and yourself also and Clodagh Loughrey and then, on the next page, we have Geoff Nesbitt and John Jenkins, Marshall, Loughrey and McElkerney. One way or another those people are all bringing to this meeting their own individual experiences of hyponatraemia, but more specifically their knowledge and their involvement in these cases. Would you accept that?

A. They had been involved. Can you say that last bit again?
Q. One way or another, they are bringing to this working party, this meeting, the first meeting, not only their own experience in a more general way of the problems of hyponatraemia and fluid management, but their direct experience and knowledge of these children.
A. What do you mean by that last bit, they were bringing their direct --
Q. That was their experience of potential difficulties that can arise --
A. They had that experience with those children? Okay.
Q. Yes, exactly. So they had that.
A. Yes.
Q. If we go back to the minute again and pull up 007-048-094 and 095. At the time of that meeting, you would have known that there were fluid issues in Adam.
A. Yes.
Q. Leaving aside the Claire point -- and I know that you've said that you were just simply Claire's named consultant and you didn't have any direct involvement in her care -- but you treated Lucy and you knew about issues in Lucy and you knew about issues in Raychel. Yes?
A. Okay, yes.
Q. And you would have known that Dr Taylor had involvement

in Adam's case?
A. That's correct, yes.
Q. And you knew that he was the chair of the audit mortality meetings, so of any of the children that the inquiry is concerned with who died at the Children's Hospital, which they all did, if they had an audit meeting then he would know about them to that degree.
A. Yes.
Q. Yes, you would know that. And of course, you knew that Dr Nesbitt was involved with Raychel.
A. That's correct.
Q. So had you discussed these cases in which you had your different knowledge about before this meeting? Had you ever met and discussed?
A. Discussed with the people at the meeting itself?
Q. Yes, before the meeting.
A. I just can't remember. I would have thought that if a meeting was convened to get people from different parts of the Province together, I don't think a meeting would have -- I don't know, I don't think it would have taken place. People have to take time off work to come.
Q. I'm simply trying to find out whether this would be your first opportunity to come together and discuss your various experiences.

A. Well, it depends what the remit of the meeting was and what the agenda was. Were we there to discuss our different experiences or was it to try and come up with a guideline or something about fluids in children?
Q. It was, according to the letter of invitation, to consider how best practice could be brought to bear on the problem. So presumably one has to identify what you think the problem is and how that arises and to explore whether further advice needs to be issued by the department to the profession. That's --
A. And that letter had attached to it the --
Q. The document from Dr Taylor that I just showed you. So that's the context of it.
A. Yes.
Q. As well, of course, you know there has just been a death in which hyponatraemia was involved.
A. I guess what was happening is they were trying to get people from the main hospitals in the Province and people with maybe some background knowledge to bring that forward.
Q. Yes.
A. I don't think they were maybe ... Well, I don't know, but I don't think we were discussing cases, we were trying to --
Q. I'm going to come to that in a minute.

A. -- come up with a guideline.
Q. But at the moment you can see just from that list of those who were present that actually there is a representative from each of the hospitals --
A. Yes.
Q. -- in which one or other of these children died, or at least was first treated before ultimately being transferred to the Children's Hospital.
A. That's correct, yes.
Q. What I'm trying to ask you is, given that you're all coming with your various experiences and knowledge about actual cases in which this has proved a problem, if you're going to try and identify what the problem is and what is the best practice that one might bring to address that problem, do you not inform that with your own experience?
A. You can do, but then I think that the document that was appended to the letter that went out was actually very good, and that might have been the start-up point from which people worked. It could have been that. It could have been in conjunction with maybe Dr Nesbitt's own experience because I have known Geoff a very long time. He was just a great trainee with us back in the 1980s. He's a very, very caring doctor and I know that he was terribly upset by what happened.

THE CHAIRMAN: But why limit it to Raychel?
A. I don't know, because it depends, if we're there to try and ...
THE CHAIRMAN: You're there to try to work out an answer to a problem.
A. Put a guideline together. You could draw on your experience, you're right.
THE CHAIRMAN: Exactly. For instance, your view was that Raychel's case wasn't on all fours with Adam's, but your view was that Raychel's case was not on all fours with Adam's.
A. The mechanisms were different.
THE CHAIRMAN: So if you're drawing up guidelines to avoid hyponatraemia, looking at Raychel's case or only considering Raychel's case might not capture some element of what went wrong in Adam's case. Okay?
A. Okay.
THE CHAIRMAN: First of all, what good reason would there be not to discuss the circumstances in which other children had died apart from Raychel?
A. Do you want me to reply to that in regard to Adam or just generally?
THE CHAIRMAN: I think you expressed a view to the coroner that there were differences between Raychel and Adam. If we take that at the moment to the extent of the

differences one could discuss, but since that was your view and these guidelines were not solely to deal with what went wrong in Raychel's case, they were dealing with hyponatraemia and beyond that. Right?
A. Yes.
THE CHAIRMAN: So why would you not use the available information and expertise among the members of the working party to consider deaths other than Raychel's?
A. I think we probably were all drawing on our own expertise with children we had managed, and that could include the children that you've mentioned. We may not have been explicit in mentioning those names, for example, but somewhere within us we had the management and maybe learned from that. I don't know.
MS ANYADIKE-DANES: Dr Crean, if I put it to you in two ways. Firstly, look at paragraph 2:
"Dr Taylor informed the meeting about the background and the incidence of cases seen in the Children's Hospital and patients who are particularly at risk."
The most natural thing there is to actually discuss some of the cases, "the incidence of cases seen in the Children's Hospital", isn't it?
A. Um ... I don't know the context in which that was said or ...

Q. I'm just asking you, is that not a natural place --
A. It could be, it could be.
Q. Thank you. And when I have asked clinicians about various issues in relation to the inquiry's work, most of them have sought to give me an example directly from their own experience, so they'll give me a clinical example. You have too.
A. Yes, I have.
Q. That's what clinicians do, isn't it? When they're looking at a problem and they're trying to see how can we best address it, they draw on that. And if, as the chairman has summarised it for you, if what you're trying to do is produce a guidance that will be a broad guideline that will therefore be useful in a number of different scenarios, not just targeted at something that will resolve a problem to one type of case, the absolute natural thing to do is to have that discussion because what you want to say is, "Actually, if we have a guideline that looked like that, that wouldn't have avoided this particular case that I know of over here". That's the way you test those sorts of things. Or if you want to capture this part of the problem in the light of an experience that you've had, you'd need to deal with that sort of thing because that's what you think went wrong in that case, or something of that

sort.
So the most natural thing is to actually start to discuss them, otherwise you are, to a degree, developing a guideline in a vacuum. And you want this to be a working, practical guideline. In fact, that was the whole point. It was to be straightforward, simple and useful across the board to junior doctors and others.
A. I think though, if you're going to develop a guideline, the guideline has to be based on evidence, not your practice.
Q. Yes.
A. People are there because of their experience and their interests because the guideline can only be based on the evidence, not people's opinion or anything else --
Q. No.
A. -- and with guideline development that's extremely important.
Q. I haven't asked you for opinion; I've asked you about whether the clinicians --
THE CHAIRMAN: Surely that stresses the point. If you're asking for guidelines to be drawn up based on evidence, the evidence which was available in Northern Ireland when this group met in 2001 included evidence about Adam's death and it included evidence about -- at least about Lucy's death and a query about why it didn't have

evidence about Claire's death. But that's the evidence.
A. The evidence I was meaning about good practice guidelines would be evidence in the literature, based on randomised controlled trials and that sort of evidence. That was what I meant by the evidence.
MS ANYADIKE-DANES: That's one evidence, but there's also evidence of direct evidence of things that had gone wrong, and you can see this is how that went wrong. So if you're going to produce a guideline to try and resolve those sorts of problems, do you not want to ask yourself, well, if we'd had that guideline would that have helped in that situation? If it doesn't help, maybe we need to reconsider some further aspect of that guideline. If it would have helped, great.
A. If that was your experience, that was your experience, and that was the reason for the guideline being developed.
Q. Yes. And that's why I'm suggesting to you --
THE CHAIRMAN: I've got the point, Ms Anyadike-Danes.
I'm just saying for the record, doctor, I'm very curious about how the members of the working party who have given evidence tell me that they did not discuss -- in fact, you're the first person who said they discussed the death of any child because you said earlier today that you're sure the working party discussed Raychel's

circumstances.
A. I'm sure it was touched upon.
THE CHAIRMAN: You're the first member of the working party to say that any child with whom the inquiry is concerned was discussed. I'm not going to suggest to Ms Anyadike-Danes that we won't continue this line of questioning. I'm just very curious about how it comes about that a working party, which is informed -- one of whose members said there have been five or six deaths, draws up guidelines without referring to the deaths or without considering in its discussions those deaths. But let's move on.
MS ANYADIKE-DANES: Thank you.
Just one final point:
"A general discussion then followed on the management of children in hospital. Issues highlighted were that of current guidelines for fluid replacement."
What was the general discussion about?
A. I'm sorry, I just can't remember.
Q. You can't remember?
A. No.
Q. Okay. Another point that I wish to raise with you is under 2. I skipped over it, I apologise. Apart from saying that this is a problem that had been present for many years, it then goes on to say that:

"While guidelines are in place for acute management, chronic management is not well covered."
What were the guidelines that were in place for acute management?
A. In place where? You say they were "in place".
Q. No, I haven't said; I'm reading off the minute.
A. Sorry, you're reading that. Sorry, I just am unable to help you with that.
Q. Were you aware that there were any guidelines, for example, in the Children's Hospital that dealt with the acute management of fluid replacement or fluid --
A. By acute management, that may well be resuscitation fluid. I just can't remember whether --
Q. Were there guidelines in relation to that?
A. I just can't remember if there were guidelines available in A&E or elsewhere. Certainly the guideline people would have used would have been the APLS manual.
Q. But given your position in the hospital at the time, shouldn't you have known whether there were guidelines for acute management?
A. I didn't say there were or there weren't.
THE CHAIRMAN: I am sorry, that's not fair. He didn't say he didn't know; he said he can't recall. So let's move on.
MS ANYADIKE-DANES: Ah. I beg your pardon. So there might

have been, you just don't remember?
A. Yes.
THE CHAIRMAN: And whether they were as official as guidelines or whether they were practices or protocols in PICU, we might be describing things by different names?
A. Yes.
THE CHAIRMAN: Okay.
MS ANYADIKE-DANES: Then under 2, where it talks about:
"The calculation of replacement fluid is being calculated in a number of ways."
This is still Dr Taylor. He proposed a number of recommendations to prevent the occurrence of hyponatraemia. Do you know what those recommendations were?
A. This is under item?
Q. 2, right down at the bottom. It's literally the final sentence.
A. Well, I know what he means about the different ways you can do it. You can do it on an hourly basis or a daily basis.
Q. Yes. It was the recommendations I was directing you to. Do you know what those recommendations were?
A. No, I don't, no.
THE CHAIRMAN: Does that refer back to Dr Taylor's paper,

which was up earlier?
MS ANYADIKE-DANES: I was just going to ask that.
MR UBEROI: We're obviously speculating to a degree at the moment, sir, but there is a section entitled "Recommendations" in that and it is entitled "Hyponatraemia in children".
THE CHAIRMAN: That might be it.
MS ANYADIKE-DANES: Yes, Mr Chairman, I was going to put all that obviously to Dr Taylor, but I was simply asking Dr Crean in case he had his own recollection of that.
THE CHAIRMAN: But we know there was a paper that was sent to the people who were on this committee, which had a number of recommendations and when the minutes summarise the fact that Dr Taylor proposed a number of recommendations, it might well be that that's what's being referred to.
MS ANYADIKE-DANES: Yes, it could.
THE CHAIRMAN: Doctor, just so you understand the point of this questioning, the inquiry recognises the value of the work that was done by this working party and it recognises the value of having guidelines and putting us ahead the rest of the UK in developing those. The reason why you're being asked about this run of questions was because, even after this working party met and produced guidelines, Lucy's death was still not

