Wednesday, 25 April 2012

(10.00 am)

(Delay in proceedings)

(10.38 am)

THE CHAIRMAN: Good morning. Thank you for your patience this morning. I think you now know that we're going to start with the evidence of Dr O'Connor. At the start, Mr Millar, can I apologise to you and your team and, particularly, Mr Keane. When we left yesterday, there was some uncertainty about how exactly we would get through today's evidence. I understand that, as between Mr Keane and Dr O'Connor, there's an even more pressing problem for Dr O'Connor in attending than there is for Mr Keane. And I mean no disrespect at all to Mr Keane that we're interposing Dr O'Connor to give her evidence. It will certainly finish today, hopefully in time for Mr Keane's evidence to finish later on today. That's the ambition, but we will start with Dr O'Connor.

MR MILLAR: Your remarks are appreciated, Mr Chairman.

THE CHAIRMAN: Thank you.

DR MARY O'CONNOR (called)

Questions from MS ANYADIKE-DANES

MS ANYADIKE-DANES: Good morning, Dr O'Connor.

Mr Chairman, I think that there is a copy of Dr O'Connor's CV that has been circulated. I wonder if

people can --

THE CHAIRMAN: I got it this morning. I think it has been circulated elsewhere. Yes?

MS ANYADIKE-DANES: Yes. Thank you. Dr O'Connor, do you have a copy of it yourself?

A. I have a copy here.

MS ANYADIKE-DANES: If it's not paginated, Mr Chairman, it will be. I apologise for not having time to do that.

THE CHAIRMAN: Mine is paginated as 306-030-001. It's a two-page document going on to 002.

MS ANYADIKE-DANES: Dr O'Connor, if you look at the bottom of the first page of your CV, under "Previous training", you'll see that you've got 1991 to 1994, and there's three elements to that. Northern Ireland paediatric training scheme, registrar and senior registrar, including 12 months in paediatric nephrology.

A. Yes.

Q. What exactly did that entail, particularly your 12 months in paediatric nephrology?

A. In that time, I worked with the then Dr Savage on Musgrave Ward. Part of that 12 months was as a registrar and 8 months of it was as a senior registrar. I was responsible for attending the renal clinic every week and looking after the renal patients when they were inpatients. During that time, I did not

have any exposure to transplantation; that was all in Bristol in my later training.

Q. I understand. Did you know about the renal protocol that Dr Savage had compiled?

A. No. During those times between 1991 and 1994, I had no exposure to renal transplantation, so I wouldn't have had reason to read the protocol. I don't recall being aware of it.

Q. When you say you had no exposure, does that mean that none of those patients whose care you were involved in had had a renal transplant?

A. Some of them had had previously a renal transplant, but I was never involved in an acute renal transplant happening at that time when I was on the ward.

Q. But some of them had had that?

A. Yes, indeed.

Q. It's all a long time ago, but could you remember if the renal protocol was in their notes so far as you are aware?

A. I don't remember back then. It's our current practice always to put the protocol in the notes whenever the child comes in to have a transplant.

Q. I understand. In fairness, it seems only to have been devised in 1990, so ...

A. Yes.

Q. You were starting that work in 1991, weren't you?
A. Yes, my work with Dr Savage probably was between 1992 and 1994. There were two spells.
Q. Could some of those children's conditions have pre-dated 1990?
A. Oh, indeed. Some of those children are now 25 year-olds, healthy children. Healthy adults.
Q. Yes. Then if you just go to the more recent section of your previous training, 1994 to 1995. That is your year in Southmead in Bristol.
A. Yes, 16 months in a tertiary renal unit in Southmead in Bristol where there was --
Q. Why did you go there?
A. I applied for a training post in paediatric nephrology. I had already completed enough training to be accredited as a paediatrician, but my work with Dr Savage led me to have an interest in paediatric nephrology. So that was a specific training post where I only did paediatric nephrology and I was anxious, during that time, to avail of as much training as I could, so I made it my business to be available even on the nights that I wasn't on call if there was a transplant happening. So I was available for all transplants during my time in Bristol.
Q. That's exactly what I wanted to ask you. Is that where your interests lay, to be involved in paediatric renal

transplants?

A. After my experience working with Dr Savage and his patients, I decided to train as a paediatric nephrologist. At that time, there were 13 tertiary units in the UK, but as far as I remember, only six of them offered training. Bristol, being one of the larger units, was one of the units that offered training. So I interviewed competitively for that post and I went to spend time there.

Q. And when you were doing that, was that with a view to coming back to the Royal and to the Children's Hospital and, perhaps, being part of developing that paediatric renal transplant unit or was it just a career move and you may not come back?

A. My desire was always to come back, but like any Northern Ireland person who goes abroad -- England isn't really abroad -- but you if you go away to train, you can obviously never guarantee that a post will be funded or that you will get the post, so in going away I was making a decision that my career choice was nephrology, wherever that would leave me, whether that was working elsewhere in the UK or back in Northern Ireland.

Q. Had you discussed before you went and when you came back -- probably more particularly -- with Dr Savage the development of the paediatric renal transplant unit?

A. The opportunity of a second consultant being appointed gave great opportunities to develop a service further. A single-handed person has very little time. He made great developments, but two people can make more developments than one. And although, at the time of Adam's transplant, I had only been back a matter of 27 days, we had already had discussions, for example, about the renal transplant protocol. The transplant which I had looked after 10 days before Adam's transplant had been a patient of Dr Savage's who then became my patient. Because I had looked after his preoperative and post-operative care at that time and I used the Bristol protocol because I was most comfortable with the one that I had been using in Bristol and we obviously had discussions among ourselves about the regime in Bristol. And we agreed that we needed to combine the best of both worlds.

Q. To develop the protocol that had ... I think the date of it actually was 1990, so it may have been ahead of its time. But in any event, at that stage in 1995, to develop it. And in fact the Bristol protocol is dated 1995 --

A. Yes, and --

Q. Sorry, we maybe can go to it now that I mention it. It's 014/2, page 31.

A. Could I make a point about that?
Q. Yes.
A. I'm aware that the protocol that we wrote in Belfast is then dated September 1996. In fact, in the period between Adam's transplant and September 1996, we actually used the Bristol protocol, but we obviously felt that we needed to put our own name on a protocol.
Q. Yes. Sorry, can I just ask you: does that mean that the protocol that Professor Savage had devised, which is the 1990 protocol, wasn't used after Adam's death?
A. It wasn't even completely used for Adam because, if you look at that protocol, it's evident that Dr Savage and I had already discussed the difference in the two protocols. Because the 1990 protocol, in terms of immunosuppression, advises intraoperative azathioprine and hydrocortisone as the immunosuppression. Dr Savage, in this case, had decided on the night Adam was admitted that he had to have intravenous methylprednisolone intraoperatively and he also made a comment about mannitol. Both those drugs were part of the Bristol protocol and had never been part of the Belfast protocol. So I think it gives evidence that we'd already had discussions about how to progress things.
Q. Now that you have mentioned it, I will leap on to something that goes with what you're just saying now,

even though it's slightly out of order. That is that when you were taking over from Dr Savage in the theatre on 27 November -- so you knew you were going to do that?

A. Yes.

Q. Which protocol did you use?

A. Well, I had only been back three weeks and we had had one transplant, and I had been -- I suppose, as a new consultant, flattered that Dr Savage had let me run with the first transplant entirely as I wanted without interfering in my care. I felt he trusted me. But the next patient he had already planned the care and I was coming in and it was his patient, so I would have been anxious to discuss the immunosuppression. I don't have a detailed memory of what conversation we had about immunosuppression, but I do know from looking at my notes and Dr Savage's notes that he wrote in the notes that he wanted methylprednisolone. The previous child I had entirely used the Bristol protocol, which was intraoperative methylprednisolone and post-operative ciclosporin. In Adam's case, we must have had the discussion because there is a drug kardex with a reference number where I have prescribed azathioprine at 10.20 that morning, which was subsequently given by Dr Taylor. So I surmised that we probably talked about that, and subsequently that's what we adopted in our

formal protocol later on, that we would give azathioprine as well as methylprednisolone.

Q. Can I take you to the particular page where you deal with "in theatre" in the Bristol protocol and then it goes on a little bit further to talk about the details of investigations and fluids and observations and so forth. Where it starts with the theatre is 014/2, page 32 -- now that we're on the topic of the protocol.

There we are. So, "in theatre" --

A. Could I make a point first? In Bristol, it was not the policy ever for a nephrologist to go to theatre. In my time there, I went once to observe a transplant, but the nephrologist didn't have a role in theatre. And actually, I have been interested to know what other units do, obviously in the light of the inquiry. You may be aware from my statements that ever since Adam, I always attempt to go to theatre. But as recently as a few weeks ago, I contacted my colleagues in the various units in the UK. There are 10 transplanting units and if I exclude ourselves and Newcastle, where our expert witness comes from, that leaves eight.

Of those eight units, in 1995, five of them, the nephrologist never went to theatre. Two of them, they went for part of the procedure. And one of them had no strict policy decision; it depended on the patient.

Interestingly, the numbers are exactly the same in March of this year, except one unit who used to go don't go any more and one unit who didn't go now go, but it's still five units, the nephrologists do not go to theatre at all.

Q. I understand. Well, if this is the Bristol protocol and it was compiled and designed for a set of circumstances where the nephrologist wouldn't be going to the theatre, so all that follows after "In theatre", who is that addressed to?

A. It's addressed to the anaesthetist and I think if you flick on, a joint author of this protocol was an anaesthetist.

Q. Yes. If we flick on to 014/2, page 35. You can see it's Dr Holland as consultant anaesthetist, intensive care. So in the Bristol situation, does anybody else look at this protocol other than the nephrologist and the nephrology team, if I can put it that way, pre-surgery and the anaesthetist during surgery?

A. The protocol goes with the patient, with the chart, to theatre, and the anaesthetist obviously pays a preoperative visit. As part of this protocol, there is a checklist --

Q. Just so that we're clear, because that's a bit of an issue, a preoperative visit to see the child?

A. As would be routine for the anaesthetist, yes. So I don't think it would affect anybody else apart from the renal team and the --

Q. Would the nurses see it?

A. Oh yes because they are part -- we're a family in nephrology, the nurses are very much part of our care, but some of the investigations would be swabs and urine samples and things the nursing staff would be responsible for.

Q. Is the protocol in the theatre? In your experience, sorry.

A. In Bristol, I don't know what was held in theatre files and so on. But this would have gone into the patient's chart and the chart would have gone to theatre --

Q. Yes.

A. -- with the patient. And there was a page where we did various calculations of doses and things to make it convenient and, obviously, that was individualised for the patient and went to theatre with them.

Q. So this is calculations that the nephrologist team, if I can put it that way, would make in aid of the anaesthetist so that there's a sort of page of them?

A. It's the dose of methylprednisolone, the dose of antibiotics, the amount of blood -- if required -- to bring the haemoglobin up to a certain level. Those kind

of figures.

Q. So the calculations are in order to assist with compliance, with this protocol, in other words?

A. Yes.

Q. Do you know now or since Adam -- perhaps that is a better way to put it -- whether there's a similar approach in the Children's Hospital paediatric renal unit? Is that what happens?

A. Yes.

Q. So this would go with a similar sort of ready checklist that you have just described with the notes, with the child, to the operating theatre?

A. Yes, indeed. But we're a small hospital and a lot of communication goes on. Personally, I always walk down to the theatre and speak to the anaesthetist. A lot of our transplants now are live donor transplants and that gives the opportunity even to send a typed summary some weeks beforehand to the anaesthetist --

Q. Because it can be planned?

A. Yes, of course.

Q. Thank you very much. Now that you mention the bit about the live donors, you have referred -- I think it's in your third witness statement, 014/3, page 16 -- to ... Here we are. (c) I think it is:

"Live related transplant cases are easier to

transfer."