identified for whatever reason as a hyponatraemia death, and had still not been referred to the coroner. And the reason why I asked you my questions and Ms Anyadike-Danes asked you hers was because there is a concern about the failure to recognise or whether it was in fact a failure to recognise what had gone wrong with Lucy. Okay?
A. I understand. Thank you, Mr Chairman.
MS ANYADIKE-DANES: That was actually going to be my next question. Because you had conceded that there was some discussion about Raychel and you had some of your own knowledge about Raychel.
A. I believe there must have been.
Q. Yes. And you had, as I said, some of your own knowledge about Raychel, and you had your own knowledge about Lucy.
A. Yes.
Q. So when you're present here, if you hadn't made the connection before, can you not make a connection between what had happened with Raychel at Altnagelvin and what happened with Lucy at the Erne?
A. You know, I've thought about that a lot. I still have trouble coming to terms with Lucy, what happened to Lucy with a sodium of 127. I still can't believe it happened. Even when I reviewed the case for the

coroner, I wasn't completely convinced at that time either. Although I accept what the coroner's inquest found, I still find it hard to take on board what had happened. You've asked me, "Did that prompt me to think of Lucy?". All I can say to you is, no, I don't think it did.
Q. Well, let me ask you it in this slightly different way. Leaving aside whether you have reached a firm view as to how Lucy came to die, what you did have a view on is that her fluid management wasn't appropriate because you've already expressed --
A. Yes.
Q. -- the view that if that was the regime that Dr O'Donohoe wanted for her, then you didn't think that that made sense, that regime?
A. Yes.
Q. And what was more troubling yet is even that regime didn't appear to have been followed. So you knew that there was a fluid management problem in relation to Lucy. Whatever its role in her death was, that was an example of poor fluid management practice.
A. Yes, but that --
Q. Would that be fair?
A. Yes.
Q. Part of what this guideline is to try and address or try

and improve is fluid management practice. So when you're discussing that and the importance of record keeping and all this sort of thing, does that -- because Lucy has only died the previous year --
A. I know.
Q. -- and was a troubling case because it troubled you as to how she came to die. Does that not prompt you to think about a case where "although I don't know exactly why she died, I see that there was poor fluid management in that case as well"?
A. I don't think it did, honestly, because of the sodium level that Lucy had. I really don't think it. There were probably many examples of poor fluid management at that time that we could draw on for experience, but I unfortunately didn't think of that at that time, I don't believe.
THE CHAIRMAN: Okay.
MS ANYADIKE-DANES: Thank you. Can I ask when you did make a connection?
A. I think it was when the coroner, after Raychel's inquest, asked me to review Lucy's notes, because I think it had been brought to his attention about the similarity of the two cases.
Q. That was Mr Millar?
A. Yes.

Q. There was a second meeting. We can pull it up. It's the rough notes of it at --

MR STITT: I'm sorry. May I interject just on this point on a factual issue before we move on to the next meeting?

We've just been checking the record. You, sir, had indicated at [draft] page 92, line 21 of this morning's evidence in dealing with the fact that no child was specifically mentioned, and in terms you were saying this witness was the first person to give evidence that a specific child had been discussed. And arising out of that, we've had a look at the transcript in relation to Dr Nesbitt, and I think you'll find, sir, that at page 163 of Dr Nesbitt's evidence he says that Raychel Ferguson was mentioned, although it was not part of the agenda. He kept bringing it up. So that's at page 163 of the transcript.

THE CHAIRMAN: Thank you very much.

MS ANYADIKE-DANES: Thank you. Firstly, do you remember anything about that first meeting at all?

A. I'm sorry, I don't, no.

Q. Did you ever get a copy of these notes?

A. The minute here?

Q. Yes, the ones we've just been looking at.

A. Honestly, I'm afraid I just can't remember. I have nothing in my records about that and I've checked.

Q. In terms of its action points, the action point is for Dr McCarthy to form a small group in relation to the development of the guidelines and for Dr Taylor to inform the CSM of Raychel's death. Those were the two action points that came out of it. Were you going to be part of that small group?

A. I was hoping you might be able to provide me with that information because I'm afraid I just can't remember. I know that I was -- I'd sent e-mails around afterwards to Dr McCarthy, I think, and I was included in the circulation of things, but that's --

Q. You were part of the small group.

A. Was I? Okay. Thank you.

Q. Why I was asking you was because I was going to ask you when you were told you were going to, but since you don't remember being part of it at all --

A. Okay.

Q. The minutes of the second meeting, which took place on 10 October of that year, are at 007-038-072. Then can we pull up 073 because I think there are two pages of it? There we are. I think that's John Jenkins, who wasn't able to attend the first meeting. He's recorded first of all.

A. I must be the next one.

Q. There's you as "PC". Can you interpret what that is,

"evidence"?

A. "Evidence [something] fours ..."

I don't know what that second word is. L-A-E, L-A-D?

Q. Could be "lacking", "evidence lacking"?

A. "Evidence lacking"?

THE CHAIRMAN: It might be.

A. It could be.

MS ANYADIKE-DANES: Let me ask you another way. If you're going to be part of a smaller group to actually design and develop the guidelines, what is it that you would want to be discussing with the others in relation to those guidelines?

A. I would want to know what the actual evidence was we were basing the guideline on. Any evidence that you use has to be extremely robust. The problem is that there was probably a paucity of information out there at the time. There wasn't a lot of actual robust evidence. So if that's the case, then you have to go down to a consensus view of what you consider best practice to be amongst people with the knowledge of that.

Q. Did you think this was a worthwhile exercise?

A. Anything that improves the quality of care has to be a worthwhile exercise.

Q. Yes, I accept that must be true, but did you think that it would be possible to produce the kind of guidelines that would be a basic set to apply across a broad range of circumstances?

A. Yes, I did. I was supportive of it. And you very concisely, earlier on, summarised the most salient points and indeed the most important points.

Q. And can you recall what approach was taken? How did you actually design them?

THE CHAIRMAN: If there's no issue about the quality of the guidelines, why do we need to get into the issue of how they were designed?

MS ANYADIKE-DANES: Because, Mr Chairman, if one knew who did what, then one would see what of their own experience they might be bringing to it, but I'm happy to move on.

So far as we can tell, this is highlighting the essential features of it.

A. Okay.

Q. We see the importance of monitoring urinary samples and so forth --

A. Yes.

Q. -- and when to consult and who to consult. Is that what's on the second page?

A. It would appear to be, yes. Yes.

Q. And then if problems ... Consult?
THE CHAIRMAN: "Contact consultant centrally"?
MS ANYADIKE-DANES: And "[something] local sources of advice".
A. Yes, that seems to be it.
Q. If I pull up for you the guidelines, which was the laminated poster as it went out, 077-083-199. (Pause).
We can find it for you in a different place. Sorry, 007-083-199. If you see under "seek advice", right down at the bottom:
"In the event of problems that cannot be resolved locally, help should be sought from consultant paediatricians/anaesthetists at the PICU, RBHSC."
A. Okay, yes.
Q. So that would make PICU the contact point for queries that couldn't be resolved locally in relation to these guidelines?
A. That's correct, yes.
Q. Do you remember when and how that was agreed that the Children's Hospital would have that role?
A. I'm sorry, I don't remember.
Q. Would that have been discussed within the Children's Hospital? Because that would be committing its own paediatricians and anaesthetists to doing that or receiving those queries.

A. We've also done that with the current guidelines.
Q. I'm just thinking about these in 2002.
A. It would have been a very infrequent --
Q. Sorry?
A. It's something that would probably have happened extremely infrequently.
THE CHAIRMAN: But is that not something that happened anyway, doctor? Is it anything new to say that if there's a problem in Daisy Hill or the Erne or Craigavon that you can't resolve locally, ring the consultant paediatricians and anaesthetists at the Royal? Is that not what goes on for many years?
A. It does. I suppose they're just being explicit about it.
THE CHAIRMAN: Exactly.
MS ANYADIKE-DANES: That's what I meant. This might be the Royal taking on -- we've been discussing how the Royal perceived itself in providing a regional service, if you like, but here's an explicit reference to the Royal doing exactly that. It's going to be the point of contact if matters can't be resolved locally and this laminated poster is there throughout all hospitals and wards which are likely to treat children.
A. I take your point on that, yes.
Q. So all I'm pointing to is that this is an example of the

Children's Hospital taking on explicitly that kind of role.
A. Yes.
Q. And it has continued to do that in the documentation that has been published about guidelines?
A. That's correct, yes.
THE CHAIRMAN: Okay, it's 1.05. Let's take a break until 2 o'clock. Doctor, we will finish your evidence this afternoon.
Mr Stitt?
MR STITT: Mr Chairman, you will recall a point I raised yesterday at about this time to do with the practice in the early 2000s.
THE CHAIRMAN: Right. I'll deal with that at the end of Dr Crean's evidence.
MR STITT: It's only 30 seconds.
THE CHAIRMAN: What is it?
MR STITT: I'll follow your direction, sir. I'll be here at the end of his evidence.
THE CHAIRMAN: If it's 30 seconds.
MR STITT: I have e-mailed to the inquiry for dissemination a High Court medical negligence case in 2008 where this point is discussed.
THE CHAIRMAN: Thank you very much. That is the case of Shaw?

MR STITT: That's it.
THE CHAIRMAN: And it's discussed certainly at the end of the judgment of Mr Justice Gillen at page 16, paragraph 120. Thank you.
(1.08 pm)
(The Short Adjournment)
(2.00 pm)
MS ANYADIKE-DANES: Dr Crean, ultimately the structure of the guidelines was to have these general guidelines in the sort of laminated poster form, and then for each area to produce more tailored protocols, if I can put it that way, dealing with their own circumstances. So it may well be that the Children's Hospital's protocol, given the sorts of children it dealt with, would look different from another hospital's protocol. But in any event, that was the structure. Were you aware of that?
A. Yes, I've read it recently, yes.
Q. I thought you said that you helped on developing the protocol.
A. I know. There have been so many different guideline groups and I --
THE CHAIRMAN: Do you sit on too many committees, doctor?
A. Unfortunately, I do, Mr Chairman.
MS ANYADIKE-DANES: In any event that was the structure, wasn't it?

A. Yes.
Q. Do you know when and how that arose? Because it obviously would change the nature of the guidelines if you were going to do it in that way.
A. Why it arose that way?
Q. Yes.
A. I think ... There was a central structure there, which I feel was quite robust. It was about the management of children generally, about the assessment of children, the monitoring of children. That would be the kind of central theme.
Q. You mean the weighing and then the carrying out of the U&Es, that sort of --
A. Yes.
Q. How often you did that?
A. Yes, and the calculation of maintenance fluids and things like that. That would be the sort of central themes that would be there. I think probably people didn't want to be too prescriptive in what fluids you would use in what circumstances. There were givens there, like the resuscitation fluid we've already talked about, and there were only fluids you could use there. For example, it would give people the flexibility to use maybe one kind of fluid in a medical ward, one kind of fluid in a surgical ward, for example, and various

people would have various views on that. I'm only suggesting that's maybe --
Q. There was a difference of view, wasn't there --
A. There was, yes.
Q. -- as to what to do about the reference to Solution No. 18?
A. Yes.
Q. And in fact, whether to explicitly refer to it at all.
A. Yes.
Q. And I think Dr Taylor's view -- I think it was Dr Taylor who referred to it, as to whether it was a fluid that should be named and shamed, for example, or not, and I think you were of the view that you perhaps you didn't have to explicitly refer to a fluid.
A. Yes, it was the -- he wrote to the Medicines Control Agency --
Q. He did.
A. -- and they came back and said something like, "No, we can't do that. Every fluid, if it's used inappropriately, can be dangerous". And it's really about using a fluid appropriately and not in a dangerous way. And my view then was if a central UK agency was saying, that it would be very difficult for us to go out on a limb and ban it, really. I would have difficulty with that.

Q. Yes, you're right, he did. He referred to that letter in a letter that he wrote to the coroner later on, in February 2003. We can pull up this because that sort of encapsulates the point at 064-006-033. You can see the point he's making in the penultimate paragraph, the last sentence:
"There are clearly two camps with quite clear and reasonable arguments about the use and abuse of this fluid, Solution No. 18."
And so did that become clear to you and the others, for that matter, as you were discussing the exact wording of this, that you may not get consensus about what to do about Solution No. 18?
A. Yes, I think so, yes. I mean -- probably wrongly now when I look back on it -- I was of the view that we couldn't ban a fluid that sort of a UK national agency wasn't happy to do so. It would have been very hard for me to go against an official organisation like that, I feel, at the time.
Q. But in fact, what you're referring to is 064-010-038.
A. Yes, that's right.
Q. This is the letter that comes back to Dr Taylor's letter, and it refers to the fact that:
"... hyponatraemia is a risk during the use of that solution [but then] electrolyte imbalance is a risk with

the use of all intravenous solutions."
And then it goes on to make a point that you, I think, have made, is that what's crucial is:
"... careful monitoring of children after surgery and care not to overload patients with intravenous fluids if they were oliguric as part of the normal response to surgery."
So that's the potential for SIADH, I presume?
A. That's right, yes.
Q. So they weren't going to amend the product information at that stage. Ultimately, of course, they did, but they weren't going to do it at that stage. Was your view, if they're not going to do it, we couldn't take it upon ourselves in Northern Ireland to go a step further and say something explicit about Solution No. 18?
A. I think so, really, because again there were strong arguments being put forward in the medical literature at that time that this was an appropriate fluid to use as maintenance fluid if it was given in an appropriate way. So I wasn't completely -- this is my own personal view. At the time I wasn't completely convinced that we could ban it and that it was more about how you use it and the monitoring of children and things like that.
Q. Was not the issue that, if there was poor practice, it could become dangerous? Many things, of course, can

become dangerous, but if you've got enough experience of there being poor practice like that then although the fluid in itself is not dangerous, the chance of poor practice may be sufficiently high that it's something that you recommend people not to use or not to have?

A. I take your point and I agree with you. I think that looking back on it now, it would provide a safety net for it not to be used. If you look at what's happened recently, it was only, what, in October last year that the MRHA came out against it and the British National Formulary for Children, as late as December last year, said it shouldn't be used routinely in children. It has taken a long time for the organisations with power to come round to that.

Q. Yes.

A. And in the meantime we have all moved away from it. But you're right, looking back on it now, I would agree with everything you said.

Q. And that's actually what Altnagelvin did in their own protocol, isn't it?

A. It is. They started using Hartmann's, I think, and reading Dr Nesbitt's -- when he was here the other day, what then happened, I believe, was that people generally agreed, and we were part of that agreement as well that in the post-operative period they would change -- they

changed from Hartmann's to half-normal saline. And I think generally that's what all the hospitals were using post-surgery in children. And now we have moved back to normal saline and Hartmann's. So in many ways he was ahead of the game. Maybe it was kind of like a regressive step moving back to the half-normal saline back in 2003 and maybe what he was suggesting was the way we should have gone. I think that people were just concerned that moving to those isotonic solutions could possibly do harm. That was all.

Q. In any event, the guidelines are produced and with that sort of -- the general being in the laminated poster and the particular, if I can put it that way, being in the protocols that are to be developed by the respective trusts. They come to the trust with a letter from the CMO. In fact, she writes twice. She writes first on 25 March just to telling everybody they're coming. We can pull that up because there are some features to it. It's 006-054-436 and 437.

In the meantime, these guidelines have received the endorsement of CREST, and it rehearses the problem, and you see it in the middle:

"Any child receiving IV fluids or oral rehydration is potentially at risk from hyponatraemia."

Then it does go on to recite a specific concern

about the use of Solution No. 18, although, of course, the guidelines themselves don't explicitly exclude it. Then you see right down at the bottom the structure of what's being proposed:

"The guidance is designed to provide general advice and doesn't specify particular fluid choices. Fluid protocols should be developed locally to complement the guidance and provide more specific direction to junior staff."

And there are some instances where that would be particularly important. Then it goes on to say:

"It will be important to audit compliance with the guidance and locally developed protocols and to learn from clinical experiences."

And then the guidance comes. So that's what comes into each hospital and you have obligations, each trust, in relation to disseminating those, making sure there's adequate training around them and that they're being implemented and, of course, you have devised your own protocols, they're disseminated, they're implemented, and both sets of guidance are audited.

I'm going to ask you a little bit about that process as we work our way up to the revision to the guidelines. But in the interim, of course, there is an inquest in Raychel's case and her case is discussed at the

Children's Hospital.

So I want to ask you about the inquest. You attend that inquest and you're the person who's referred Raychel's case to the coroner. You attend and give evidence in relation to what happened at the Children's Hospital, presumably.

A. That's correct, yes.

Q. You don't refer to that issue of mismanagement that you discuss in October 2001. This inquest now is taking place in 2003; is that correct?

A. I submitted my statement to the coroner, and basically what that usually is is just your involvement with the child. That's usually what you do.

Q. Sorry, you faded away slightly there.

A. Sorry, you usually would just provide a statement of your involvement with the child. You don't -- well, I haven't, anyway, given anything more than that, a view or anything like that. It's really just a verbatim account of what had happened.

Q. Well, let's have a look at it. You're right that the statement you give is very brief. One can see it at 095-020-092. That's a statement that is ultimately translated in your deposition. Do you recognise that?

A. Yes, that's right.

Q. Just a short factual account. And then there is a note

of what was discussed. You were asked certain questions. We can see the coroner's note of that at 012-032-160. So that's his writing and you sign it. This is what he has added to your statement:

"It was obvious that she has sustained a catastrophic insult to the brain. It was clear that she was suffering from severe hyponatraemia."

And then you talk about the practice in Belfast of using a nasogastric tube.

A. Yes. I think what had happened was that Dr Sumner in his expert witness report said that in such a situation he would have put a nasogastric tube in place to be able to accurately measure the gastric losses. What I'm saying here is that in Belfast we would use a nasogastric tube not routinely. So I was saying, actually, we wouldn't usually do that in a child following a routine appendicectomy. A nasogastric tube would be used for, you know, children undergoing major abdominal procedures where their bowel maybe wasn't working for a few days.

Q. There's a little bit more as to what you said. The coroner takes a succinct account of the part that he is particularly interested in and that's what he records there and you sign it. Meanwhile, others on behalf of the trust were attending and taking their own notes.

These are not official notes, but they're indicative perhaps of what somebody heard in the evidence. We can pull up 160-010-024 and alongside it 025.

There we are. So you see your name there at the bottom half, and the discussion goes on to the other page. Is there any reason why, in a discussion like this, about what happened, the heightened awareness that you now have at the Children's Hospital about hyponatraemia and the importance of fluid management -- is there any reason why you couldn't also have expressed the view as to her management at Altnagelvin? Because you knew about her management in Altnagelvin by now. This is 2003.

A. Well, surely what I'm saying is that protocols will spread news, heightened awareness, it would be helpful to do this throughout the UK. So this is about learning and --

Q. Yes, that's learning now. That's not the point that I'm making. The point I'm asking you is: this is not strictly just evidence about your observations in relation to Raychel at the Children's Hospital, your treatment of Raychel at the Children's Hospital, and the result of it. This is a slightly different phase in the questioning where you're expressing views about certain sorts of things and all I'm asking you about is: if you

were expressing views about certain sorts of things, could you not have taken the opportunity to express a view about the likely implications of her fluid management in Altnagelvin in the development of her condition?

THE CHAIRMAN: Is there not a risk that such a question, suppose it came on behalf of the Ferguson family, might have been stopped by the coroner because it points towards civil liability? Is that not what happened, Mr McAlinden? If Mr Foster who was representing the family had asked the doctor what he thought about the standard of fluid management in Altnagelvin, the coroner might well have disallowed the question.

MS ANYADIKE-DANES: He might if he'd asked it in that way, Mr Chairman, and I take your point.

THE CHAIRMAN: The point is, if this is a record of questions and answers, we don't know what question was asked.

MS ANYADIKE-DANES: No. What I'm putting to Dr Crean is whether, given that he at that stage had made the connection between her fluid management -- and I'm not saying it in terms of negligence in that way. But with a child, post-operatively, who's vomiting like that and who's continuing to receive low-sodium fluids above the level required for maintenance, that that is a risk for

hyponatraemia. You'd formed a view about that and what I was wondering is why you didn't feel that you could share that view with the coroner in the interests of an investigation into Raychel's death and its causes.

A. The coroner will be in control of the questioning and what happens there. I mean, he did have an expert to review the case very completely, and all of the things that you have mentioned, the comments you have mentioned, were actually laid out in that expert review of Raychel's case. I got a copy of that before the inquest itself, so it's laid out there quite plainly by the expert. There was really nothing none of us could have added to that, I think.

Q. Thank you. Then if I go on to mortality, which is also something that happened afterwards. If we pull up 321-074-001 and 321-074-002. The first is not a contemporaneous document, but Dr Taylor was responding to a query as to whether Raychel and/or Lucy were discussed in an audit meeting. This is the response he gets from Dr Taylor, that Raychel was discussed at an audit meeting on 10 April 2003. If we move them along and drop the 001 and bring up 003.

You can see that this is, on the right-hand side, the minutes, and four cases are being discussed. And then, if you look on the left-hand side, Raychel is one

of them, and you can see it has you there as -- I presume it's a consultant -- and Dr Herron is doing the post-mortem. You can see that the inquest is over at this stage and the chart is with litigation and the date is April 2003, as the minutes show.

Did you attend that?

A. Honestly, I just can't remember if I attended that. That was 10 years ago. I can't remember.

Q. Would you expect to attend it?

A. I would have expected either myself or Dr Hanrahan to have been there because we were the two lead people there. My name is probably on that because, again, we go back to the yellow flimsy. But to have done something like that with someone from pathology, they would not have come unless a clinician would have been present at the same time. And the clinician would have given the clinical information and then the autopsy findings would have been presented by the pathologist.

Q. If you look at the minutes, it couldn't be briefer. It says four cases were presented and discussed. What we were being told in relation to Adam way back in 1996 about those sorts of things is that this was all sort of maybe to promote more open discussion and so forth. But this is now 2003. Is there any reason why matters couldn't have moved on and you could have a more helpful

summary of what was being discussed?

A. I don't think in that respect things had changed at all over those intervening years. There had been no directive of what should or should not have been included in that. I think people were probably just doing what had happened previously. I think that obviously -- well, you know things have changed now, that there is a summary kept and everything else and things are quite different, but that's just, if you like, a recent thing that's happened.

Q. When you say "no directive", who would have to issue a directive like that?

A. I'm not sure. It would have been something that would have happened probably high up in the organisation, whether it was the medical director or someone else, I just don't know. Would it be someone from -- it wouldn't have been litigation. It may have come from the medical director's office. Something like that.

Q. Could you have suggested it, as the clinical director for surgical paediatrics and critical care, "Look, this would actually be a lot more useful if we at least summarised the main points"?

A. I think this was the way audit meetings -- the mortality section of the audit meeting was being held at that time. I think this was probably the routine that was

happening then. There was nothing -- I suppose, I guess I could have. If I felt that this was an important issue that things should change I could have brought that up with the medical director.

Q. When we looked at the one in relation to Lucy, I think we were able to see signed attendance sheets. We don't know who attended this one. Given that this is now 2003 and what was thought about how matters had happened in Altnagelvin, was there any reason why the clinicians from Altnagelvin couldn't have been invited?

A. No, but I don't remember that happening, really. I can't think of a case where that has happened. But no, there's no reason why it can't. Well, for example, in the Children's Hospital the neurosurgeons aren't part of our team, if you like, although they come over. But for example we would have to, if it was a neurosurgical patient, get them across and things like that. But we didn't usually -- I can't remember an incident or an instance of inviting someone from another hospital.

Q. I wonder if you might help me then with what you meant in this comment you made. It was in the course of giving your evidence in Adam's case. So that's the transcript for 20 June 2012, page 11. If we could please pull that up.

(Pause).

I'm afraid I'll have to read to you what it says. I apologise for that.

THE CHAIRMAN: I'm sorry, can we check that again? I'm not sure why we don't have the transcript for an earlier part of the hearing. Would you mind just trying it one more time?

MS ANYADIKE-DANES: It's 20 June 2012. (Pause).

THE CHAIRMAN: I think there's some help coming. Just give us a moment. (Pause).

MR McALINDEN: Mr Chairman, for assistance, it's on the computers here. It's actually Day 30. (Pause).

MS ANYADIKE-DANES: If we can go to page 11. Thank you.

What I was asking you to explain is that comment that you didn't have people come from other hospitals. This is a question dealing with the mortality meeting for Adam and who you would invite to attend and so on. And then if you look at your answer at line 10 what you're trying to say is that we tried to invite individuals so that everybody who was involved would be there, but there are times when that couldn't happen. And I've asked you -- you're being asked why that might not be possible and you say:

"They may have to attend a mortality meeting elsewhere, in a different hospital, for example."

What did you mean by that?