This is an issue as to what the options are, if I can put it that way.

A. Yes.

Q. You say that there are three cases that have been transferred to London in recent years.

A. There now have been four transferred to the UK in total.

Q. There might be four?

A. There's been another one since.

Q. Can you help with what the circumstances of that are?

A. Yes. Three children went to Great Ormond Street and one went to Leeds. The children who went to Great Ormond Street had complex urological, or plumbing, problems that the urologists in Great Ormond Street had already operated on and, I think, they didn't want anyone else to interfere with their plumbing. So she went back there to have a live donation from her mother and she's very well.

The next child is a child we were very prepared to do in Belfast. She had complex cardiac problems. She had complicated cardiac surgery as a baby and that had eventually led to kidney failure and she had been a patient of Dr Savage's. We felt we were very able to do the transplant here, but the question was: if she develops cardiac complications, she might have needed

a procedure called ECMO, which is not available in Northern Ireland. So she went to Great Ormond Street. In fact, there was a complication with her mother having her kidney removed; she had a big bleed and we were a bit upset about that.

The next patient who went was a patient of mine who went last year. I was concerned about that child because she had clotted off most of her blood vessels and we felt we were in an emergency situation. We had a dialysis line in and we weren't sure we would ever be able to get another one in. She was small and she had a live donor father who had a huge kidney stone in his kidney that was going to be donated. And the team in London who took his kidney out, they had previously used donors with kidney stones, but it was the biggest stone they had ever removed from a living donor. That child had a lot of complications and spent a long time in intensive care in Great Ormond Street. So she went because -- partly of the dialysis problems, partly because of her size and my concern about her was I had referred her to the Great Ormond Street team in November thinking that if her dialysis line went, she would die and I asked for an urgent transplant.

The situation was such with the waiting list with Great Ormond Street that she didn't get transplanted

until May, which caused me some concern. So the next small child that we sent away, we sent to Leeds. There has been a tendency throughout the UK to centralise transplantation for very small children. There was indeed a meeting about this --

Q. Sorry. I beg your pardon. Just so that everyone understands: very small, how do you define that?

A. Under 15 kilos. There was a meeting in Newcastle-upon-Tyne where nephrologists gathered in November 2010 to discuss planning for transplantation of small children. So definite decisions have not yet been made, but there's a tendency in the UK in the nephrology community that very small children probably should be done in a number of units such as Great Ormond Street and Leeds where there's a surgeon who has particular expertise, and that is where we sent a child to in January this year. In fact, he came home from Leeds and his whole wound had split up and we've never had such an complication, so we weren't very pleased about that.

Q. Can I ask this: when Mr Keane was asked about a live donor, his view was that he wouldn't perform that surgery if there was to be a live donor; he would arrange for that or he would advise that that was arranged in a different centre.

A. Okay.
Q. What I was going to ask you was -- I know that you'd only been a few days back -- but you had been under Dr Savage before. Do you know what the view was amongst the small team that you had in the Belfast paediatric renal transplant unit about carrying out live donors in 1995 for small children?
A. In all units in the UK, it was fairly fledgling, live donor. In my time in Bristol, there hadn't been any live donors, although we discussed it with all families. There's a fine line between, as a nephrologist, encouraging someone to be a live donor and giving them the information because you can't be seen to coerce.
Q. That wasn't quite the direction of my question. The direction of my question is whether you felt that the paediatric transplant unit in Belfast had reached a stage where people were comfortable and ready and willing and wanting to do that are or whether that was still a little way off.
A. If I could use as an example the three year-old child who was transplanted on to my care on 17 November. His parents were very keen to be considered as live donors and when I reviewed his notes before the transplant on that night, there were several letters in the notes. One was a referral letter from Dr Savage for the child

to be assessed by Mr Robert Kernohan, who was the main transplant surgeon at that time or one of the transplant surgeons. And his reply, he had made an assessment of the child, he felt he was still a bit small and, when he grew a little bit bigger, he'd be willing to do the live donor. There was also a letter in that chart from Mr Keane who had assessed the father and had assessed him to be a suitable person that he would be willing to remove the kidney from.

So as far as I'm aware, we had not yet carried out any live donors at that time. That particular child was lucky enough to get a cadaveric kidney on 17 November. He's 20 years old now and at university and doing very well.

Q. What I was really trying to get at is whether that was not a stage you had yet reached for quite small children. What I was really putting to you was Mr Keane's evidence where that was not something that he would be willing to do.

A. In Dr Savage's previous patients, I'm aware that a lot of them had a condition called congenital nephrotic syndrome and children with that condition get their kidneys removed when they weigh up 10 kilos. So very many of the early transplants, most of which are still functioning, were done when the children were 12 or

13 kilos, and those transplants are mostly still very successful. Some of the children are 24, 25 years old with a kidney working. So transplants of small children had been done successfully in Belfast.

Q. I'll move on. It wasn't the age of them, it was the live donor aspect of it. But I will move on.

I think you have, in your witness statement -- your first one 014/1, page 2 -- you talk about the role of the consultant nephrologist during a renal transplant. I accept that you have said that, actually, in some places they really don't have a role at all during the renal transplant.

A. Yes, in most places.

Q. But, in fact, you would know that Dr Savage would go in from time to time and you seem to be prepared to go in from time to time to the operating theatre.

A. Well, personally Adam's death affected us so much --

Q. No, prior to that. Dr Savage, I think, was prepared to go in from time to time.

A. Yes.

Q. So if we have what you've described as your role, during a renal transplant:

"The consultant nephrologist prescribes the immunosuppressive medication and is present to prescribe the immediate post-operative drugs and fluid regime."

You then go on in another witness statement, which I will take you to in a minute, but pausing there for the moment. If you're there to prescribe those drugs and then, presumably, you pick up the child's care post-operatively when they come out of theatre, what sort of notes and information do you want to have in relation to what has happened in theatre?

A. That would be the kind of things that I would write in my first post-operative note and it would include all of the drugs given, the details of the anatomy of the transplant, comments in the operative notes as to what the kidney looked like and, perhaps, if any urine was produced. Comments as to whether there was a stent put in because that's something that has to be taken out afterwards. But my immediate priority when a child is just post transplant is for me to pay meticulous care to the fluids because a lot of transplants are lost in the first one or two hours post-operatively because when the child passes lots of urine and gets dehydrated, then the kidney blood vessels clot. It's a time where -- you sit by the child's bedside as a nephrologist.

Q. What do you want to know in terms of the fluid management or regime during the operation?

A. I usually record in my post-operative note exactly what fluids were given in theatre, but that part of the

process has passed, if you like. My work starts when the child comes out of theatre.

Q. Sorry, the reason I ask you that is I would assume -- maybe I'm wrong and you can help us -- that you want to know what has actually been administered because that's part of what -- I would assume you're going to consider the effects of that and how the child is presenting and what you might expect. Or do you not need to know what has been given to the child?

A. I record it, but effectively the child will have been delivered to me with certain blood pressure and a certain CVP and my clock starts from there --

Q. And does it matter to you how much fluid or what type of fluid has been administered?

A. It obviously, as we've seen, can have an effect --

Q. Yes.

A. A -- serious effect. But it's usually not part of my care. I record it, but that part of the process has finished.

Q. I understand that initially it has already happened, but given that, presumably, things aren't always instantaneous, so if certain things are administered in certain volumes at certain times, the effects of that may be seen in the period that you have the care of the child. So all I am trying to find out from you -- it's

really just a plea for information -- is to what extent do you want to know what has happened in terms of fluids in the theatre? That's all.

A. Yes, I want to know, but the response to fluids is instantaneous. We would maybe give boluses of fluids every 20 minutes in this immediate post-transplant period so the effect of fluid could be worn off after 20 minutes. It's very instant --

Q. The effects of the fluids that have been administered in theatre could be worn off in 20 minutes?

A. If a child is in front of me who has just had a transplant and their CVP or blood pressure drops, my response to that is to give 5 ml per kilo -- which in Adam's case would be 100 ml of fluid -- immediately. And in 20 minutes' time if the blood pressure or CVP has dropped again or hasn't gone up, then I repeat it and I repeat it and I repeat it.

Q. In terms of trying to understand why it might be happening, might it not be relevant to know what was actually given?

A. It's more relevant to know what the CVP and the blood pressure and the urine output are as the child is in front of me because it's an instantaneous response that you must make in terms of fluids.

Q. And if you know what has actually been administered,

does that not help you understand whether the child is overloaded, approaching overloaded, dehydrated, approaching being dehydrated?

A. The CVP tells me all that. The CVP and the blood pressure are crucial in the post-operative time.

Q. No. I think everybody has said how crucial the CVP is, certainly. So is your evidence that you really don't need to know that? Once you know what the CVP and the blood pressure is, it really doesn't matter to you what has --

[Stenographer intervention].

Is your evidence that once you know what the CVP and the blood pressure are, it really doesn't matter to you in particular what was actually administered during and how it was administered during the operative period?

A. Unless there's been a problem related to that, it has no impact on my further management. The problems could be pulmonary oedema, which sometimes happens, and obviously a very tragic problem in Adam's case when he was given large volumes of a weaker sodium-containing solution.

Q. I understand. Then do you look at the anaesthetic record?

A. Yes, because I make my first note generally.

Q. And that will tell you fluids, won't it?

A. Yes. What I look on the anaesthetic record for is how

much was given, what it was, and what drugs were given, and at what time.

Q. Sorry, I have obviously asked my questions very, very badly. That's what I was trying to get at, whether you looked at that to get that information.

A. Yes. I don't look at everything in the anaesthetic record because my job is to look after the child.

Q. I understand. So you do want that information and you get it from the anaesthetic record?

A. Yes.

Q. Thank you. Typically -- although there might not be a typically because there aren't that many children necessarily being transplanted -- but in your experience, when is it that you're looking at the anaesthetic record?

A. As soon as a child moves into -- in our hospital, it's intensive care; in some hospitals, it would be a recovery ward or, indeed, in Bristol, the older children came directly back to the medical ward. But in our hospital, it's in intensive care.

Q. I understand. Can I take you now to something that was the subject matter of Professor Savage's evidence and also comment by the inquiry's experts --

A. Yes.

Q. -- which relates to multi-disciplinary team meetings?

A. Yes.
Q. And Professor Savage gave evidence in his -- well, here, and also in his witness statement. For the record, it's 002/3, page 19 to 20. And I think it's his answer to question 19. But anyway, he talks about multi-disciplinary meetings. There we are. It's (a), I think. It's all through there. He first starts on (a) that:

"Patients on dialysis are regularly discussed at the weekly multi-disciplinary team meetings."

And he talks about if there were specific needs, previous surgery or other medical problems are discussed. It would involve the designation of individuals who might address such problems.

A. Yes.
Q. And then he deals specifically with the particular instance of Adam's case. And then if we look at his answer to (c), he talks about the multi-disciplinary team consisting of the renal nurses -- the senior nurse being Joanna Clingen -- and then the dietician. And then, in terms of the medical members, it's yourself and Dr Savage.

And I think he also says that it doesn't typically involve the surgeon, but that can be arranged.

A. That has been my experience, both here and in Bristol.

The surgeon didn't come to these meetings, but certainly since my appointment, every patient I've put on to the transplant list, I would have referred to the transplant surgeon. And with the advent of a dedicated transplant surgeon who came, I think, on 31 December 1999, Mr Connelly was more free to visit our hospital and indeed, on many occasions, we would set up a special outpatient clinic. Rather than the children go to the City Hospital to see him, we would group a few together when they were ready to go on call and he would come to us and review the patients in our hospital.