A. Okay. It was the Royal Hospitals back then and maybe I was going through an identity crisis. I see myself as being part of the Royal Belfast Hospital for Sick Children. You've got the Royal Maternity Hospital, you have the Royal Victoria Hospital and you have the dental hospital, but they're part of the Royal Hospitals. So you could easily have a neurosurgeon, for example, who has to attend a mortality meeting in the Royal Victoria Hospital. I see that as being a separate hospital to mine.

Q. So what you mean is it wouldn't be your practice to invite somebody from a different trust?

A. Yes. Sorry, that is what I meant.

THE CHAIRMAN: That's fine.

MS ANYADIKE-DANES: Thank you.

Did you know at that stage whether Altnagelvin had actually instituted its own audit or adverse incident procedure in relation to Raychel?

A. I don't think I would have known that.

Q. Would you have thought to communicate with Altnagelvin the outcome of the discussion of Raychel at the Children's Hospital?

A. I think -- I'm not sure the outcome of our discussion would have been basically the work that happened with the Department of Health, to be quite honest with you,

I think.

Q. Sorry?

A. I think much of our discussion would have been bringing to the people who attended the meeting the outcome of the working group from the Department of Health. To me, that was the main outcome, highlighting the fact that hyponatraemia can occur if fluids are not given in an appropriate way, and what the recommendations from that working group were. That's what I think probably would have been the centre of the discussion there.

Q. Yes.

A. And that's probably what happened in Altnagelvin, if they had a --

Q. I was simply asking you if you knew what happened there.

A. No, I don't know what happened.

Q. The reason I was asking is, from the public point of view, Altnagelvin had quickly identified an issue with Solution No. 18. And in fact, that was what spurred them on to make -- not only that, but an important motivating factor for communicating with the CMO and others because they identified a potential risk around the use of Solution No. 18. But in fact, as we have heard from them, they had also, in their own meeting, identified fairly basic issues to do with poor fluid practice: the record keeping, recording of vomit, urine,

U&Es, and so forth. So a range of things that are just not very good practice.

A. Okay, I'm not aware of the detail of this because I haven't been following that part of ...

Q. The point that I'm putting to you is some of those things may have come out in a discussion about Raychel in the Children's Hospital, and what I'm inviting you to think on is whether the Children's Hospital would have regarded it as helpful to have communicated to Altnagelvin whatever was the results of its own discussion.

A. I think we would have all found it helpful, both learning from what Altnagelvin had done and vice versa as well. I think communication is both ways and I think we both would have benefited from that communication and learning.

Q. Yes. Would there be any reason why that wouldn't happen? You can recognise a potential benefit, but why wouldn't it happen at least from the Children's Hospital's side?

A. It may seem very obvious today looking at this, but I don't think it was obvious to us at the time to --

Q. What?

A. To share that, what we had -- what people may or may not have said at the meeting. I don't think that was

something that was obvious to us at the time. That's what I'm saying, really.

Q. Professor Scally produced a report in relation to Lucy, which has some similarities in terms of you receiving a child with a certain condition when there wasn't very much more that you could do at the Children's Hospital and then having concerns about fluid management. We don't need to pull it up, but the reference for it is 251-002-017. And he says that if there was any significant suspicion amongst the staff at the Children's Hospital that Lucy's death was due to inadequate treatment then the matter should have been reported within the mechanisms available within the Children's Hospital. He says:

"In addition, under these circumstances, the Sperrin Lakeland Trust should also have been informed in a formal manner."

And that was his view in relation to Lucy. I'm asking you whether you don't think the same would apply in relation to Raychel, the following year.

A. Well, I would consider his view would be the same, I just think we were lagging behind that at the time. I don't think that -- I don't believe that was maybe our culture at the time. That's not the way we did our business, that way.

THE CHAIRMAN: In fact, given what you've said about your perspective on Lucy, which you still have some difficulties with --
A. Yes.
THE CHAIRMAN: -- Raychel would be a clear-cut example?
A. She would be much more, yes.
THE CHAIRMAN: Thank you. In essence, I understand your answer to be, doctor, that that just isn't what happened at the time. Looking back on it now, there should have been some level of communication, but that just isn't the way things happened.
A. I just don't think people had thought the process through properly in that level of detail. The one thing I do know about incident reporting is that -- I mean, I was checking up on stuff the other day and I was told that, you know, what we do today is even completely different from what it was two years ago. Every death, whether it's expected or unexpected nowadays, is now investigated. If a child dies in your hospital and they've come from elsewhere, the first thing you do is fill in an incident report, make sure one's been filled in in the other hospital and you work together on that. The structures are there, the policy is there. It is top-down, that directive. There's no -- you can't not think about it, it's just there to be done. It's

totally and utterly explicit now and it wasn't back then. But I take your point exactly: that would have been a very, very good thing to have done. I agree with you.
MS ANYADIKE-DANES: Finally, on discharge, you have previously said that -- in fact you said it in your transcript of 4 June 2013 at page 144, but we don't need to pull that up:
"It's wrong not to send a discharge letter. It's essential."
A. And it was wrong here not to send a discharge letter, I agree. I absolutely agree.
Q. But how could that happen in two successive cases?
A. I don't know. I ... I honestly don't know. I really don't know. I ... As one of the anaesthetists in the intensive care unit at that time, I don't remember ever myself having written a discharge letter. It was usually done by the consultant paediatrician or surgeon. I think -- I don't know. Whether it's because the notes went away and they would have gone to the pathologist and then gone to litigation and they didn't go back. I don't know. It was an omission and it should have happened.
Q. Well, by the time Raychel's case has been discussed in the inquest, you'd have known there wasn't

a discharge letter at that stage.
A. Not necessarily, because --
Q. Well, you'd have been going over her notes for the benefit of the coroner.
A. I probably was just looking at the aspects of my report that I needed to fill in. I may not specifically have looked for a discharge summary.
Q. But then, Dr Crean, who does look at these things to see what's missing and therefore what should be improved?
A. Well, it should have been the consultant in overall charge of her care who did that, and that was not me. It should have been done though.
Q. Are you saying that's Dr Hanrahan?
A. Yes, because he would have been the person, as Dr MacFaul had stated in his expert report, about the roles and responsibilities of anaesthetists and physicians and surgeons working in the intensive care unit.
Q. But if that's Dr Hanrahan, then Dr Hanrahan didn't send one in relation to Lucy in 2000 and hasn't sent one in relation to Raychel in 2001. Who is there to recognise that there is a deficiency that maybe ought to be addressed by some prompting or maybe a little bit of training? Who picks up those sorts of deficiencies?
A. I don't know. I don't know who would pick up the fact

that ... You know, maybe if the hospital who had referred -- maybe if Altnagelvin had said, "Look, we haven't -- that's not a very satisfactory way that they have to tell you that you should be doing something. There should have been some sort of internal way to do it. I don't know.
THE CHAIRMAN: Okay, thank you.
MS ANYADIKE-DANES: More to the point, very often those discharge letters go to the GP, and then the GP, properly informed, is in a position to assist the family.
If we're keeping it roughly chronological, then that having happened, we're now in the process or the era for the implementing and monitoring of the hyponatraemia guidelines. Although you couldn't recall it again when I put it to you, but you were part of developing the Children's Hospital's protocol.
A. Yes.
Q. Was it you alone or was there some group for doing that?
A. The recent one, you mean?
Q. No, no, no, the protocol that the CMO required to be developed alongside the guidelines that she issued in March 2002.
A. I'm not sure that was directed towards me, if I remember reading it on the screen there.

Q. No, I didn't say it was, but I thought you had earlier told the chairman that you were involved in doing it.
A. What I said I did do was, whenever the NPSA alert came out in 2007, which was later, that I was involved in doing the policy then, and --
Q. Then we'll come to that one, Dr Crean. If I may ask you this: who would have been responsible for drafting the Children's Hospital's protocols, to sit alongside the CMO's guidelines?
A. I guess that would have come down from the chief executive, the medical director, to the clinical directors to ensure that that was done.
Q. And would that have ultimately made it your responsibility to take on, given that you came into being the clinical director in 2003?
A. I mean, the ... That would have happened, I would have thought, around the time that the letter came down, and that would have been enacted then.
Q. So it would already be in place, you think?
A. It should have been in place, I think. I know that there were discussions and things. I was actually trying to find -- and this is maybe what you're coming to -- the sort of policies and guidelines that would have happened then, and I wasn't able to find any on your website. So I ...

Q. Is that not something, though, that would have involved some discussion, because now you are going to have a prescriptive protocol? So some of the differences in view that Dr Loan had experienced and identified somehow all those have to be resolved so that you can have a protocol that achieves -- well, there would have to be some sort of consensus as to what goes in that protocol?
A. I believe what happened then was that the fluid of choice around hospital, or just about everyone apart from the neonates, was half-normal saline in 2.5 per cent glucose. That became the standard solution and in theatre we were still using Hartmann's. I think the babies had what was referred to as "basic solution". It was kind of like fifth-normal, but it had 10 per cent glucose in it and some potassium. So generally, the standard solution used everywhere was the half-normal after that.
Q. The guidelines come in in March 2002. There is a special advisory committee paediatrics meeting in September 2002. You are there for that. The issue of hyponatraemia is discussed. If we pull up 075-077-294 and 295. Under the title "Hyponatraemia" it says:
"Members commended the guidance on the A2 laminate circulated previously."

"It was suggested that an audit of the guidelines in due course would be valuable and the CMO asked members to suggest names and contact details of possible registrars in either paediatrics or anaesthetists who would be interested in taking that forward."
So you are there along with a number of others, Dr McAloon being one, Mr Boston, and the senior medical officer, Dr McCarthy, and the CMO herself. So there's a group there, discussing the presentation of the hyponatraemia guidelines and it's suggested that audit of the guidelines in due course would be valuable.
At that stage, so far as you were aware, had the Children's Hospital put in place any audit for its protocol? Because that was the other thing that the CMO wanted to happen.
A. I can't remember of any one at the time. I can't remember. That's not to say one didn't happen, but ...
Q. I understand that. If you were going to put in place an audit for the implementation of the guidance and protocol from the Children's Hospital's perspective, what would that involve?
A. Well, the gold standard would be 100 per cent compliance with the guideline, so that's what your audit would be measuring against. So it would be about the support

systems that we'd talked about: reassessing children, U&E done every day, fluid calculations done appropriately. Those sorts of things.
Q. Those would be the things you'd be auditing. What's the system of audit? Who would be doing it and who would they be reporting to?
A. Within the hospital you mean?
Q. Yes.
A. They would be reporting, I guess, to whoever was leading that audit. You could have got -- if you're trying to assess the quality of the prescribing, it would probably need to be a doctor and a doctor with some experience. So for example, what I've done in the audits I did, I got one of our anaesthetic fellows to do that audit with me, and they would have gone round the wards and looked at all that information. That's the way I collated the information in conjunction with the audit department as well.
Q. And when I had asked you before as to where you got your information from to assess the excellence of standards and governance and so forth in your role as chairman of that committee, and you talked about seeing audits, is this the kind of audit that would come to you? Sorry, would you want this kind of audit to come to you?
A. That particular audit I would have wanted it come to me

because it was an audit, if you like, stipulated by the Chief Medical Officer. So it's kind of an important audit, it's one of the things you'd want to tick-off of having been done and reassured that you could stand over it, I would have thought.

Q. So --

A. But I don't remember --

Q. I appreciate you don't remember any of this, but this is the kind of audit that you'd want to see and keep an eye on, if I can put it that way?

A. I would like to see that it was done.

Q. Yes, thank you. Also, at that same meeting, it's item number 9 -- I'm going to give the reference although I don't think we can access it at the moment. 075-077-298. That item 9 is the upper age limit for admission to the Children's Hospital, and there's a paper been provided for it. Dr Craig is enquiring about raising the limit for admission and referral to the Children's Hospital from 12 years to 14 years. And there's a general discussion about that.

Why I raise that is, in the course of your discussions about the guidance and where they might go and the teaching that would have to be built around that, was there any discussion about the fact that some quite small in stature children, although older by

chronological age, are admitted to hospital and you would want to make sure that their treatment was being covered in a way that complied with the guidelines? Was there any kind of discussion about that?