Q. So that happens now?

A. Yes, it does.

Q. There is some involvement of the surgeon?

A. There is involvement in every case of the transplant surgeon. In every case, the child is seen by the transplant surgeon.

Q. Thank you. Then can you go back to your experience in Bristol? In Bristol, typically, I think you said, the transplant surgeon didn't attend the multi-disciplinary meetings.

A. Yes.

Q. Was a transplant surgeon nonetheless involved?

A. Every child was referred by letter to the transplant surgeon, who saw the child in their outpatient clinic

and then wrote a letter.

Q. This Bristol?

A. Yes. And I continued the same practice in Belfast.

Q. Thank you. So a child in Bristol wouldn't have come to the operating theatre, if I can put it that way, without the benefit of having been seen by a transplant surgeon?

A. No. It might not be the surgeon who was actually going to do the transplant. It was always Mr Lear in Bristol who saw all the children because he took a particular interest.

Q. But a transplant surgeon nonetheless?

A. Yes.

Q. Why was that, do you know?

A. Because they were going to have surgery and the surgeon would like to make an assessment of the size of the child, any previous operations, any particular considerations for example. Our children with congenital nephrotic syndrome always have to have both native kidneys taken out before transplant. That would not be done by a transplant surgeon; that would be done by a general surgeon. Some children might have abnormal drainage of the urine, for example, into a bag on their abdomen. And different decisions would need to be made if there was any degree of complexity of the plumbing.

Q. Yes. You, I think, first saw Adam on 9 November 1995.

A. I cannot recall and I have tried to recall whether I actually saw him on that day.
Q. Oh, I beg your pardon.
A. If you wanted to look at my notes on that day --
Q. Yes. We can do that. I think it's 058-035-143. I think.
A. I had come back to join a service where all the patients were new and I was trying, if you like, to get up to speed. And at that time, there was not an outpatient clinic for the dialysis children; they were all seen on the ward because the dietician, the social worker, the nurse and so on could come. So this was a note that I wrote on the morning of the 9th because there were a number of patients coming up later that day and I wanted to familiarise myself with them so that when they came, if you like, I was up to speed to start the consultation. In fact, this is a note that I made of the details that were gleaned from their notes. The height and weight that I've written up there were gleaned from the outpatient appointment on 16 October. If you look at the flow sheets that Dr Savage had made, that's the height and weight from 16 October that I put there. In fact, I had continued this note over the page.
Q. Before we go to over the page, can we stay with

something on this page?

A. Yes.

Q. If you see a bit further than halfway down, "dialysis"; do you see that?

A. Yes.

Q. And then about four lines down from that:

"PU ++ ? How much?"

And there's something --

A. It's 1 to 2 litres. Somebody put a highlighter over that, but the original -- I actually have a photocopy of the original note, which is much clearer than that.

Q. We have that note. We have, in the chamber, somewhere Adam's original medical notes and records and it does say, I think, "1 to 2 litres" in the bit that's highlighted.

A. Yes, that's information I would have gleaned from reviewing his notes.

Q. Can I ask if you can help us? You say that you're expecting to meet Adam along with a number of other children on the ward that day.

A. Yes.

Q. And you were getting up to speed, if you like, with their conditions and going through their notes --

A. Yes.

Q. -- and this is what you extracted in relation to Adam.

A. Yes.
Q. How easy was it for you to form a view of the urine that he passed?
A. I don't remember now without looking at the notes again, but I gleaned all this information from the notes. So the information must have been there for me to extract.
Q. Thank you.
A. Could I make the comment from over the page?
Q. Yes. Let's go over the page.
A. This was an unfinished note on my behalf because I had written --
THE CHAIRMAN: Doctor, take one second. Go ahead.
A. I had written "X-rays hyphen" and I had obviously asked the clerk to obtain the X-rays for me and then I was going to continue the note. In fact, I did not subsequently carry out a consultation myself with Adam on this day because I always write a note of the examination and then sign it. I apologise that this note is not signed, but I had intended to continue. There is an outpatient letter dictated on that day, dictated by Professor Savage, so he obviously carried out the consultation on this day.

I don't remember because we had two rooms working and I don't remember -- I may have sat in on that meeting to meet Adam. But I don't recall.

MS ANYADIKE-DANES: Did you have cause prior to Adam's transplant surgery to revisit his notes again?

A. Obviously not because the next note is the day of the transplant.

Q. And the X-rays: what X-rays were you wanting to see then?

A. Because I hadn't met this patient and because he had complex plumbing, if you like, I wanted to view the X-rays, particularly of his urological system, because that was relevant if a transplant was to become available, his bladder and so on, to know some information about that.

Q. Was it relevant to you or relevant to the surgeon?

A. It was relevant to me in being able to communicate that information because obviously I would be the one trying to put the pieces together if a transplant became available and I got the phone call.

Q. I understand. You mentioned a letter. Maybe we can just go to it and confirm that this is you're talking about. I think it's 016-015-034.

A. Yes, that's dated 9 November and it obviously is a record of the consultation that Dr Savage carried out with Adam and his family on that day. He actually had probably not realised that I had turned the page in my note. There's a little bit of his handwriting on that

day in the handwritten note suggesting referral to Geraldine Walford.

Q. Thank you. But this is the letter that arises out of consultation that you would have had and which you were preparing for as we see in the notes?

A. Yes.

Q. Thank you very much indeed. You have talked about the information that you would want to gather together so that you would understand what was likely to happen in the surgery. Can I ask you what you gathered together for that purpose in relation to the surgery that was carried out on 17 November?

A. Okay.

Q. Only if you remember it.

A. Yes. I have a typed copy of the transplant discharge from for that patient, but I have requested the handwritten notes of that patient about 15 times from the trust and they have never been able to supply them. He is now a 20 year-old and his care has been in the City Hospital since the age of 18, but they have never been able to give me those notes.

Q. I'm sorry about that, but in the absence of it are you able to give us a sense of what it was you were trying to gather together?

A. In the absence of those particular notes, I'm aware --

because there were many children who got transplanted that I didn't previously know very well and I also had a routine as senior registrar in Bristol when a child came in for a transplant of what I did. So what I did was to write a summary from day 1, you know, when the child was admitted: what was wrong, what surgical procedures they'd had done, what their drugs were, what their usual daily urine output was. Information that was useful to me to remind myself of everything. Information such as bladder studies, urodynamics, any particular unusual thing about their tissue type, the viral infections they might have had or been tested for and all the vaccines they've had, because it's important to know all this information before you immunosuppress a child. So I would maybe, with a patient I didn't know them, spend two hours summarising the chart. Because you would get a phone call from UK Transplant and, in Northern Ireland, we have to then wait for the plane to bring the kidney, which might be some four or five hours later. So I often spent maybe two hours going through ten sets of notes, summarising all of information that was there so that I felt I was really up to speed by the time the kidney came.

Q. Is that something -- I'm sure you're going to go and tell me other things that you did. If we stay with that

for the moment, that summary sheet or sheets --

A. Yes [OVERSPEAKING].

Q. -- is that something you would make available to somebody else? You yourself may not be familiar with that child, but neither might the anaesthetist or the surgeon.

A. Yes, I recorded this in the notes. It wasn't a personally-kept summary; it was a long admission, if you like, but the practice now and since I've come is always that at the time the child goes on call for a transplant, I make a typed summary of everything. That goes to the transplant surgeon, the transplant coordinators and, currently, to the consultant who is responsible for live donation assessment. Obviously, that summary may need updating if the person is on call for some time, but it's standard that we have that. I actually keep them all on my computer so I have easy access to them.

Q. So now you would start that pretty much when the child goes on the transplant register?

A. That has always been my practice from 1995 when I was appointed.

Q. In 1995, just before Adam's surgery, for the purposes of the child who you were going to handle on 17 November, you made that note for yourself and for the benefit of

others because it would be on the medical notes and records. What else were you trying to gather together or appraise yourself of?

A. I would have recorded in that note my plan for all the drugs and I would have made a plan for the post-operative parameters that I was prepared to accept in terms of blood pressure, CVP, urine output.
I usually record what investigations I want done post transplant. I write maybe six, seven pages minimum.

Q. Do you record anywhere -- sorry, we're moving between what you did for that child and what your practice is. So if we stay with what your practice is and then I will come back to what you did for that particular child so we're clear. In terms of your practice, would you have recorded anywhere how urgent you thought the transplant might be or the need for one?

A. That's not part of the consideration at this particular time. That's a consideration when you're putting the child on the list. And if there are particular urgencies, there are mechanisms that you can go through with UK Transplant, if a child's life is in danger, for them to get a very urgent transplant that might not be particularly well matched --

Q. Yes.

A. -- and that they can trump the waiting list, if you

like. There are --

Q. This is 1995, sorry, doctor.

A. Yes. There was always that situation that arose. Currently, there are -- there's a group of people that you must approach if you want to jump the waiting list, and I sit on that committee, which is the Paediatric Sub-group of the Kidney Advisory Group, which meets in Bristol twice and year, and I'm a member of that committee. If you want to have an urgent patient and jump the waiting list, you must contact somebody on that committee.

Q. So if I can summarise -- and you tell me if I've summarised incorrectly -- your practice would be, once the child is going on the transplant waiting list, you'd have gathered together the information that you could.

A. Yes.

Q. You'd have identified whether the child had particular urgency because that might affect the match that you were prepared to accept for that child --

A. Yes.

Q. -- if it was particularly urgent. And even, if for some reason, you hadn't been there to do that because it was -- the child went on the waiting list before you were appointed as a consultant in Belfast, you would be putting together as soon as you knew that there was an

offer for the child, a similar kind of summary of the important medical details of that child?

A. It often took me several hours. I do recall another patient who had 20 sets of notes and it was a Saturday afternoon and I sat there for a long time.

Q. That's your process?

A. That's my process, yes.

Q. Do you give any consideration to how long a cold ischaemic time is that you're prepared to accept for the particular patient?

A. The general acceptance anywhere in the UK is preferably under 24 hours. There have been many situations, including recently with an adult in the City Hospital, where cold ischaemic times beyond that have been very successful. There was one a few months ago of 32 hours in the same hospital --

Q. Sorry, I don't mean to interrupt you. Can we confine ourselves to paediatric circumstances?

A. Okay.

Q. Just to go back, you say 24 hours?

A. The generally accepted is under 24 hours. Both Glasgow and Belfast have particular geographical difficulties and our cold ischaemic time is longer than in the UK because of transport.

Q. Yes. Was it 24 hours as the upper limit, if I can put

it that way, in 1995?

A. That's been always the generally accepted in my experience.

Q. Why is that?

A. There have been studies of outcomes of transplantation related to cold ischaemic time. Obviously, a very ideal situation is a live donor kidney. Currently, we can have a kidney removed from a parent and transplanted to a child within 2.5 hours and those kidneys do really well. There has been a judgment by people more expert than me that 24 hours is a cut-off point beyond which there's a decreased outcome to some degree for the transplant kidney. But all circumstances must be considered.

Q. Yes.

A. It's not a deal breaker, if you like.

Q. Necessarily?

A. Yes.

Q. Yes. When you acted on the 17 November case, was that your case?

A. The patient was 3 years old, he had always been looked after by Dr Savage, but when I had been a junior on the ward, I knew the child very well. In fact, his mother was a school friend of mine, so I felt particularly close to him. So because I had such an involvement

at the time of the transplant -- obviously, when I arrived, all the patients were Dr Savage's, and some of them had to become mine. So he was one of the ones I, very early on, took complete responsibility for.