A. Sorry, I'm not concentrating very well. Could you repeat that last bit? I'm sorry.

Q. Yes. Not all children fit the profile for their chronological age.

A. Yes.

Q. Some children, for various reasons, are actually very much smaller than their chronological age.

A. So for example a 18 year-old who's maybe the size of an 8 year-old; is that what you mean?

Q. Exactly. In fact, we have a child and elements of their treatment that we are looking at in the investigation of Conor Mitchell. And he had the body habitus of an 8 or 9 year-old, even though I think he was about 15. So was there any discussion that there are children like that and one would have to be alive to that if you wanted their treatment to comply with the guidelines?

A. I don't remember that having happened. Even looking at the NPSA guideline, they just look at children from 4 weeks of age up to their 16th birthday. Even in the stuff I'm doing with NICE at the moment, we have only just looked again in an age range, and that's something

I hadn't actually considered. It's something I'm going to have to take back to them. I hadn't really thought about that.

Q. Thank you. Now that I've put it to you in that way, can you recognise that that might be something significant?

A. Yes, I do and I hadn't thought of that.

THE CHAIRMAN: I'd rather got the impression, doctor, that there wasn't much consistency in hospitals in Northern Ireland or beyond about what the cut-off point is for, say, a teenager being put in a children's or adult ward; is that right?

A. I think in the rest of the UK there's a lot more consistency about that. I think that what has happened in the Children's Hospital is that we had capacity issues, we just didn't have the beds. It's not that there was an unwillingness. Okay, it was slightly more than that. There was a capacity issue -- that's one thing -- and there still is. But then there's another issue about children who are adolescents and the sort of medical problems that they may have as well. So you can get girls with gynae problems and we don't have like a resident gynaecologist, so you're moving into kind of a different illness thing as well.

THE CHAIRMAN: When you say there's more consistency in

Great Britain than there is in Northern Ireland, what --

A. I just think that, you know, that most children's hospitals and departments would usually take children up to their 16th birthday. I can't remember the name of the papers now, but they get children up to their 19th birthday even. Some of the recommendations and standards are for the care and treatment of children and young people because they extend it. They don't just stop at children, they go up to young people up to the age of their 19th birthday.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: The point that the chairman was making is there in another special advisory committee paediatrics meeting that you attended. It was revised in January 2005, the notes of it. We might be able to pull this one up, 320-057-002.

This is a meeting that seems to have started in October 2003, reconvened in February 2004 and finally revised in January 2005, but leaving that aside. The point that the chairman, I think, was putting to you, is that -- you see it there under "Upper age limit for admission to Children's Hospital":

"Custom and practice has evolved independently in trusts and there was a disparity in practice between different trusts, as well as within trusts, between

elective and emergency admission."

Therefore, I presume that that might have some impact on the age of children going in. Then there's the reference to:

"Members from the Children's Hospital highlighted that provision was being made to accommodate up to 15 or 16 as part of phase 2 planning."

But that's the new addition to the Children's Hospital, isn't it?

A. That's correct, yes.

Q. So at that time you had recognised that you needed to build in a facility to take account of these adolescents that you have just been talking about?

A. Absolutely, yes.

Q. But had you appreciated, or not, the chairman's point that there could actually be a significant variation between the trusts as to what they considered paediatric?

A. I think that the Royal Belfast Hospital for Sick Children was lagging behind what was happening in other trusts in that I think that --it's my belief anyway that they were able to accommodate children up to an older age than we were. We just didn't have that capacity at the time. And nowadays, I think we are up to almost our 14th birthday now.

Q. Yes. Then there are two things that have to be audited. One is your own protocol and the other is the CMO wanted the guidelines and adherence to her own guidelines audited. If we take the individual protocols, the CMO writes on 4 March 2004. One sees that at 007-075-148.

She says in the middle paragraph:

"When the guidance was issued, trusts were concerned to develop local protocols to complement the guidance. Emphasis was given to the need to ensure implementation. It was also noted that the guidance should be supplemented locally in each trust with more detailed fluid protocols relevant to specific specialty areas."

Then it goes on to say:

"The purpose of this letter is to ask you to assure me that both of these guidelines [that's her guidelines and the local protocols] have been incorporated into clinical practice in your trust and that their implementation has been monitored."

Were you aware of that letter?

A. I don't remember seeing that letter, but there's been lots of things today, unfortunately, I just can't remember.

Q. I understand. But in your position, either as clinical director, which is what you were at that time, and also one who had been present in the original working group,

or as the chairman of the excellence and governance committee, would you expect to see a letter like that?

A. I don't know. Certainly if I had seen a letter like that, then that was basically a job for me to do because that's the level of the organisation I was at. If I'd received that, then basically that's basically telling me to get on with it and give feedback so that they can respond to that, I would have thought.

Q. If the chief executive was going to respond to the CMO, from whom would the chief executive get the information to be able to respond, given the structure of the hospital as it then was?

A. Well, it would have to have gone down through the organisation to someone like me to get that sort of information, I would have thought.

Q. Yes. In fact, there are responses to that within the time limits that the CMO asked for, which is 16 April, but not from the Children's Hospital or in fact the Royal Hospitals. What happens is that the senior medical officer, Dr McCarthy, writes out on 3 November 2004, looking for the remaining responses, the Royal being one of the remaining. And ultimately, that's answered on 16 December 2004. 073-030-136.

It's extremely short:

"Dear Dr McCarthy. Thank you for your letter [of

the relevant date]."

THE CHAIRMAN: Sorry, who wrote the letter?

MS ANYADIKE-DANES: Dr Michael McBride, who was the then medical director. And since you don't have it, let me tell you exactly what it says:

"Thank you for your e-mail dated 3 October 2004. Please find enclosed copy correspondence dated July 2003 and March 2002 [that's from their end]. I write to confirm this information was disseminated within the trust."

So what's actually being asked is that:

"... you assure me that both of these guidelines have been incorporated into clinical practice in your trust and that their implementation has been monitored."

There's absolutely nothing in that letter from Dr McBride to say whether they have been monitored, or if they have been monitored, what the result of the monitoring is.

There is that kind of information from other trusts, but not from the Children's Hospital. Do you know whether, at that stage, the Children's Hospital was monitoring either the CMO's guideline or its own protocol?

A. I know I wasn't, but I can't answer if anyone else was. I just can't remember and I just don't know.

THE CHAIRMAN: Okay.
MS ANYADIKE-DANES: Well, given your position as chairman of the committee of excellence and standards or standards and excellence, shouldn't you have known that?
A. I can't remember if ... I can't remember if it was being done. It may or may not have even been known to me as chairman of that committee.
Q. Sorry?
A. It may or may not have been known to me at that committee if it hadn't come down that far to be enacted, is what I'm trying to say. I just can't remember.
Q. But you would have known, as part of the original working group, that these things were to be audited. I mean, in your position as a member of that working group, because that's what's part of the record of that minute of that first meeting, and you were there at the SAC paediatric committee meetings, which talks about "we ought to have these things audited". So you were in a particularly good position to know that the Royal ought to put in place some mechanism for auditing compliance and standards.
A. You would think so, yes, but I honestly just can't remember.
Q. Then the CMO, in a separate way, wants to review the guidelines themselves to see if there needs to be any

further development. In fact, you include it on your CV, the fact that you were part of the Northern Ireland regional paediatric fluid therapy working group, 2006. Is that the group that you mean, the group that was reviewing the 2002 guidelines?
A. Was that the one Dr McAloon was chairing?
Q. Yes.
A. Yes. I was a member of that, yes.
Q. What happens first of all is that, having been there at that SAC paediatrics meeting when it's said that it would be a good idea to have the guidelines audited, that's exactly what happens with Dr McAloon. He appears to take it upon himself to do that very thing. He conducts a regional audit of adherence to the guidelines. In fact, we can pull up 007-092-234.
This is Dr McAloon and he is attaching to this letter that he's directing to Dr Campbell, the CMO, the regional audit that was conducted in 2003 to 2004 to examine adherence to the guideline and he said he was going to submit it to the Ulster Medical Journal, which he did, and it was duly published the following year, 2005.
The actual audit itself -- if we pull up 007-092-235, and pull alongside that 236; do you recognise this?

A. Only because I saw it a couple of days ago.
Q. You didn't see it?
A. I just can't remember. I just ... I saw this a couple of days ago on the inquiry website, but I can't remember. I'm sure I did see it previously, but I just don't remember.
Q. Did you know Dr McAloon was conducting an audit of this type?
A. I have to say I'd forgotten about this audit altogether, but there's something at the back of my mind that it had happened. This was about 10 years ago; isn't that right?
THE CHAIRMAN: Seven.
A. I thought it said --
MS ANYADIKE-DANES: 2004.
Is there any reason why the Children's Hospital, as the regional hospital who might see not just their own cases but referrals of serious cases to them, couldn't have put itself forward to carry out the regional audit?
A. We weren't in that audit; is that what you're saying?
Q. No, no.
THE CHAIRMAN: Ms Anyadike-Danes, we don't need to go into that. If it's a regional audit and it's coming from this group, the Royal doesn't have to put itself forward.

MS ANYADIKE-DANES: No, no, I'm simply asking whether there was any thought amongst its own clinicians that they might do it.
A. Honestly, I just can't remember.
Q. But what the audit found was that there was not full compliance with the CMO's guidelines. In fact, one can pick that up if we go to -- if we can put page 238 and 239 alongside each other. Then you see it, just in the bottom paragraph where it says:
"In March 2002 ... the evidence from this regional audit is that implementation has so far been incomplete."
I'm not sure of the reasons for it, but that is the evidence that they receive, or at least that's what they conclude from the work they've done.
Then if you look at the actual conclusion it says:
"To conclude, it is probable that the current guidelines will be modified in conjunction with the developing evidence base on appropriate fluid therapy in situations where physiology is not normal, such as [and of course the case of Raychel is a case of that] post-operatively."
I take it from the answers that you've given to me so far about this is you don't know how the Children's Hospital fared in terms of compliance with

the CMO's guidelines?
A. I honestly -- I'm sorry, I just can't remember. But that was a very important point they've made there in the conclusions because it's identifying children, sick children, and children post-operatively, because I think in the past we had made assumptions based on normal fit and healthy children about fluid practice and fluid management, and I think that this was a very important step forward here to highlight those specific areas there.
Q. Is that not the lesson in Arieff's 1992 paper?
A. Yes, it was, very much so, but you can see that -- I mean, I see it sort of day and daily now. People think very carefully about fluids in children. If you look round the wards in the audits that I've been doing to try and get children who have been on fluids from the day before and are on fluids today, it's really hard to find children like that anymore because the fluids are taken down so quickly now. They're not just left on fluids and they are started on oral fluids as quickly as they can. So people think very hard now about whether -- looking at the need for fluids at all. So it has definitely worked its way through.
Q. Yes. Then after this, it's Dr McCarthy who writes to a number of clinicians, you included, on 12 August 2004.

007-055-124. This is really part of taking the guidelines forward. The guidelines were produced in 2002. We're now two years down the track. There's been an audit of compliance and this is now looking to what revisions, if any, one might make to the guidelines. You can see you're there in the distribution, Dr Crean. She's seeking a short meeting to facilitate discussion on proposed amendments.
So far as you were aware, had matters reached a stage where you thought there was benefit in revising those guidelines?
A. Again, I'm ... I keep going on like this. I just really can't remember.
Q. Do you know why you might have been being selected to be part of this group to discuss possible amendments?
A. No, I don't, no. Dr McCarthy may remember, but I just can't remember.
THE CHAIRMAN: I presume it's because you're a paediatric anaesthetist of considerable experience in the specialist regional centre.
A. Thank you for that.
MS ANYADIKE-DANES: What happens to that? Do you participate in the revisions?
A. Um ... Again, I'm not sure. I just can't remember. I just can't remember.