Q. You arrived on --

A. 1 November, if that was a Monday. I'm not sure.

Q. So what did you do in terms of providing the mother with information about -- once you knew that the child had an offer of a kidney, what was your communication with the mother so that she would understand what was happening, what the risks were and so on?

A. That would mostly have been done beforehand by Dr Savage because that's something you do when you put the child on call.

Q. I understand.

A. And there would have been written information given at that time. Our senior nurses would also have done home visits. Some parents are more comfortable to talk about these things in a relaxed fashion at home. It would have been repeated again at the time of the transplant.

Q. That's what I'm trying to find out. Dr Savage has given evidence about what he does previously and, unless you tell me that he's done something differently with this child, what I'm trying to find out is what you did once you appreciated that there was an offer for this child.

A. Okay. I would have discussed with the parents. You can't give too much detail in case they're reading the newspapers and there have been occasions when people have figured out whose kidney they're getting. I would give limited information, I would say it's a kidney from the UK and I think that gives them reassurance that they're not frightened to read the local newspaper. I would tell them the age of the donor. I wouldn't tell them the sex of the donor because we have had families in the past where little girls have said, "I feel like a little boy, you have given me a boy's kidney". So I wouldn't tell them the sex.

I would tell them the quality of the kidney if I felt there was any issue about the length of time or the reason for the death of the donor if it had been due to an infection or low blood pressure.

Q. Sorry, pause there. That sort of information that you're just getting into now, you mean the sort of information that would be on the UK Transplant form?

A. Yes. You don't get the form until the kidney comes, but you're given that information over the telephone. So I wouldn't give any information that would identify where it came from, but the quality issues I would discuss with the parents, yes.

Q. And the cold ischaemic time, even if you didn't

necessarily use that expression?
A. It doesn't become cold ischaemic time until the time of the transplant. It's the time from when the kidney is taken out until the clamps -- until the kidney is taken out of ice. So you've got the plane journey and then the cross-match time, so I wouldn't know the total cold ischaemic time at the point of speaking to the parents, but I would be able to estimate --
Q. You might know how long it had been out, if you like --
A. Of course I would.
Q. -- of the body of the donor at the time [OVERSPEAKING].
A. And I would have an estimated time of arrival from the flight.
Q. Yes. Who would take consent, formal written consent?
A. In 1995, I --
Q. I mean literally in relation to this case, which is the only one that you've done in Belfast before Adam. Who took consent?
A. I honestly don't know. I have requested the notes many, many times and haven't got them. I don't know. I know, in Bristol, the surgeon would always have visited the ward before the child left to go to theatre. But I don't remember if they always wrote the form or not because a nephrologist would actually have all the same information. There are very strict guidelines nowadays.

You don't take consent unless you can do a procedure and I would never take a consent now. I don't remember if I did in the past.

THE CHAIRMAN: Is there any particular reason why you would not have taken consent on 17 November 1995?

A. If the surgeon was there in time to do it, I would probably have asked him. But if he arrived and there was a rush to go to theatre, you don't want to rush explaining things to parents either. I certainly would have discussed all the issues with the parents. Whether they were re-discussed with the surgeon, I don't remember.

THE CHAIRMAN: Okay, thank you.

MS ANYADIKE-DANES: Mr Chairman, I was going to move on to another topic and I'm thinking about the stenographer.

THE CHAIRMAN: Let's go on a bit longer because we only started at about 10.30.

MS ANYADIKE-DANES: Yes.

I wonder if I might move on to now focus on Adam and not just Adam, but the 27 November.

A. Mm-hm. Mm-hm.

Q. In your witness statement, you have explained how you and Dr Savage, as he was then, provided cover for each other.

A. Yes.

Q. And I think you have also said that you really didn't know that you were going to be taking on or taking over from him in relation to Adam until you got to work that day; is that right?
A. I'd been off over the weekend. We knew nothing about the transplant. We worked every other night and every other weekend, so it was my turn off. So until I came into work that morning, which would have been in region of 9 o'clock.
Q. About 9 o'clock?
A. Yes, I would have known nothing about the transplant in progress.
Q. Well, did Dr Savage normally have his hospital duties every other Monday or something regular like that?
A. I haven't actually been there long enough at that time to have developed a routine, if you like.
Q. Yes.
A. But Dr Savage's contract was 50 per cent university and 50 per cent hospital. Now, for 15 years the hospital had got an awful lot more than 50 per cent, but part of the reason for me coming was also to free him to do his university duties.
Q. I understand. In any event, you arrived at 9 o'clock and what does he tell you, so far as you can recall? I'm not asking you to give it word by word. I'm trying

to get a sense.

A. I have a clear recollection of walking down the corridor and meeting him coming out of the theatre in theatre blues. I don't have a recollection of what exactly conversation we had, but obviously I was made aware that there was a transplant in progress and would have been giving, I expect, the time situations and details about drugs. I feel fairly certain we probably had a detailed conversation about immunosuppression because it is clear to me from my written notes that we must have made a plan to give azathioprine, which hadn't been in his original clinical notes.

Q. Did you have that discussion in the corridor? Did you go somewhere to have it?

A. I don't remember because, coming down that corridor, I would have been on my way to Musgrave Ward where my office was where I would have put my coat and my bag. I also would have been responsible to do a ward round and see day attenders and so on. I certainly had some patients to see on the ward round because the other patient was still in, the little transplant boy from 10 days before, and he would have take a considerable amount of my time each morning on a ward round. So I don't remember whether we talked and walked or sat down or what we did.

Q. What was the information that you would have wanted to have from Dr Savage going into a situation like that?
A. Okay. I would have wanted to have known a bit about the child, obviously once he told me who it was I could probably have recollected my notes from the 9th when I made a little bit of a summary. I would have wanted to have known the details about the kidney that we have already discussed. I would have wanted to have known, at that time, if he'd gone into theatre, if there was any particular problem that I should know about. But my focus would have been largely on what my role was to be. That would have been in the post-operative period. But undoubtedly we had, I expect, much discussion about immunosuppression because we had not yet come to a combined way of doing things, if you like.
Q. When you say that you would have wanted to know something about the kidney and something about the time and so forth, in fact, from the time point of view, this kidney was perfused at 1.42 on the 26th. Dr Savage has expressed some concerns about that.
A. Yes.
Q. But he -- I'm not sure "deferred" is quite the right expression. In any event, he was prepared to accept that the team -- it was preferable for the team to be fresh, even though that extended the time for the

kidney. Did he mention anything to you, so far as you can recall, about the time?

A. I don't recall the exact content of the conversation. I can only surmise what I know I would have wanted to know, but I don't recall details of the conversation.

Q. I understand. Do you know if you then went in or whether there were other things you wanted to do before you went in, apart from take your coat off?

A. Yes. I don't recall precisely when I went in because I did have other duties, for example the ward round and to see the other child. My decision as to whether to go in very quickly or not would have depended on the information I was given as to how close we were to vascular anastomosis because that was the time that I wanted to make sure the drugs were in place, that they had been prescribed. Obviously, we had made a decision to prescribe a new one from my reading of the notes.

Q. Did he tell you that, how close he thought --

A. I don't remember the detail of the conversation, but I can only surmise that we must have talked about those things.

Q. It's a difficult position. You are walking down with your handbag and coat. Did you make any notes of what he told you at all, even if you no longer have them?

A. Not at that point in time, no. I would have -- I did at

some point in theatre that morning, before the vascular anastomosis. Again, I seem to be caught out with making these summaries and not signing them. But I'd started to make a note and I didn't think anybody else was going to write in the notes before I finished. But my routine with a transplant, once the piece of paper comes from UK Transplant and everybody's operating and I have time on my hands, I start to record the tissue type and the cold ischaemic time and all those details, if they haven't been -- they're generally available in the phone call. But in this case, they weren't written in the notes. So that would have been routine information for me to record, so I began to record that and, of course, before I'd finished, somebody else had taken the chart and written it again.

Q. Can I ask you about that? You said you were -- some of the things you recorded are the sorts of things that would have been available in the phone call.

A. Yes.

Q. That's part of what UK Transplant would have informed -- well, Dr Savage, I presume, because they've got the form there.

A. Yes.

Q. Did you expect those details to be in his notes?

A. My normal practice always when I get the phone call --

I mean, I could be anywhere when I get the phone call. I write it on a piece of paper and transcribe it into the notes at the first opportunity.

Q. Is that your general experience? You would have seen the notes of 12, I think --

A. Yes.

Q. -- children in Bristol. Is that your general experience as to what happens?

A. Yes.

Q. But in any event, you were filling that in yourself?

A. The form from UK Transplant would have been available in theatre, and I was reading it and taking some details from it.

Q. I understand. Can I just ask you, what other notes are actually there in theatre, records of what is happening if you wanted to see that? What else is there?

A. With a transplant, it has always been our routine both in Bristol and Belfast to request from records all of the files of notes because you never know, there might be some little detail that the surgeon or somebody wants to know. So we request -- be they ten, be they 20 charts of notes -- that they all be available at the time of the transplant.

Q. In the theatre?

A. They go with the child. Once you have got them, they go

with the child.

Q. I understand. Does that extend to X-rays as well?

A. We request all old X-rays because there might be a question about the bladder size or plumbing questions, if you like.

Q. Yes. I understand. Who is responsible for ensuring that that request goes out and the notes do actually come and accompany the child into theatre?

A. In the daytime, the ward clerk would have been asked to get them.

Q. Sorry, I beg your pardon. I should have been clear. I'm talking about 1995, in case procedures have changed. In 1995, who would be responsible to that?

A. In the daytime, it was the ward clerk on the ward. If it was after five, there's a clerk based in the A&E department on reception and she covers the whole hospital at night. So if notes are required at night, she would have to go and search for them. Because of this problem, it has always been our practice -- and I think was the practice in Belfast before I came -- that the most recent sets of notes for transplant patients were always held in a filing cabinet immediately accessible on the ward. But of course, if there were 10 or more charts, the very old ones would be in a particular place in Records where we isolated the

renal notes so that they were easily found. There's a place in Records for renal notes.

Q. So far as you can recall, were Adam's notes in the operating theatre?

A. As far as I can recall, but I don't have a detailed recollection.

Q. I understand. Would you have wanted to look at them as part of getting ahead of yourself, if I can put it that way, for the work you're going to do post operation?

A. At that time, mid-transplant, the vascular anastomosis had already commenced before I came to work. My focus would have been on the immediate peri-transplant information and making a plan for afterwards.
I probably wouldn't, at that stage, have been going a way back, but I had made some sort of summary on 9 November.

Q. That's his medical notes and records that come with him, but of course, there are notes and records being generated throughout the course of the surgery itself, like the anaesthetic record, for example.

A. Yes. That's in the realm of the anaesthetist. Another doctor in theatre would never examine the anaesthetic record during theatre.

Q. You wouldn't want to look at that?

A. It's not my record. I would look at it in intensive

care afterwards to look at the sums of how much fluid and what drugs and what times, but it's not my record. I am not making notes of it. And the anaesthetist annotates it very frequently, so you wouldn't take it away from him.

Q. Yes. In terms of the swabs that are being recorded on the whiteboard -- I think that was the practice then --

A. Yes.

Q. -- that's there for you to see?

A. That's up on the wall yes.

Q. And you saw that?

A. I can't remember if I looked at it during my visits to theatre. I certainly recorded the information afterwards in my note. But as to whether I looked at it during my visits in and out, I don't recall.