Q. Well then --
A. Maybe you can help me with that.
Q. I might be able to help you with that. This is what I was wanting to know because it seems to me that at some stage things change and you don't seem to be part of taking matters forward. It's 320-126-125. This letter is from the CMO. You see it's dated 5 November 2004. There, they're discussing not revising the guidelines any more, you see it in the first paragraph, but rather having a care pathway for fluid management. So leaving the guidance as it is and to produce this care pathway for fluid management, which she seems to think is an excellent approach.
Then as a result of that, she is asking Dr McAloon if he would convene and chair a small multidisciplinary group to take that forward. Were you aware of this?
A. Honestly, I can't remember, but it seems to be a very, very sensible approach.
Q. Do you know what the difference is? What a care pathway is?
A. Yes. It's a very, very structured thing that all children would fit into in relation to their fluid balance. You can have care pathways for cardiac surgery, you can have care pathways for the management of asthma. It's a structured approach in the management

of children, and, if you like, it takes the guidelines and sets it in stone and that's the way you follow it. It's the next way forward in many ways.
Q. And is a care pathway something that was ultimately produced in relation to Alert No. 22?
A. Um ... Let me see what we did. We produced a policy so that we enacted the alert into our own hospital. The policy is basically the law, you have to do what's there. We put together a brand-new fluid balance and prescription chart, and on that chart, all the prompts will be there to make sure things are done. It's not quite a care pathway, but it's probably as good as you can get on a fluid balance and prescription chart.
Q. I see. So the next correspondence that we have seen in the inquiry actually relates to taking that fluid management care pathway group forward. We don't see you involved in that. Can you help us with that?
A. I'm not sure. I know that Dr McAloon and Dr Jenkins worked together in the same hospital, so it may well have been that it was easy for them to do this themselves. They may have -- I don't know, they may have phoned us up or phoned me up or phoned other people up, just to keep abreast of what was going on or for advice, I don't know. But I would trust Dr McAloon very much in his abilities to carry something like this

forward.
Q. There's no suggestion of that. It's just that when you said that you were part of the regional working group, I was trying to see what happened with that group and your role within that.
A. Okay. I just -- I don't have any of those things in front of me today.
Q. We have only actually been provided with one set of minutes of the group, 320-126-114. In fact, it's 2005. You can see Andrea Volprecht, for example, Paul Loan, Jarlath McAloon. They all seem to be part of the group, but we saw no further reference to your involvement after that initial letter asking you to be part of something with a view to revising the guidelines. No longer revising the guidelines, now into the care pathway. But we've seen no reference to your involvement and I was wondering if you could help us with -- as the chairman said, you're a very senior paediatric anaesthetist. What was your involvement in taking the guidelines forward, revising them or making them more appropriate for the times?
A. I don't know, I just can't remember. I have no idea.
Q. Were you aware of being involved at all?
A. I just can't remember. I've taken over other responsibilities at that time as well. All I can

remember is that my life was extremely busy at that time. I just can't remember.
Q. Well, maybe you can't remember this either. So far as you're aware, was a care pathway ever devised before Alert No. 22 was issued and things took a slightly different course, so far as you're aware?
A. I don't remember one being. I don't ... I ... I mean, I ... I don't think so. I don't think there was. But maybe you can prove me wrong. I just can't remember.
Q. No, no, I'm just trying to find out. The origins of Alert No. 22 is in a study that Way and others do as to perioperative fluid therapy in children. They conduct a survey of current prescribing practice, so probably on a slightly larger scale, but maybe not so dissimilar to that which Dr McAloon had done. They do that and it's published in 2006.
A. That wasn't anything to do with the alert, with the NPSA alert.
Q. It did ultimately translate into that if you'll bear with me. The upshot of the --
THE CHAIRMAN: Sorry, if the doctor's saying that that had nothing to do with Alert No. 22 --
A. What had happened was that back in 2002 or 2003, something came out from the Royal College of Paediatrics and Child Health about safety issues with fifth-normal

saline, and then that, I think, in 2003, was in the bulletin -- the Royal College of Anaesthetists have a journal that comes out every month and they also have a bulletin with that. That same thing that came out in the RCPCH went into the bulletin, and I think it was a banner headline on the college's website at that time. And Isabelle Walker was the senior author of that paper. What she was doing was trying to find if people had implemented that kind of statement that came on the college's website. And in fact, I remember talking to her and saying, "Look, I know that NPSA are working on this and trying to come out with an alert, maybe you should contact them about the work that you're doing."
But the NPSA thing came up through a different source and in parallel with that the Way article was happening at the same time if that is at all helpful to you.
MS ANYADIKE-DANES: So did the "Survey of current prescribing practice" that Way et al carried out, did that influence at all the decision to issue Alert No. 22?
A. No, because the working party for the NPSA had already been started. They were separate things.
Q. In any event, that is carried out and it is provided to the NPSA?

A. Yes, I think some of the prime movers in getting the NPSA to bring this up as an alert were people from Northern Ireland.
Q. Yes.
A. People like John Jenkins and Miriam McCarthy, for example.
Q. And Dr Taylor?
A. Maybe, I can't remember. It's just -- I asked -- a girl called Mary Cunliffe in Liverpool was part of that as well and I remember asking her some time ago where did this all come from and she thought a lot of it came from people from Northern Ireland because of their concerns.
Q. At that time did Northern Ireland provide its guidelines to the NPSA, so far as you're aware?
A. I don't know, but I would have found it difficult to understand if they didn't because they were involved in that. And many of the outcomes of that alert were very similar to the things that were happening here as well. Some of the recommendations, I mean, were very similar to what was happening here.
Q. Is it possible, Dr Crean, that at some stage it was thought that it might be preferable, rather than to develop our own care pathway, to persuade the NPSA to issue an alert, which would then be a document that applied throughout the United Kingdom? Might there have

been that thinking?
A. I honestly don't know. On the face of it, the care pathway seems very good, but I think people were working through various avenues at the same time to try and get -- getting it moved up from a regional issue to a national issue.
Q. And when they finally did get the Alert No. 22, then did that then translate into something that had to be complied with in Northern Ireland?
A. Yes.
Q. And there was a letter, was there not, from the department, 303-028-367, which is 27 April 2007? You see at the bottom that the Health and Social Care organisations are required to implement the actions identified in the alert by 30 September 2007.
A. Yes, I see that.
Q. How did you get to hear about that?
A. The implementation date?
Q. The fact that an alert had been issued, which you were now required, or at least the trust was required, to implement by 30 September 2007.
A. At the time I was president of the Association of Paediatric Anaesthetists, and some of our members were on that, so I knew about all this happening almost from the inception of the group that was working on that.

Q. Does that mean you knew that Alert No. 22 was coming?
A. Yes.
Q. Because they issued it in draft for comment.
A. Because our organisation was actually asked to comment on the draft document that came out, I think late in 2006. This one -- I think the final document came out in March 2007. And there were timelines in that document that various things had to be done.
Q. Yes. Therefore, did you know, at that early stage, that when this was finalised into the alert that was going to be issued, that we would -- "we" as a trust -- have to comply with it?
A. Compliance with the document should have taken place. I think, though, that that compliance was patchy. For example --
Q. No, sorry, that's a slightly different point. You know it's coming --
A. I know it's coming.
Q. -- because you're in a group in which you have that early information. Not only that, you are asked, and you do, to provide commentary on a draft version of it.
A. Yes.
Q. And when it finally issues you know that you're going to have to -- well, not you personally, but the trust is going to have to comply with it.

A. Yes.
Q. So are you putting in place whatever is required to ensure that the trust will be able to comply with it and demonstrably so?
A. Before it came out or afterwards?
Q. Ready for when it comes out.
A. I don't think we -- I mean, you have to ... With an organisation -- like any of the organisations in the health system, the alert actually has to come out before you -- you can't pre-empt what's coming out.
Q. I'm not suggesting you'd set up the whole -- I mean, one of the benefits of knowing that something is coming is that you can begin to work out how we will deal with this, even if --
A. Okay. I don't think we did that. I don't think that we tried to put things in place before it happened.
Q. Well then, when it did issue, and you receive the letter or the trust received the letter on 27 April 2007, what was put in place to enable the trust not only to comply with it but to confirm that it had done so by 30 September 2007?
A. Again, I can't remember the detail of what actually was done, but I ... I'm sure there was some sort of priority to get things done at that time.
Q. Would that have been something that you would have been

involved in, given your particular position?
A. It probably was something I was involved in. I was involved in so many things to do with IV fluids over the past period of time, it's very hard for me to remember each particular bit. I know that the fluid balance and prescription sheet was -- other people had been given the task to take that forward and that had kind of ... They'd had a lot of difficulties moving that forward after a period of time. I know I was brought in to try and make it work, and we did take that forward. People got lost in the detail of it and it was just trying to sort that out, and I was brought in to try and do that.
Q. And an important part of that was going to be training?
A. Yes.
Q. And so that's not something that one necessarily wants to start from scratch, one wants to sort of put in place the way in which that's going to happen because you're going to have to satisfy the department that you are training appropriately. So who would have been in charge of that in the trust?
A. I know that the doctors, the new trainees coming in, would have been trained by -- there was an induction programme that they had whenever they started every six months. And fluid therapy would have been part of that induction package, that training that happened. I think

it was maybe Dr Chisakuta who was involved with that at that time. The other thing that people were given to use was the e-learning module of the BMJ.

Stephen Playfor, from Manchester Children's Hospital, was the person who developed that and in fact he was one of the external people involved in one of the RQIA visits to the trust looking at IV fluids as well.

Q. I'm just about to come on to the RQIA visits, but before I do that, the systems for training and so forth would have had to have been in place, for the CMO's guidelines, for 2002?

A. I --

Q. You would have had to have a system for training people so that they complied with those guidelines.

A. Yes. Paul Loan, actually, if you remember, he was very involved in the training of the junior staff. From memory, anyway, he was the one who would have been involved in the IV fluid therapy training at the induction process.

Q. Yes. The point that I'm making is that this is not a new thing. You've already had a set of guidelines for which you'd have to ensure that you've got an appropriate training programme, you've got an audit system that's being complied with, and you've got a way of addressing any failings. So you'd already have to

have that system up and running.

A. Yes. It was pretty loose, I think, but I know that -- I don't know if you want me to move forward from there, but certainly things have moved forward and that -- I feel that things have moved forward from the e-learning thing as well. I think that what Dr Julian Johnson has done in the Belfast Trust is quite superb in that the slide show he has developed, the PowerPoint slide show about how to use the fluid balance chart and the prescription chart, how to use it, how to fill it in --

Q. When was that introduced?

A. I think it's been up on our website for about two or three years and -- our Internet site. And what he has now done is he's -- I think we're almost agreed that that is going to go round all the trusts in Northern Ireland. So it means that any trainee -- and I think I spoke to you before about the fluid balance and prescription charts. There has been an agreement to use the same chart in each of the hospitals now.

Q. In each of the hospitals in the trust or each of the hospitals in the region?

A. No, in each of the hospitals in Northern Ireland. Now, you can badge your chart so it says "Royal Belfast Hospital for Sick Children", but it's the same chart

that's being used everywhere. This really means now that no matter where a trainee starts, they'll be getting the same induction pack, they'll be using the same paperwork, the same fluid balance and prescription charts, and I don't know of any other region in the UK that has done this.

In my first meeting with NICE a few months ago, I actually brought one of these along and I said, "Look, this is the way forward. If you are seriously going to consider putting a package together that includes training, that includes fluid balance and prescription charts, this has to be one of the fundamental areas that you look at."

We've talked about difficulties in doing that in such a big region as England, but at the end of the day there is something there to work on and it's something I feel very strongly that we in Northern Ireland have brought this forward and certainly that could be disseminated round the United Kingdom.

Q. That's part of the benefits of being a smaller territory in a way.

A. Yes.

Q. It becomes easier to do those sorts of things and also to monitor whether they're being complied with.

A. I think it's also the fact that with the inquiry ongoing

here at the moment, it's raised the profile of this important part of medicine as well, where it has maybe been forgotten about in many parts of the world.

Q. As you're speaking about that, I was going to come to the here and now, where we are and where we go. But just as you mentioned that, is there any other thought about things that could also be standardised for the greater benefit of patient care? I mean in relation to the sorts of things that we're talking about, not everything.

A. About fluids?

Q. About fluids, about recording. You say that the fluid balance sheet is now a standard, but are there checklists that you can agree on that could be fairly standard?

A. I think, for example, drug prescribing and drug kardexes and things like that. I think they've become pretty much standard around Northern Ireland as well, which is very good because if you're -- the trainees nowadays, it's a very complex system that you work in. And if you can at least use the same structures and they're the same, it's much easier when you're training and moving from one hospital to another because there are so many drug errors made today and it's just what happens, that mistakes are made. There are lots of checks that go

along and getting other people to check things with you, but it is, with incident reporting, one of the big spikes that happens there. It's one of the things that occurs commonly. So anything you can do to ensure consistency across the organisation is very, very useful and helpful, I think.