Q. I'm now going to ask you about -- I'm trying to see if I can provide for the chairman and everybody else, for that matter, some sort of sense of where everybody was. I wonder if we can firstly pull up the site plan so we can see the orientation within the operating room. It's 300-005-005.

There we are. If you look up at the top, the orangey-pinky thing. That's Adam Strain's theatre.

A. Yes.

Q. You recognise that from that, do you?

A. Yes.
Q. It doesn't look quite like that any more?
A. It's a storeroom now.
Q. Exactly. The greeny thing, that's the other theatre that was in use that day.
A. Yes.
Q. Do you recognise that there were two theatres?
A. Yes.
Q. And then the green route is the route to the blood gas machine, which I presume you'll be familiar with. And then the pinky route or magenta route is the route to and from either Musgrave Ward or, if it's broken, to paediatric intensive care. Then there's a blue --
A. Well, paediatric intensive care in those days -- do you see where it says "theatres ICU" near the blood gas analyser?
Q. Yes.
A. Paediatric intensive care was there. The new intensive care hadn't been built yet. It didn't open until several years later. Intensive care was in behind theatres. Do you see where it says "theatres ICU" just highlighted [OVERSPEAKING] --
Q. Yes, I see that.
A. Intensive care was there --
Q. So what was the magenta --

A. [OVERSPEAKING] through the kitchen. There was a little kitchen between theatres and ICU and you had to wheel the patient through the kitchen.
Q. Sorry?
A. You had to wheel the patient through the kitchen to get from theatres to intensive care.
Q. From the theatre, you would take your patient on the journey to --
A. There was a little kitchen in between. The building was not fit for purpose in those days, I dare say. But you came through the kitchen. The other option was to go out through the corridor and back in again, but it was quicker to go through the kitchen. It was just a little place where people boiled a kettle and made a cup of tea.
Q. Thank you. The broken magenta line that's going to those two squares marked "1" and "2", do you know what that is? Can you see that? There we are. Do you know what that is or what that was, rather? It doesn't matter if you don't.
A. Would they be the side wards in ICU? It looks like that.
THE CHAIRMAN: If you look at the bottom left, doctor, the legend there -- "Adam Strain room" and "PICU".
A. I don't think I would classify them as HDU because there

were frequently ventilated children in those rooms. I would have understood them to be intensive care rooms. High dependency generally doesn't include ventilation.

THE CHAIRMAN: Maybe not very much turns on this, but they're marked "HDU1" and "HDU2". Because our understanding was that that's where Adam was taken to in PICU rather than the area that you have identified as theatres ICU; could that be right?

A. He was on a side ward. Immunosuppressed children always would be in a side ward. Intensive care had one big area that had four beds -- you see just above where it says "PO" there's a little box that says "ICU" -- and then there were two side wards in intensive care. I wouldn't classify them as HDU.

THE CHAIRMAN: Whether you call it HDU or ICU, is that the location to which Adam was taken?

A. Yes, it was.

MS ANYADIKE-DANES: Thank you. That's what we were trying to identify.

A. But he didn't come that route; he came through the kitchen. I remember.

Q. It obviously has made an impression.

A. Yes.

Q. So if we then focus on the two theatres. There's a door at the top left; is that right? The pinkish one with

the cross on it. Is that not a door just there?
A. Yes.
Q. And is there then a way out at the bottom right, where that green line starts?
A. I only remember one door into that theatre, but I'm having trouble orientating myself.
Q. If anything turns on it, we can show you the photographs as it now it. Ah, that's helpful, there.
A. The place with the blood gas analyser was what we called the kitchen. There was little ...
Q. Looking at the theatre on this plan, if I can put it that way, where is the top of the bed where Adam would be lying?
A. The top of the bed would have been -- do you see where the pink arrow is, the point of the arrow?
Q. Yes.
A. If the head was there, the toes were facing up the ways from there. So that was the head of the bed there.
Q. His head was closest to that theatre that's coloured green is what that means?
A. Yes.
THE CHAIRMAN: Does something turn on this, Ms Anyadike-Danes?
MS ANYADIKE-DANES: I'll just going to now go to the photographs so we can see how the photographs are

orientated. Can we go to 300-020-031? It might not help. I thought there was a door there. Sorry.

That is a photograph of the operating theatre as we understand it, not obviously of Adam's operation.

A. That's Dr Kielty, the anaesthetist is Dr Kielty. He's now retired. I recognise him.

Q. Let's look at the other one to make sure we have got the clearest one. Next page, 032. There.

A. Okay.

Q. Can we go to the previous one? I'm not sure that does take us much further. When you went in, that's the monitor at the back, is it, that we can see --

A. The monitors often change position. The anaesthetists set up the machines according to --

Q. Yes, sorry. Where is the anaesthetist positioned, at the top or at the bottom?

A. The anaesthetist is the guy with the blue hat and the --

Q. I understand that.

THE CHAIRMAN: With his hands on his hips?

A. That's him, yes.

MS ANYADIKE-DANES: He's at the top end of the table?

A. Yes.

Q. Yes. And he would have been there in relation to Adam's surgery?

A. Yes.

Q. Where he angled his monitor is a different question, but the monitors would be up at the top end of the table too; is that right?
A. Yes.
Q. Closest to us, the right-hand side, who is that person?
A. She's dressed as a nurse.
Q. So she's a scrub nurse or a runner? A nurse?
A. A nurse. They all look the same to me in theatre. I don't know their roles because I'm not responsible for defining their roles.
Q. Does one see two surgeons then, so far as you can tell?
A. As far as I can tell -- and a scrub nurse --
Q. That looks like a scrub nurse.
A. -- who is handing the equipment.
Q. When you went in to Adam's surgery, can you help by how people were configured in relation to this?
A. I don't have detailed recollection as to who stood where, but there were two surgeons and there was one on either side of the table. As to which side, I don't know.
Q. That doesn't matter.
A. The anaesthetist -- and at some time, I recall two anaesthetists -- would have been at the head -- the anaesthetist is always at the breathing end of the patient. They would have been at the head of the table.

I don't recall how many nurses were there, but there were nurses. Obviously, one must have been gowned and gloved to be a scrub nurse.

Q. And is this -- you may not be able to remember at all. But is this sort of fairly representative of how it would have looked when you went in and out?

A. Looking -- I don't know this photograph here, but looking here, it looks like this is a very little patient because the instrument tray is at the end of the table. The instrument tray is usually behind the nurse, you know, it's not usually at the -- a surgeon could answer this much better, but it is not usually at the bottom of the table; it's usually to one side of the table, all the instruments. So that looks a bit of an odd configuration to me.

Q. Can you help with where the swabs would be counted -- where would that be marked up?

A. I don't see the noticeboard, but it was on the wall. I recall a whiteboard. There's always a whiteboard in theatre, but I don't see on that photograph.

Q. Where would the notes be kept? If the notes had come with the patient, where would they be in this photograph?

A. Somewhere peripheral, away from the sterile field. So either on a trolley or a chair, around the edge of the

room. There's no defined place, I don't think.

Q. When you would go in, where are you going to position yourself if I can put it that way?

A. I'd probably position myself as far away from the sterile field so I wouldn't get in anybody's way because I didn't have a defined role. But somewhere like where I am now compared to the picture. This side of it. The door was, you know, near Dr Kielty's elbow. The door would have been off this part of the picture here (indicating). So I'd have just come in the door and tried not to make myself a nuisance.

Q. What are you coming in to do? Your evidence is that you came in a number of times, not just once. So what are you coming in to do?

A. My primary purpose was to make sure that the plan for immunosuppression was clear because, obviously, we didn't seem to be working off one protocol. Part of the immunosuppression was from my new protocol and yet the azathioprine was from the old protocol. So I wasn't sure what had been communicated about that. I think we had made a decision around about 9 o'clock to give the azathioprine, so that needed to be communicated. I expect I probably went to the ward to get that drug because we didn't keep it in theatre. And my other purpose in theatre really was -- I wasn't in the post

long enough to have a habit at that stage, but my habit now is to try and keep anxious parents informed. So my habit now is once the vascular anastomosis has been made and the clamps released and the kidney pinks up, I inform the parents: the kidney looks pink, it all looks okay so far, but it'll be several hours yet because, of course, you have the plumbing to do yet. You have to plumb the urethra into the bladder, so it often would be a couple of hours after the vascular anastomosis before the child is in to intensive care.

Q. How do you know the pink kidney looks pink?

A. Well, now, because I go to the theatre for every transplant.

Q. No, no, no, I know. How would you know that when you went to theatre?

A. Now I make it my -- it's like a modern day miracle to watch a kidney pink up. If you're in theatre, you watch it.

Q. That's what I'm trying to say: you would go and look.

A. Now I do. I don't recall -- because I wasn't there long enough to have a habit at this time -- whether I was in theatre for release of the clamps in Adam's case, but I would find it hard to believe that I wouldn't have wanted to have seen that because it is miraculous to see.

Q. What I'm trying to find out, without necessarily overly signalling so I get your evidence as opposed to my suggestion, if I can put it that way, is: are you looking at what's happening?

A. At the time of the release of the vascular clamps, I generally approach far enough away that I'm not going to interrupt the sterile field and peek over somebody's shoulder because it is amazing to see it, yes.

Q. And when you're there, do you talk to anybody? I'm trying to get a sense of what the atmosphere is. Is everybody very quiet or do people announce what they're doing and ask questions?

A. Well, at the time of the vascular anastomosis -- obviously, it's a very intense time for the surgeon and I would be very careful not to distract him at the time of very intense surgery. I would feel more allowed to speak with the anaesthetist because I -- obviously, I would have had reason to have conversations about immunosuppression and so on. But generally, in my experience, there's an intense atmosphere at times of intense surgery, but a fairly relaxed atmosphere in theatre at transplant.

Q. I'm trying to get an indication -- not just necessarily your experience, although it is good to have a context in which to put it in -- but in terms of your

appreciation of what was happening on the 27th. You didn't just go in once; you have conceded you went in a number of times.

A. Yes.

Q. So is there discussion, is there a question and answer? What's going on as you go in?

A. I don't recall precise details. I can only surmise from my own notes that I must have discussed immunosuppression. I know that I discussed CVP and you'll probably come on to that.

Q. Yes.

A. But I don't ... I don't, at 17 years hence, recall other precise details. The first statement I was requested to write was in 2005 and even that was 10 years hence. I think some other people had written a statement for the coroner which was in more recent memory, but I hadn't been requested to do that, so I was, first time around, looking at details 10 years later.

Q. I'm going to ask you about that later on. If you went in and every time you went in there was absolute stoney silence in terms of communication, is that something --

A. That would have stood out.

Q. Thank you. That's what I'm trying to get at. Thank you very much indeed.

THE CHAIRMAN: If you're about to move on to CVP, let's break now, doctor, for 15 minutes. We'll come back at 12.15. I'm not sure we'll necessarily break for lunch at 1 o'clock. That depends on how far we're into Dr O'Connor's evidence.

(12.00 pm)

(A short break)

(12.21 pm)

MS ANYADIKE-DANES: Dr O'Connor, where we were is that you were orientating us in the operating theatre itself and you were describing who was there so far as you can recall.

A. Yes.

Q. And I think that almost the last thing you said or close to the last thing you said was where you thought the notes and records would be and where you were positioned and whether you would take the opportunity, if you were there at the appropriate time, to have a look and see the kidney and so on.

Just in relation to where the notes and records would be, is the protocol kept somewhere more obvious than just the total notes and records?