Q. Thank you. The result of Alert No. 22 was the subject of a validation visit to the trust, as you probably know. In 2008, RQIA carried out a visit, and the conclusion it reached is that there was not, at that stage, full compliance with Alert No. 22. One of the things that they highlighted was training:

"There was evidence that the provision of intravenous prescription and administration training for non-paediatric staff caring for older children on adult wards was poor across all organisations visited by the review team."

That's the very point that I was putting to you before, whether any thought had been given to that when you were designing the CMO's guidelines, if you like. That particular issue now arises in relation to compliance with the Alert No. 22, or let's call it the September 2007 guidelines. Were you aware of that?

A. That there wasn't any training, do you mean, before --

Q. No, I don't think that the report recorded no training,

but that there was an issue about that, that it was a deficiency.

A. I was aware of it that -- when they reported on that. I suppose that working in the Children's Hospital, you just look at the training programmes you have in your own hospital, and maybe we didn't look outwith that at the time. But it is something that, as you know, we have done now.

Q. Yes. Then in that same area, the other point was that:

"Junior doctors in specialties other than paediatrics do not attend intravenous prescription and administration training that is provided in paediatrics."

So they may have their specialisms, not actual paediatricians, but if they're going to deal with children they weren't attending that training and that was another deficiency. Were you aware of that?

A. I just can't remember that at the moment.

Q. I understand.

A. One of the things that has happened, though, and -- I helped develop a guideline on the management of children with diabetic ketoacidosis. They come in profoundly shocked, and it's because that middle group, the adolescents and young people, the 12 to 18 year-olds, can equally well come into the

Children's Hospital and the adult service as well. And there is an adult guideline, but there's a paediatric guideline as well. So what we had to do is sit down and work our way through that and make sure that under a certain age -- under 16, I think it was -- even in the adult service they adhered to the paediatric guideline. And that was something that we worked out and there was training with that as well.

The adult physicians, they just -- I think at the time they saw the paediatric prescribing as a lot of work. Adult prescribing in many ways was much simpler and certainly Dr Johnson has lifted up the quality of adult prescribing to the same sort of level as paediatric prescribing now. So this has all had a huge effect not only for children, but for adults as well.

Q. Yes. Of course, the CMO did introduce -- not in parallel, but shortly thereafter -- guidelines for adults in IV treatment. The other matter that came out of the validation meeting was actually an incidence of hospitals working in a collaborative way, which is a thing that I was discussing with you earlier. We don't need to pull it up, but I will give the reference for it: 303-058-789. And there, they record:

"In the Antrim Area Hospital, trigger lists have been developed to aid the understanding of the types of

incidents to be reported. This tool has been adopted in the Causeway Hospital and in the Royal Belfast Hospital for Sick Children."

And they have noted that as an example of sharing good practice. So this is possible. Were you aware of that, that you were adopting their trigger list?

A. Yes, I think this was a very innovative thing that Dr McAloon did and it's something we adopted as well. We've had to refine it for our own patient population as well, but it's actually meant that if -- it's a trigger list to fill in an incident form.

Q. Yes. Let's pull it up so people can see what you're talking about. It's 303-058-789. It's the second bullet that talks about the trigger lists and then the companion to that really -- because these are all prompters and the third bullet is something that the chairman himself had asked, whether that was possible, and in Antrim Area Hospital and Altnagelvin Hospital they've developed the systems where the biochemical results in a given range would prompt a proactive alert to clinical staff. So if you're above or below, presumably, in an area that's considered serious, then you get a prompt. And so that was another initiative that resulted from the consideration of these issues.

Is that something that happens at the

Children's Hospital?
A. Yes, that happens routinely, and in fact just recently we uplifted the level at which the prompt occurs. It's in my e-mail somewhere, but there was an issue and people wanted the level to be higher than it had previously been so that that prompt would come through. I think what happens is that if the biochemist sees a sodium level below a certain level, they would phone the ward or department that has sent that result. So that is something that is in place at the moment.
Q. Then just to bring us to present day, if you like. You are the chairman of the NICE group that is looking at the paediatric IV fluids. I think you said you'd been appointed chair from April of this year.
A. Yes.
Q. That gives Northern Ireland a very good opportunity, not only to contribute its own learning, presumably, but also to share in the development of the NICE guidelines and influence them, I suppose.
A. I really hope so because I think that we have done so much here. I believe we have. I'm very proud of what we have done and I hope that that can be used by NICE to take it forward. It's a two-and-a-half year project. You have to get ministerial approval to get any guideline adopted. It costs about half-a-million pounds

to get that done and I believe it's going to be one of the best guidelines on fluids available around the world when it does finally come out.
Q. Yes. We don't have it paginated, but it's on the NICE website, and -- because the Department of Health have asked NICE to do it -- its remit is:
"To develop a clinical guideline on intravenous fluid therapy in children and young people in hospital."
So it will also capture that adolescent group that you were talking about. Does it go up to 18?
A. It goes up to 16, but what we've also been doing is -- initially I suggested that we do just from four weeks of age up to 16 years because there's an adult guideline from 16 years onwards that is going to be coming out soon, so there didn't need to be any crossover there. It looks as though we're going to include neonates as well, so that will be babies within the first 28 days of their life. That is something that hasn't previously been done. It's a huge amount of extra work that's going to need to be done there, but I think it's going to be very worthwhile.
Q. Obviously in your view there are still things that need to be done. Can you say now what you see as some of the practices that could, in advance of the NICE guidelines being issued, could nonetheless be addressed in this

region?
A. In many ways I see NICE as being a bit of a big stick to actually make people do things. The NPSA alert that came out, I don't think that that has been enacted around the UK the way it has been here locally in Northern Ireland. And I'm hoping that what happens with NICE will make that happen. I really do. I think that one of the things we've already mentioned about the education -- I think we need to work on that more to make sure that the standards that we feel that should be met are met, that the quality of prescribing and fluid balance is of the highest order. It's of a good order at the moment, but I would like to see it at the highest order. You can't take your foot off the pedal. It's something you have to keep on working away at.
Q. Am I right in understanding that until NICE issues its guidelines, what we have is -- I have called them the 2007 guidelines, the Alert No. 22, that's what we have?
A. That's correct, yes.
Q. So is the effort then to ensure that there is as great a compliance and effective compliance with those guidelines as possible?
A. I think that has to be what -- I think that we have to do that, yes.
Q. There was a further RQIA report done in 2010. And by

that time, you were one of the professional advisers to the review team, you and Dr McAloon.
A. On behalf of the trust, yes, I remember. I remember going to their offices, yes.
Q. The result of that was to find that things were better than they were in 2008, but the Alert No. 22 has essentially five guidelines. The use of Solution No. 18 is one. Clinical guidelines, another. Staff training is a third. Then the revision of the charts is the fourth. Incident reporting is a fifth. In relation to the staff training, when it comes to the Royal Trust -- well, it's not called the Royal Trust any more. But it's still commented that there was no comprehensive database of staff training in hyponatraemia. So in other words, it wasn't possible quite to track exactly who had received training in hyponatraemia. Were you aware of that? You were part of the review group.
A. I must have been aware of it at the time. Certainly nowadays it comes up in job planning and it's one of the -- for a consultant, anyway, that whenever you're doing your appraisal every year, the training issue has to be done on a regular basis. You have to do the e-learning thing -- is it every two or three years at the moment?
Q. It wasn't so much that you had to do it. That point had

been made quite clear that it had to be done. I don't think there was any criticism of the trust in that way. It was actually being able to identify the database of staff who had done it. That actually was the deficiency being pointed out in that report.

And then just finally, if I may ask, to complement the question of "Where are we now?" I know that you sometimes have trouble sorting out the many committees you sit on and what's happened in the past, but if we're sitting here, present day -- so what might be in your mind now -- what has the trust in place in order to ensure that the 2007 guidelines are being implemented?

A. Do you want me to go through all the different things we have at the moment?

Q. No, not what you're doing, but what's in place so that the trust knows that it is complying with the guidelines of 2007.

A. We still have regular meetings about this. Ian Young chairs the fluid therapy group and he feeds back to the medical director of the trust about this.

Q. Is it that group that's at the sharp edge of making sure there is compliance?

A. Yes, it's just making sure that the charts are up-to-date. I submitted some audits that I'd done

recently as well, just to give reassurance of where we're coming from, that it's okay. They've been doing audits about compliance in other ward areas, including adult areas that look after adolescents as well, so all that sort of thing is being done at the moment.

Q. If a case comes up for review or a mortality meeting, if there has been any failure to comply with the guidelines, is there a way of identifying that so you can pick them up?

A. I'm ... Could you explain that to me, maybe in a slightly different way? Maybe I'm being a bit stupid at the moment.

Q. No, no. At a case review meeting where there's been a death --

A. Oh, I see, okay.

Q. -- when that child's case is being discussed, along with the many other things that would be discussed as to how that child was cared for, is there any effort to identify a failure to comply with the guidelines?

A. With the IV fluid guidelines?

Q. Yes.

A. Well, I think we would look at the case in its entirety.

Q. I'm sure you do. I'm just talking about for recording purposes. Do you seek to record that if you've got a case in front of you where those guidelines weren't

complied with?

A. I think in all deaths now there is a record kept of the review of that death at the mortality meeting nowadays. I think there is a note kept of that. Obviously, if there was anything that caused you concern, that would be highlighted and identified in that note as well.

Q. The minutes that we've seen of those sorts of meetings haven't been particularly extensive. So is it different now? Is the record of those sorts of meetings --

A. Yes.

Q. -- sufficiently detailed to capture that?

A. Yes, and Dr Keaney has been doing this and what she's been doing as well is she's been sending the minutes to all the consultants in the Children's Hospital. So even if you haven't been to the meeting, at least you can read the minutes and see what people were talking about. So if there was a cause for concern about something, even if you weren't there, at least you're getting the minute on it and you can be advised that way.

Q. Then just finally, when we had asked before, as you know, why there wasn't a very full or even any record of the discussion at those meetings, we were told the reason for that was because it was thought that if you didn't record that kind of discussion, it would somehow encourage greater debate and greater debate was

what they wanted to have first and foremost. Has the culture sufficiently changed that you can have the quality of that debate that you want whilst still recording the important elements of it?

A. I can't remember exactly where we are today, but I remember a presentation we had a few months ago, and my concern was that if minutes were being kept, that the debate could be stifled. So if there was a child who died and it was an adverse incident -- in other words it was an unexpected death or something like that -- I felt what there should be was a proper review of the case to determine the cause of the death. So if there was any blame towards anyone, that could be done by the review group and they could look into all the detail of that. And then the whole package, if you like, of the review, the findings of the review, could then be presented at the mortality meeting to share that knowledge.

Because I felt that if you were going to have an open discussion to -- that was not the place to find out what went wrong. I think there has to be a systematic review of the case, first of all, and present the findings of that so that people know what the findings are, and then there can be an open discussion and learning amongst the staff on that. I just felt that that was the proper way to do it.