A. I can only speak really to my more recent recollection of what happens. Normally now because I don't recall on that day. But what happens normally now is the protocol

is often on the anaesthetic trolley because we will have written down the doses of the various drugs and the anaesthetist will often refer to it.

Q. Yes. And you had said, I think, earlier, when you were giving evidence, that one of the things you were doing is that you were actually starting to write up your post-surgical report about some of the matters you could see in the notes and records. I think you were getting them from the kidney transplant form.

A. The form comes in a little pouch. When the kidney comes, it's --

Q. I understand.

A. So I was reading that and recording the details.

Q. That's right. Did you look to see what aspects of the kidney protocol had been complied with or not? Effectively, it's your protocol.

A. Yes. I don't recall at that stage. My focus really would have been on what I had to do post-operatively. That would have been my main focus, I think.

Q. But the protocol is something that guides the entire process.

A. Yes.

Q. So were you looking to check and see whether the protocol had been complied with?

A. I don't recall, but I do know that on the protocol

you're referring to, it didn't refer to the same drugs that we had used. So we were, if you like, between protocols.

Q. Yes, I understand. What was the protocol so far as you could recall that would be in there? Is it two protocols or the 1990 protocol?

A. I don't recall. Obviously, Dr Savage must have had both -- well, I think he might have had both available in making his plans because he had taken the dose of methylprednisolone from the protocol I brought from Bristol.

Q. The requirement to have an electrolyte test other the blood test done just prior to surgery, did you know whether that had happened?

A. I have no recollection of knowing about that requirement. I may just not remember, but I have no recollection of having a concern about preoperative electrolytes.

Q. You say you have no recollection having concern. When you were going through the handover Dr Savage would have given you, is that the sort of thing he'd have told you about?

A. I don't recall the exact conversation we had, but I would have expected he told me about anything pertinent. But I don't recall the details.

Q. I understand. In a similar way, did you have any knowledge of whether or not a chest X-ray had been carried out?

A. I don't recall knowing about that or not, but I had no awareness of any particular concern about Adam's chest. I frequently, still as recently as last week, made a consultant decision not to do a preoperative chest X-ray because the child I was looking after, who had a transplant last Monday, was well and I assessed that he did not require a preoperative chest X-ray, and I think I'm senior enough and experienced enough to be able to make that decision. A guideline is only a guideline.

Q. Yes. Sorry, you've gone on to a slightly different point. I was trying to find out whether you were aware of the fact that Dr Savage, in his protocol, had wanted a chest X-ray to be done and whether you were aware of whether it had or it hadn't.

A. I don't recall.

THE CHAIRMAN: Your point is, even if the protocol says there should be one, that's not an absolute rule?

A. No. Absolutely not.

THE CHAIRMAN: But what seems to have happened in this case is that there was to be one and it's not -- we don't have it. It's not clear whether there was one, although

a doctor did fill in a form which should lead to it having been done. That's the difference here. Professor Savage did not consciously dispense with the need for an X-ray. On the contrary, there was to be one and it turned out -- well, we don't have it.

A. I don't think I can comment because I wasn't aware at that point in time.

THE CHAIRMAN: And the trust's position seems to be that there wasn't one because the rest of the form, the other side of the form, which would have been completed hasn't been completed.

A. Could I make a point that because I had written a note on the chart about the subsequent X-ray, about the line going up the neck, when I was first required to make a statement I felt it was important for me to look at that X-ray. It wasn't produced, I think, for a couple of years.

MS ANYADIKE-DANES: Yes. When was the first time you became aware of the fact that the electrolyte test or the test that Professor Savage had wanted to have done in accordance with the protocol had not actually been done?

A. The protocol -- the typed protocol didn't necessitate an extra blood test. The protocol didn't necessitate an immediate preoperative blood test at that time.

Q. Sorry, let me rephrase the question. Dr Savage is quite

clear that he wanted another test done before surgery.
A. Yes.
Q. For various reasons, it couldn't be done in the early hours of the morning and his view was it was going to be done as soon as Adam was anaesthetised.
A. Yes.
Q. So what I'm asking you is: when is the first time you appreciated that such a test had not been done: in the early hours of the morning or as soon as Adam was anaesthetised?
A. I don't think I appreciated that such a test had even be requested. I don't recall.
Q. It's in his notes and records.
A. But while I was in theatre that morning, I don't recall being aware.
Q. When was the first time you appreciated that hadn't happened?
A. Probably when I was making statements, when I was reviewing the notes for statements.
Q. There is also another report that you might be able to help us with. I wonder if I could pull up 301-081-057, just while we're on the subject of reports. There we are. You can see that -- you can't very easily see the date of it because that's obliterated. If you look very, very carefully, you can see, on that band at the

bottom, "26/11/95". And that's the date of specimen. There's a lab number and then you can see the date of the report, "27/11/95". And if one looks at the serum sodium value, you can see it's 133.

A. Yes.

Q. Do you recall ever seeing that lab result?

A. No. I think I was made aware of it in November last year. November, round about November 2011.

Q. Thank you. Just finally on personnel, when you were telling us where everybody stood, you gave evidence in -- I think it was your third witness statement for the inquiry, 014/3, page 5 -- the answer to question 6(a).

You say:

"Dr Taylor and his registrar, Dr Montague, were the anaesthetists I saw in theatre whom I regarded to be the anaesthetic team."

A. Yes.

Q. Did you ever see any other anaesthetist as part of the anaesthetic team?

A. I have no recollection of seeing any other anaesthetist.

Q. Well, given that you had identified -- did you know Dr Montague?

A. Yes, I did.

Q. Given that you had identified Dr Taylor and Dr Montague,

did you know Dr Taylor?

A. Oh yes, I did.

Q. Might it have impressed itself on you that you were now seeing somebody else?

A. I have no recollection of seeing anybody else.

Q. I know. It's a different question I've asked you. Given that you knew both those gentlemen and had identified them as part of the anaesthetic team, if you had then seen somebody else in there, is that something that might have impressed itself on you?

A. I think that's hypothetical and I find it difficult to answer it.

Q. It is.

A. Because I don't recollect seeing anyone else of an anaesthetist consultant.

THE CHAIRMAN: When you said before the break that you had seen an anaesthetist and:

"At some time, I recall seeing two anaesthetists."

A. Yes, that was Dr Montague, the other one.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: Then I think in your witness statement, a little bit further on, to 6(b):

"State whether there was ever any anaesthetist other than Dr Taylor and Dr Montague."

You say:

"I don't recall any other anaesthetist being present there."

A. Yes.

Q. And then I think you have also said that Dr Montague was present when you arrived in theatre, but you can't recall if he remained present for the whole procedure.

A. I don't recall how long he remained present.

Q. Thank you. Can you help us with this, your second witness statement, 014 --

THE CHAIRMAN: Sorry. I know that Dr Montague wasn't there all the time, but you didn't come in until 9 o'clock. In fact, you weren't seen on -- you're not even sure. You came in about 9, saw Professor Savage. You have a discussion with him in which you learn for the first time that there is a transplant going on.

A. Yes.

THE CHAIRMAN: You go through various pieces of information with him. You may go to your own office and deposit your bag and your coat and so on.

A. Yes.

THE CHAIRMAN: You are certainly not in theatre at five past or ten past nine. It's almost certainly going to be a bit after that, isn't it?

A. I would imagine so.

THE CHAIRMAN: But you're quite clear that, at some point

after that, you saw Dr Montague there?

A. I'm clear that I saw him. I'm not clear how long for.

THE CHAIRMAN: It couldn't have been before 9 o'clock because you weren't in the hospital.

A. No.

THE CHAIRMAN: And it wasn't immediately after 9 o'clock. It was most probably not immediately after 9 o'clock.

A. I don't know exactly when I went into theatre. I did those other things first that I've spoken to you about.

MS ANYADIKE-DANES: I wonder if I might pick up on that point. You said that Dr Savage met you, robed up, in his theatre blues, I think you said he was, coming down the corridor and that's how you met.

A. He was actually coming out of the theatre door. I think I remember because I was a bit shocked to be walking down the corridor with my coat and bag and there was a transplant happening because it is a big event for us and on a Monday morning you don't expect --

Q. Do you know where he was going to immediately after he left you?

A. I presume he was probably going to speak with Adam's mother. His office and the ward and my office were all in the same direction on Musgrave Ward. So I would have presumed, knowing him and his communication with families, he was probably on the way to speak to Adam's

mother.

Q. If you were going into the theatre, just to take a sense of where things were yourself having just been told that you're now looking after that job, if I can put it that way, what do you have to do to get yourself into an appropriate state to get into theatre?

A. Well, I have to go to my office and divest myself of my coat and bag. I have to go to the nurse's changing rooms -- the female changing rooms, which were mostly used by the nurses -- and put on blue cotton pyjamas and clogs, because you don't go into theatre in ordinary clothes.

Q. Yes. Can you help at all as to roughly how long that might have taken for you, leaving aside the amount of time you might have taken with a handover from Dr Savage? Leaving aside that element of it, just to physically go to your office, take off your coat and put your bag somewhere and then go into the nurses' or the ladies' changing room and get robed up in that way, put on your clogs and get into the operating theatre; roughly, how long would that take?

A. If I did those tasks consecutively, I'm sure 5 to 10 minutes, but I don't recall whether I went to the ward first, whether I saw my other transplant patient. I don't recall how quickly went to theatre. The dressing

up is a matter of five minutes.
Q. And getting there?
A. Yes.
Q. And you said that the patient of yours with the transplant patient for the 17 November, you said that that child was still in hospital?
A. Until 4 December.
Q. Yes. And you had other patients that you had to deal with?
A. I don't remember what other patients were in the ward because the transplant patient stood out. I have since checked his discharge letter to see when he went home.
Q. It's not that I need to know how the other patients are. What I'm trying to ascertain from you is to what extent they were your patients that you had to deal with before you could feel that you could go straight into theatre and see what was going on in there with Adam's surgery?
A. The transplant patient I think would have been my priority; if there were other patients in the ward, they are likely to have been less sick.
Q. Let's put the other patients to one side for the moment. You have been told by Dr Savage that he has university duties and he would like you to cover for him, if I can put it that way.

A. Yes.
Q. Which means going, periodically, into the operating theatre and making sure you are there to ensure that the appropriate immunosuppressant drugs are administered.
A. Yes.
Q. And then you have your transplant patient there, who had his transplant about 10 days ago.
A. Yes.
Q. Are you able to help us -- and please don't say if you're not -- in order of priority, which is the greater priority for you?
A. Can I say that in my previous training in Bristol I never went to theatre?
Q. I understand that.
A. So that's ... I didn't feel I had a very active role in theatre. But I did have a priority here because I wasn't clear what immunosuppression protocol that we were going with, and I felt that if I wasn't clear and we may have had some discussion that morning to give the azathioprine, that that would have needed to have been communicated.
Q. Who's going to administer?
A. The anaesthetist gives all the drugs in theatre. I suspect, but I don't know, that I would have had to procure the drug from Musgrave Ward because it would not

be kept in theatre, a drug like that.

Q. In any event, you want to satisfy yourself that the anaesthetist is clear as to what immunosuppressant drugs are to be administered?

A. Yes.

Q. That I understand. What I'm trying to ask you though, and maybe you can't help, is recognising that you've got to do that at some stage and, obviously, you're going to do that before anybody starts getting close to that situation. You also have your other patient there. Of those two situations, which has priority for you or which do you think would have had priority for you?

A. I think the transplant would have had priority.

Q. Which one?

A. Sorry, Adam's transplant, but I also didn't have an active role of care for the patient while he was in theatre. So I would have I think felt it adequate to, if you like pop in and out as you've described.

Q. I think it's the first popping in that people are particularly interested in.

A. Yes.

Q. Thank you. During that time when you're moving in and out, from time to time, in the operating theatre, do you have any cause to have any contact with the transplant coordinator? Is she a figure that you

discuss anything with?

A. I recall ... I think I recall -- it's very hard, I've read so many statements. But certainly for other transplants, she would have been present at the times in theatre. Um ... Again, I don't recognise that she would have had an active role in theatre, so I don't remember what discussions we may or may not have had.

Q. Do you think you had any?

A. I am not clear. I think I recall seeing her, but I don't recall a conversation.

Q. Thank you.

Slightly later than I intended, I wonder if we can move on to CVP. Can we go to your first witness statement? In order of sequence, you provide a witness statement for the inquiry at 014/1, and I'm going to ask it to be pulled up to page 2. It was after that witness statement that you provided a PSNI statement; isn't that right?

A. Yes.

Q. Is this your first statement that you make about these events?

A. Yes, first ever.

Q. And did anybody prior to the inquiry ask you to record your recollection of events?

A. No.

Q. Can I ask you: did that surprise you?
A. I think it didn't at the time. I was a very new consultant of three weeks. The patient was very well-known to Dr Savage and um ... My impression was that whatever event happened, happened in theatre where I did not have care of the patient. So at that time, I think it didn't surprise me. Maybe nowadays -- I think things are very different 17 years later.
Q. Yes. Can we look at the answer you give to question 2?
A. Okay.
Q. Let's start with your written note. You say:

"My note written at the time states that the CVP was known to be 17 at the start of the procedure and, in view of this high initial CVP, the accuracy of recordings was uncertain. I had been informed that there had been difficulty inserting a central venous line at the start of the procedure and I made a presumption that this difficulty was due to previous multiple venous access. I assumed that he may have had one of his external jugular veins tied off as this was common practice at the time of insertion of central lines in RBHSC in 1995."

You have put that in terms of you making presumptions and assumptions.
A. About which aspect?

Q. Well, there are two quite glaring ones. The first is that you presumed that the difficulty with inserting a central venous line at the start of the procedure was due to previous multiple venous access.
A. Yes.
Q. You don't say anybody told you that; you say you presumed that.
A. I think I phrased it that way because I could not recollect the exact content of the conversation that I had with Dr Taylor. I had known when I was in hospital as a junior previously he was there as a consultant and my impression of him was as being very competent in inserting lines. So whether he told me there was a difficulty or whether I just presumed because there wasn't a good CVP -- which I would consider essential -- that he must have had difficulty. I don't genuinely recall what he told me about attempts, number of attempts, to put a line in. But I was concerned --
Q. We will come to that detail. At the moment, where I am is the way that you have phrased it.
A. Yes.
Q. You phrase it that you made a presumption about what was the cause of the difficulty.
A. Yes.

Q. And you phrase it that you assumed something about Adam's external jugular veins. If we move on to your PSNI statement, that's 093-020-057. This a statement for the police or the PSNI, I should say, is almost exactly the same, is it not, as your witness statement for the inquiry? In fact, if we start again with, "my note written at that time".

A. I think I brought the statement for the inquiry with me as an aide memoire when I was speaking to the police so I think I probably read it verbatim, but I can't remember.

Q. It does seem to read verbatim, apart from the last page. We can pull up the last page.

A. It was handwritten.

Q. 59 is the last page. And I think where it starts to depart is where it says, about almost halfway down:

"In response to specific questions from DS Cross, I can state ..."

A. Yes.

Q. And I think, from there on, it's different for obvious reasons. But other than that, it would appear to be a verbatim record of what you provided to the inquiry.

A. Yes.

Q. Let's look at another statement of yours.

A. My copy of this that I have in my possession, the bit

from there on is handwritten. So it had been written by Detective Cross as I spoke to him, which I found quite difficult. The previous bit, I was able to consider the words I used and to make a statement, but Detective Cross was writing as I spoke. I prefer to reflect on what's written. You don't have that chance so much when somebody's writing down verbatim what you say.

THE CHAIRMAN: Is there a page 60 in this? Is 59 the last page?

MS ANYADIKE-DANES: Let's go and see. I think that's the last page.

A. Yes.

THE CHAIRMAN: Right.

MS ANYADIKE-DANES: The further details that you furnished to the PSNI that aren't in your inquiry witness statement are, first of all, you say that:

"After the operation, I discussed the CVP figures with Dr Taylor."

And then you also talk about how:

"A subsequent chest X-ray confirmed the line to have been in the wrong position. I have recorded that the kidney was bluish."

I don't believe that the reference to the kidney being bluish at the end of theatre is a piece of

information that you provided in your inquiry witness statement.

Then you go on to say:

"This would have made me anxious to observe the urine output over the next few days. However, in my experience, kidneys which appeared bluish at the end of theatre have later proved to be satisfactory."

Is there any reason why you didn't mention the fact that it's recorded that the kidney was bluish at the end of theatre?

A. No specific reason. It is in my handwritten notes. I was not aware how significant that was because I don't genuinely recall if that was something that was reported to me by somebody in theatre or whether I observed it. I certainly don't have a picture in my mind of a bluish kidney, but I remember something made me write the note that I wrote post-operatively. I think it was a conversation I heard in theatre, but I don't have a clear recollection at all.

Q. I understand. Did you know or appreciate that Adam had had an inquest?

A. Dr Savage kept me informed. I know that he and Dr Taylor were present at the inquest.

Q. Did you know that the coroner had engaged an expert and one of the things that the expert had concluded was

certain details about the state of the kidney when it was examined at autopsy?

A. Those details I have read on the inquiry website subsequently. The expert reports and things wouldn't have been available to me back then.

Q. It doesn't matter whether the expert report itself was available to you. Were you aware of the fact that an issue during the inquest was the condition and state of the kidney as observed and recorded during autopsy, the transplanted kidney?

A. Not at that time.

Q. When did you first know about that?

A. When I started to read the pathologist reports and so on that became available on the inquiry website.

Q. So you didn't appreciate that until you started to look at records for the purposes of the inquiry?

A. Yes.

Q. Thank you. Sorry, then I was going to take you to witness statement 014/2, page 4. Just give me one moment. (Pause).

Sorry, I think it's page 8. If you go right down to the bottom, (a), after the second bullet you say:

"I recall discussing the CVP with Dr Taylor as I had noted a high reading of 30 perioperatively. Dr Taylor informed me that the reading had been 17 at the time of

the insertion of the line. As this was clinically unlikely in a child who had received overnight dialysis, he had presumed the reading to be inaccurate as the position of the line was not certain."

A. Mm-hm.

Q. When I had read out to you your previous statement, both for the inquiry and for the PSNI, the person who'd made presumptions or assumptions was you -- in the way that you had used your language -- and you had said you were careful about your language and which is why you were a little bit concerned that the detective was taking down notes as you were speaking. So you were careful about the language you selected. But that language had you presuming and assuming and this language has Dr Taylor presuming. Now, who presumed?

A. I am not --

MR BRADLY: Sir, sorry to rise. I wonder if we could look very closely at the presumption that is being specifically referred to.

MS ANYADIKE-DANES: Yes, I beg your pardon:

"As this was clinically unlikely [that is the figure of 17 at the time of the insertion of the line] in a child who had received overnight dialysis, he had presumed the reading to be inaccurate as the position of the line was not certain."

MR BRADLY: That's not the same presumption that's referred to at WS014/1.2, which is the presumption that this difficulty was due to a previous multiple venous access.

MS ANYADIKE-DANES: Thank you very much.

Then maybe you can help us with that. Is it that Dr Taylor made the presumption that the reading was inaccurate?

A. Yes. At the time of the reading of 17, that was several hours before I came to work that day.

Q. Yes.

A. So I would not have been present to make an assessment of the accuracy of the CVP, nor was I qualified to make an assessment of the accuracy of the CVP because that is within the realm of the competency and training of an anaesthetist and is not within the realm of the competency and training of myself to assess the accuracy of a CVP.

Q. You did refer to having concerns about it, the CVP at 30?

A. I imagine, although I don't know, that at the time I would have bothered to look at the CVP, that would have been prior to the clamps being released. A reading of 30 is abnormally high. I was concerned about it, but on being told that the line had never functioned properly, I was then left, reassured that I need not be

concerned that it was high because, effectively, the numbers didn't mean anything because they'd never been accurate. But I was also left in a situation that there was no CVP to guide surgeon and anaesthetist in the proceedings. I would not normally, before this, have been present in theatre for a transplant, so I would not normally have been involved in such discussions.

Q. Sorry, let me -- your counsel's quite right that we are careful here. It's an important issue. Let's just go through what you have actually said in relation to it.

In fact, maybe we'll go back to your first witness statement, 014/1, page 2. Let's go to "I had been informed ...":

"I had been informed that there had been difficulty inserting a central venous line at the start of the procedure."

Who informed you of that?

A. It must have been Dr Taylor because he had placed the line.

Q. "I made a presumption that this difficulty was due to previous multiple venous access."

That's your presumption?

A. Because that's a situation with very many children on dialysis.

Q. I'm simply, at this moment, trying to clarify who's who.

That's your presumption?

A. I think so.

Q. That's what it says.

A. That would have been a normal situation.

Q. "I assume that he may have had one of his external jugular veins tied off as this was common practice at the time of insertion."

That's your assumption?

A. That's my assumption, and maybe I wasn't qualified to make that assumption, but that's the assumption I made at that time.

Q. Well, that's a different issue. Then:

"I had not read previous notes at this time to see if this was confirmed."

Then you go on to say:

"However, I felt it likely that the CVP measurement may have been unreliable."

That's you thinking something was unlikely.

A. Well, I had been told it wasn't accurate. I think I phrased it ... Um ... perhaps clumsily, but the anaesthetist was the expert on the accuracy of the CVP and had the competency to assess it.

Q. I appreciate all of that. I'm simply trying to ensure that I've got correct what your presumptions, assumptions, and feelings are, and you say:

"However, I felt it likely that the CVP measurement may have been unreliable."

A. Yes, after my conversation with Dr Taylor.

Q. Right. Well, what you know is that, from him, that it starts at 17 --

A. Yes.

Q. -- and it's 30.

A. Yes.

Q. So is that a concern when you hear that?

A. It would be a concern if the readings meant anything, but if the --

Q. We're going to come to that in a minute. Is it a concern?

A. It's a concern if it's a true reading.

Q. Yes.

A. If it's a true reading.

Q. Why is it a concern if it's a true reading if it's at 30?

A. Because it's too high.

Q. What does that imply if it is at 30?

A. It might imply volume overload into the vascular space.

Q. And in terms of the health of the patient, what's the implication if it's at 30?

A. It's not a clinical situation that I would normally face, but if there's fluid overload, you worry that

there's excess fluid in various places like the lungs and so on.

Q. Well, is 30 a high enough figure -- if it is accurate -- for you to be truly concerned of the welfare of the child?

A. I had been told it wasn't accurate and that alleviated my concerns.

Q. That's not the question I asked. If it is accurate, is 30 a sufficiently high figure for you to be truly concerned of the welfare of the child?

A. If it was accurate, yes.

Q. Yes. Thank you.

A. If it is accurate.

Q. Now, in fact, if we just look at your witness statement 2, we can see, 14/2, page 8, and then I think it runs ...

THE CHAIRMAN: Is it to page 9?

MS ANYADIKE-DANES: Yes, it runs on to 9. On one of these, you refer to having a concern about it being 30, but anyway. 014/3, page 5.

There we are:

"I noted [this is obviously your third witness statement] that the CVP reading was 30 and expressed my concern about this to Dr Taylor."