Q. But even reaching findings could of themselves be critical, and that's not what you're setting out to do, but the very findings you make may be impliedly critical of any of the nursing staff or clinicians. What I was really inviting you to consider is how the trust has got over that issue that we heard previously in relation to Adam and Claire to encourage the very debate that you want to have, the fullest possible discussion as to what happened, how did the child come to die in those circumstances, whilst capturing that information so that others can learn from it?
A. That's the point I was trying to make because by taking the initial discussion away from an open forum like that and investigating the death properly, you can then bring the findings of that. There will be criticism of people there as well, but at least it will be open. The findings will have been done and you can then have an open debate about that. And you're not -- what concerned me was that if you brought a case of a child who had recently died to 30 people and that every minute was going to be taken, there wouldn't be an open debate about what went wrong and there wouldn't be learning. I felt it was much better to provide the findings of what had happened to everyone.
THE CHAIRMAN: Yes, to provide the findings would be

helpful, but there were two issues that were raised during the inquiry. One was how willing maybe nurses and junior doctors would be to speak out about consultants or vice versa in the group, and the mechanism that you're talking about is to do an investigation without having 30 people together might help that. But the other problem which was specifically identified was that doctors' insurers were telling them that whatever they said at those meetings, which would, if recorded, become discoverable in the event of litigation. And that was suggested to us to be a major problem which contributed towards the decision not to keep minutes. Have you got round the second problem yet, or is that still --
A. Minutes are being kept now and they're being disseminated around the medical staff now. So those minutes are being kept.
THE CHAIRMAN: So the reservations of the insurers, have they just been set aside?
A. Yes.
THE CHAIRMAN: Thank you.
A. They were just told: this is what we're going to do now.
MS ANYADIKE-DANES: And the system you describe, which is a smaller group of people having an intense discussion, if I can put it that way, reach their findings, that's

provided along with the file to a meeting where there can be a more general debate and that can be recorded. That particular system, is that what's in place now?
A. It is, yes. I'm not sure if it's exactly as I've described. This was something that I remember discussing a few months ago. What happened was -- Dr Johnson can do this better than I can -- there was a pilot. All deaths now have to be registered on the trust's intranet on a database and there's a timeline for that. Certain things have to be done within 48 hours, other things have to be done within four weeks, so that everything has to be done -- for example, there's a timeline for when the death has to be presented at a mortality meeting. So all these things are happening and that has to be done now. And what we have been doing as well -- and I think I mentioned this before -- in the Children's Hospital is reviewing all deaths, even deaths that are expected, children with chronic illness, children with cancer, where they're under palliative care. Even those are now going to be reviewed because there's always learning, there's always something to learn from it. A parent who hasn't been happy with something where you thought you'd done everything right. There's always learning there.
So we're moving to try and include everyone in this

process now.
Q. Where did that come from? Did that come from within the trust or is that something the department wanted?
A. I think it's just -- I think I mentioned a while ago that ... I was speaking to one of the managers a few weeks ago about something else and I hadn't been aware that this is what is happening because I have been out of the governance thing for a while and she said, "Peter, you wouldn't recognise what we've been doing now compared to even two years ago". Things have just moved on and I think people are just looking to improve the quality of these structures on the governance side.
MS ANYADIKE-DANES: Thank you. Mr Chairman, I have no further questions.
THE CHAIRMAN: Mr Quinn?

Questions from MR QUINN

MR QUINN: Mr Chairman, I have a question. It relates to Claire Roberts, but it's the only chance we're going to have to air this issue. Mr Roberts has asked me specifically to ask the inquiry if I could.
THE CHAIRMAN: What's the question?
MR QUINN: If I could have up document 090-009-011, which is the PICU discharge note relating to Claire.
Mr Chairman, I've got three, perhaps four, questions. The first question relates to the

consultant's name. Did Dr Crean sign his name, fill in his name, or is that just as a matter of course as to how his name got there as the consultant in charge? That's the first point.

THE CHAIRMAN: Can you help us on that, doctor?

A. My name went on all the yellow flimsies of admissions, really. That's really why it was there. I can tell you about the form itself, if you want me to.

MR QUINN: Yes, please. We've never investigated this really. But you see, that's not your writing; is that correct?

A. No, that's not my writing.

Q. What we expected was this was just something that was filled in on your behalf.

A. My name went on everything, it went on the X-ray reports, it went on the CT scans, the MRIs, and it was just to identify it as an ICU episode. You've got the ward there as well, but it was just kind of like a generic thing that was done. This discharge summary was a triplicate thing and it was for all the wards. What happened was -- I mean, we were in the intensive care unit, okay, but there are medical wards there as well. So what you would do there is that, for example, if a child came in with a pneumonia and was being discharged home on different medications, like

antibiotics or something or bronchodilators, you could put the drug and dosage on those so they could take those to the GP so the GP could then write a prescription for another seven days for the family.

Q. That leads me then to ask, on the next three lines down we have a diagnosis, and the last one which I can't quite make out, I think it's "other diagnosis". It's blacked out on the side where the holes are punched. You will see that against "other diagnosis" is "hyponatraemia".

A. Okay, yes.

Q. Did you write that?

A. I don't think I was involved in any way in Claire's --

Q. And if we could please have the --

THE CHAIRMAN: Sorry, just before you bring it up. I'm afraid this copy is rather blurred. Just hold the screen for a moment.

You might be familiar with this form, doctor. Where it says "cerebral oedema", does that say "principal diagnosis" on the left? Is that the style of the form?

A. It seems to be, yes, "principal diagnosis", yes.

THE CHAIRMAN: Then the next one is --

A. I think that's "status epilepticus".

THE CHAIRMAN: Is that "secondary diagnosis"?

A. Is it "other diagnosis"? Is it "other"?

THE CHAIRMAN: Mr Quinn thought the third one might be "other". We can double-check this in other forms.

A. I think it's just giving different fields of "others" in case there was more than one "other", maybe.

THE CHAIRMAN: Thank you.

MR QUINN: I was coming to that point. Before I come to that point, is it signed by someone who we think is Dr Mannam, M-A-N-N-A-M. Do you recognise that signature?

A. It just looks like a squiggle.

Q. But just below that, in block letters, M-A-N-N-A-M. Does that name ring a bell with you?

A. No, I'm sorry, it doesn't.

THE CHAIRMAN: It's not Hannam? Is it an H rather than an M?

MR QUINN: We think it's Mannam.

A. It's very hard to see.

THE CHAIRMAN: Can I ask, does either name ring a bell or any variation on Mannam?

A. I'm sorry, chairman, it doesn't.

MR QUINN: Then I want to ask you: in the normal procedure -- if we could have the middle of the form again, please -- in relation to the diagnoses that were listed, who would normally fill that area in?

A. It's usually done by one of the junior medical staff

in the ward that would fill that form in as part of the housekeeping, really.

Q. And if beside that document we could have up 090-006-008. What I'm putting up there is a demonstration of the same signature, which looks as though it reads "Mannam".

A. It does seem to be, yes.

Q. Does that ring a bell with you at all?

A. I'm sorry, it doesn't.

Q. It looks as though Dr Mannam is a senior house officer.

A. It does, yes.

Q. And would it normally be a form that would be filled in by a senior house officer, that is the discharge form on the left?

A. Yes, it could very well be, that would be the normal practice on the wards.

Q. What would the normal practice be in relation to arriving at the diagnosis of the three-part diagnosis that appears in the form?

A. Well, the junior medical staff would be part of the team and they would be hopefully au fait with what the diagnoses were of the child.

Q. I don't want to go into this in any great depth. I'm mindful of the time. Given that we've heard about Claire's case and the difficulty with the diagnosis,

where would the junior doctor get the diagnosis that arrives on that form? Where would that be extrapolated from, if I may use that term?

A. It could ... I wasn't involved in Claire, but just generally, it could be from the notes themselves. It could be from speaking to one of the consultants about that as well.

Q. Just for the record, could you read in what it says as the three-part diagnosis, please?

A. I think it says:

"Cerebral oedema. Status epilepticus and ..."

Q. "Other diagnosis, hyponatraemia"?

A. It seems to be hyponatraemia, it's quite unclear, but it seems to be hyponatraemia.

MR QUINN: Thank you, sir.

THE CHAIRMAN: Any more questions from the floor?

Mr McAlinden?

Doctor, can I pick up one point with you. I think you touched on it earlier. When Dr Carson was here last week, the week before, he said that -- we were talking about the lack of exchanges between the Royal and Altnagelvin in Raychel's case, and he said there is now a different approach to dealing with what were poorly managed cases between hospitals. In other words, we were probing the fact that nobody in the Royal had

really engaged with Altnagelvin to say, "Mistakes were made here. How are you going to learn from them or how can we help you learn from them?"

A. Yes.

THE CHAIRMAN: You said perhaps earlier on, perhaps before lunch, that now the system is that each hospital fills in its own incident form and we work together on it.

A. Yes.

THE CHAIRMAN: Let's suppose that there was another disaster like Raychel's next week and Altnagelvin did another critical incident review and the equivalent child to Raychel was transferred to the Royal and similar problems about the way she had been treated were identified in the Royal. What would happen in practical terms next in terms of the Royal and Altnagelvin working together?

A. What I've seen to happen is that if a child comes in -- okay, it maybe isn't a death, but something's happened and concern has been raised in the Children's Hospital. I've seen colleagues getting on the phone to another hospital -- I'm not going to mention them -- and say, "Look, we've got concerns here, this has happened. What we're going to do is fill in an incident report here on this and it would probably be best if you do the same thing as well because I think that this needs to be

reviewed". So that incident report would be reviewed locally in the Children's Hospital and it will go up the organisation, and that would then be shared with the other hospital as well.

If it was a serious adverse incident, that becomes an SAI and that comes under the PHA, Public Health Authority, and the Health and Social Care boards. It's at that level, a serious adverse event, and they would oversee any review of what had happened. So it goes -- it is escalated very, very quickly. In fact, what seems to happen nowadays is that things are escalated very quickly to that level and they can be de-escalated if they're not deemed to be serious. So the escalation happens. So there would be more escalations to an SAI then there would be reviews and things may be de-escalated to a lower status.

THE CHAIRMAN: That step would be taken on this scenario in the Royal even if there had been no failing in the treatment in the Royal?

A. Yes, absolutely.

THE CHAIRMAN: So the incident report completed in the Royal would be raising issues about what had happened in, say, Daisy Hill or Craigavon?

A. Any death like this would become an SAI -- an unexpected death like this would immediately become an SAI. That

would happen within about 24 hours. Because what now happens in the hospital is that the senior nurses want any adverse incidents that are serious to be brought to their attention within a 24-hour period, so they're not left there in a book and they don't know anything about them.

THE CHAIRMAN: Okay. Could I ask you one more point? It's slightly different. One of the big concerns for the inquiry and for the families is that Lucy's death did not lead to a timely inquest and, even worse, Claire's death did not lead to a timely inquest. We've heard it mentioned in passing a few times that the bar for reporting deaths to the coroner has been lowered over the years, not because of a change in legislation, but just there's a different approach taken. Can you comment on that?

A. I think it has. I mean, I ... I think because of concerns of what had happened in the past -- and you can help me here -- is it the medical assistant who's ...

THE CHAIRMAN: The coroner's office has a -- yes, the coroner now has a medical assistant in the office.

A. I think the appointment of the medical assistant has been a big step forward as well because you've then got access to medical advice at the coroner's office, someone that you can actually talk to who's a doctor and

he'll give you advice. So I think that the trigger for informing the coroner is much, much lower now.

THE CHAIRMAN: That might make a difference in Lucy's case because there was some contact with the coroner, however adequate it was or not, we've heard evidence about it. But that wouldn't make a difference in Claire's case because in Claire's case there wasn't any contact with the coroner, the coroner was never contacted about Claire, so the fact that the coroner now has a medical assistant doesn't obviously lead to a call being made to the coroner. But are you saying, just on the general --

A. I just think that even if Claire had not been -- she wasn't referred to the coroner. I think nowadays, where it wasn't an expected death, that that case then would have been reviewed within the Children's Hospital. There would have been a formal review of that death.

THE CHAIRMAN: Okay. Thank you very much indeed.

MR QUINN: Mr Chairman, if I can just ask one question. It may be relevant. When I thought about what I'd asked -- Mr Chairman, through you could I ask: where does that flimsy go to that the doctor referred to, the flimsy that we had on the screen, the discharge summary from PICU?

A. I think it's in triplicate. I think one goes to the pharmacy and one stays in the notes and either -- does

one go to the GP or ... Maybe one's sent to the GP so that they get an idea of --

Q. Can I just confirm that one goes on the notes; is that correct?

A. Yes, one would stay in the notes and that's probably the copy that you saw on the file there.

MS ANYADIKE-DANES: I wonder if I might seek clarification of a point that you had raised, Mr Chairman? When you said if those sorts of cases happen now -- and Raychel's case was the example you were given -- that would be a critical incident report, a serious adverse incident.

A. That would be escalated as an SAI.

Q. And you would do that in the Children's Hospital irrespective of the fact that you may have given no treatment whatsoever. What happens in the referring hospital? Do they have to complete a report themselves so far as you're aware of the --

A. Yes, they should be doing that because an adverse event happened there as well.

MS ANYADIKE-DANES: Thank you very much.

THE CHAIRMAN: Doctor, thank you very much for coming. Apart from going back over the history of events, since the families have been constantly concerned to be reassured that there have been improvements, I hope that the evidence that you've given has actually helped them

in that way because whether there are some remaining imperfections, it sounds, on your evidence, as if we've moved on a long way from 2001.

A. Thank you, Mr Chairman.

(The witness withdrew)

THE CHAIRMAN: Thank you. Ladies and gentlemen, we're now adjourning until Tuesday morning at 10 o'clock when we have Mrs Burnside. Thank you very much.

(4.15 pm)

(The hearing adjourned until 10.00 am on Tuesday, 17 September 2013)

I N D E X