So a figure of 30 is something for you to have

a concern over?

A. Yes --

Q. Right.

A. -- if it was accurate.

Q. I think you've made that point. So now, when you raised that with him, is he then seeking to address that concern by giving his explanation?

A. I was sufficiently reassured that the reading was not interpretable, as I obviously didn't take any further action. So I must have had my concerns reassured.

Q. Exactly. So what is it that Dr Taylor could have told you about something that you have said otherwise -- a figure is something that had raised concerns and is a concern -- what is it that he told you to allay those concerns?

A. That the line was not giving accurate results and had not done so from the point in time when it was inserted.

Q. And did you think that it was necessary for you to try and understand exactly what he meant and the basis for him forming that view?

A. An anaesthetist is trained in the measurement and assessment of CVP. As a nephrologist, I am not trained in interpreting the traces or assessing the accuracy of the CVP. My training with regards to CVP is in the post-transplant period. I know what numbers I want to

guide my fluid replacement, but I have not been trained in the work that goes on in theatre and would have deferred to the expertise of the consultant anaesthetist, who worked regularly and daily in paediatric intensive care.

Q. So can I understand how this might have happened: you're the person who's noted the 30 --

A. Yes.

Q. -- because you have a concern about it and you ask him about it. So there's a little discussion going on, is that right, in the theatre?

A. Yes.

Q. Are you aware of whether anybody else -- this is old ground -- other people understand that the CVP monitor is not recording accurately?

A. I only recall myself and Dr Taylor having the discussion. If, as I surmised, I would have been interested in CVP prior to clamp release, the surgeons would have been intently focused on the vascular anastomosis, and it wouldn't have been a time you would want to interrupt the surgeon to have a discussion. So I was sufficiently reassured by Dr Taylor that this was not an accurate reading and hence required no action by anybody.

Q. Well, sometimes, presumably a reading can be inaccurate

simply because the monitor's faulty, or something of that sort.

A. That would have been very basic to my understanding for the anaesthetist to do things like zero the CVP and check the monitors. I think there was a technician also present. So the workings of the machinery and the checking of the zeros and so on is something that would have been, if you like, bread and butter to the anaesthetist and the technician. So it wouldn't have been my place to teach them how to do their job.

Q. I'm not suggesting what is or isn't your job; I'm just trying to find out what happened.

A. Yes.

Q. Because as I have understood from you -- and as Mr Keane gave evidence yesterday -- a reading of 30, if accurate, is a very, very serious thing indeed according to him.

A. It implies volume overload.

Q. Then can you explain -- when you say you're interested in the CVP, mainly in the post-operative period, what's a CVP that you would regard as a normal range in those circumstances?

A. In the normal unventilated child, it's between about 4 and 8 millimetres of mercury. Post-operatively for a transplant patient, we are worried about clotting of the vascular anastomosis, so we like to keep them

a little bit volume replete, so the guidance I usually give is to keep the CVP above 8 mm Hg in the first 48 hours post renal transplant.

Q. And in fact if we look at the protocol that you were most familiar with, which is the Bristol protocol at 014/2, page 32, one can see, at item 2, after "use normal saline, plasma or blood as appropriate to raise CVP to plus 8 to 10."

That would be water, wouldn't it? 6 to 8 would be mercury, in brackets, isn't that right?

A. Yes --

Q. Sorry, can I just -- before the vascular clamps are removed from the donor kidney?

A. Yes.

Q. In other words, that is the sort of level -- and that's with raising it -- that you would have expected -- because that's in your protocol -- to be happening in terms of the CVP. So if you're expecting a CVP to be raised up to provide the sort of volume necessary to accommodate the release of the clamps after anastomosis to be in the range of 6 to 8 and you're noting a number of 30, is that not a very serious figure indeed?

A. If it was accurate.

Q. Sorry?

A. If it was accurate and I had been told it wasn't.

Q. I appreciate that.
A. Yes.
Q. You have said "if it were accurate". I'm dealing with it on that basis. Until you're told something and accept the explanation, that's the figure that you see.
THE CHAIRMAN: I don't think there's a difference between you on this.
A. That's why I had the conversation with Dr Taylor because I saw a number, it concerned me, so I asked for an explanation. And I received an explanation.
MS ANYADIKE-DANES: And you received an explanation. And that was going on in the presence of the surgeons?
A. Yes. Yes, but it was likely, at the time of the vascular anastomosis, which having now observed many transplants -- I hadn't at that time; I have gone to theatre for all of them -- I would not interrupt the surgeon in the carrying out of the anastomosis.
Q. I have not suggested that you would interrupt the surgeon. But were the levels that you and Dr Taylor dealing with actually articulated? Did you actually mention the level of 30? Did he actually mention the level of 17 at the start, but here's the explanation?
A. We obviously had a conversation because I recorded it in my notes afterwards, figures of 17 and 30.
Q. Thank you. Just so that we're clear, what was the

actual concern that you expressed to Dr Taylor?
A. That the number of 30 was much higher than I would expect.
Q. I wonder if I can take you to your second witness statement in here, but at page 13. You say there:
"It is not routine to measure urine output during a transplant as any preoperatively-inserted bladder catheter is usually kept clamped in order to allow the bladder to fill."
Point 5, I think.
A. Point 6?
Q. 13(a); is it not there?
A. It's the last sentence in the paragraph?
Q. Yes, "it's not routine"; do you see that there?
A. Yes.
Q. Although it's not routine to measure it, in your experience, is it routine to have a catheter?
A. It is, unless there is difficulty inserting it because of a small urethra, in which case the surgeon might have already decided he's going to put a suprapubic one in afterwards. In the case of many of our children in Belfast, they pass no urine because they've had their kidneys removed because of a particular genetic condition that occurs in Northern Ireland.
Q. I understand that. Leaving aside the situation where

the child produces no urine at all, unless there is some sort of contraindication for it or some pressing reason, did I understand to say that it's routine to have the catheter inserted?

A. Yes.

Q. And that would be a urethral catheter?

A. Urethral catheter placed by the surgeon before the incisions are made in the skin.

Q. Then you say, if we go on to (b), the last sentence:

"It can be very difficult to accurately clinically assess fluid balance in small children on dialysis."

What do you mean by that?

A. Much of the literature about paediatric transplantation admits that children that we, as nephrologists, send to theatre, thinking that they're a little bit fluid replete, which is what we would want for a transplant, when you put the CVP line in, their CVP might be 1 or 2, and, clinically, I mightn't have appreciated that. So in any textbook of paediatric transplantation, it will allude to the fact that these children might be chronically dry, but we don't appreciate it clinically in examining them. So that's what that alludes so, that even though they look okay, they look what I would describe as euvolemic, the normal volume, or a little bit volume replete. The measurements tell the story and

if the CVP is low, the child is a little bit chronically dry.

Q. Yes. You have subsequently seen the anaesthetic record, which indicates the fluids that Adam received during the course of his surgery.

A. Yes, I have.

Q. I think it's 058-003-005. There it is. If we go up towards the top quarter, you can see when the fluids were administered.

A. Yes.

Q. And just halfway down is the time, so you can get some appreciation of rate.

A. Yes.

Q. Although I think your evidence is it can be a little bit difficult just to work out whether a child is dry and, if dry, quite how dry. That can be difficult.

A. Yes.

Q. But is it so difficult that this administration of fluid that is recorded here up until, say, 9 o'clock could be appropriate?

A. There's a full 500 ml and there's some part -- I don't know how much -- of the next 500 ml. Usually if a child's dry --

Q. Sorry, if we're looking at the same line. Let's look at the one-fifth saline, that line. Carry that straight

across. It's easier to see. Thank you.

So we start there at 7, and if we just come down to the time in ease of view. There we are. So you can see between 7 and 7.30 what was administered.

A. Yes, one litre.

Q. And you can see between 7.30 and somewhere between 8.30 and 8.45 what was administered. And thereafter, from there until 11, just of that solution of itself.

A. Yes.

Q. So what I'm asking you is: can the difficulty in working out how dry, if at all, a child is be so difficult that that could be considered an appropriate fluid administration regime?

MR UBEROI: I only rise to make a big issue of the witness being asked to give her opinion on this, but I think it's a tricky question for her to answer. It obviously depends on the basis of the calculations that the anaesthetist himself has made, which you have heard evidence on, and I know that Dr Haynes will also be questioned about it. And it's on that basis that I think it's not really a proper question for this witness to help you with.

THE CHAIRMAN: Are you asking, Ms Anyadike-Danes, this witness's opinion on the fluid volume given?

MS ANYADIKE-DANES: I'm asking her because she clearly

looked at his notes and records and she has expressed certain views in her own notes as to Adam and I'm simply then trying to tease out the significance of this for her in those views. As one reads her notes, one can see that she considered that Adam was overloaded, fluid overloaded.

THE CHAIRMAN: If she's expressed -- and that is the view you expressed in your notes?

A. Um ... I think I used the word "dilutional hyponatraemia". I would prefer it if you show me the statement because I can't remember exactly what I said.

THE CHAIRMAN: Your objection is that she's made that point in her statement and is your objection why we're going back through it or the value of going back through it or what her position is to give the opinion in the first place?

MR UBEROI: I think the latter, sir. I think I would be concerned as to why this witness would need to be asked a question such as that when you have very properly set up the proper mechanism for information germane to the fluid calculation to be put before you for you to assess in your report. And on her evidence so far, this witness has very properly always stressed and pointed out the areas that are within her metier and domain as a nephrologist and those that are within the metier and

the domain of the consultant anaesthetist. So asking her to comment on the consultant anaesthetist's fluid calculation, which were made at a time when she wasn't present in theatre, is, in my submission, more likely to create confusion than assist you in compiling your report.

THE CHAIRMAN: I accept when she wasn't present in theatre, but did Professor Savage not express a view about the volume of fluid given? He's also a consultant nephrologist. So why should this witness -- perhaps slightly disadvantaged by coming along after 9 o'clock, but why should she not be in a position, like Professor Savage, to express a view on the volume of fluid?

MR UBEROI: I think the only real answer to that could be the one you have alluded to there, sir, where Professor Savage had been intimately involved in Adam Strain's care through his life and had taken responsibility and had responsibility for the preoperative preparation. That is not a situation that this witness was in or has ever proclaimed to be in, so I think the problem comes into rather sharper focus when she is asked that same question.

THE CHAIRMAN: I don't accept that the witness can't be asked. I accept her position may be somewhat less

secure in answering it than Professor Savage because he had been managing Adam over the previous three or four years and I think his views would have more weight than Dr O'Connor's, but I don't think it's inappropriate to ask her the question at all.

MR UBEROI: So be it.

MS ANYADIKE-DANES: Dr O'Connor --

A. Fluid management in a transplant situation is usually guided by CVP. I have also said that this is only the second time I was ever present in theatre during a transplant and I did not have personal experience of giving fluids. I was never responsible for giving fluids during a transplant. In other situations of a child who is dry and on my ward, I tend to give replacement fluids as boluses in quantities of 10 or 20 ml per kilo at a time and then see the effect in terms of blood pressure and things. On the ward situation, I wouldn't have a CVP, so I'm not sure if that answers the question. But the giving of fluids in theatre would not be my domain.

Q. Yes. That's fair. What I'm really seeking to have you comment on is that you were going to be -- I think your evidence was, in your witness statement, that for the next 6 hours, part of what you were going to be dealing with quite closely was Adam's fluid management.

A. Yes.
Q. That would be your responsibility?
A. Post-operatively, yes.
Q. Yes, yes, yes, for the next six hours after he came out of his operation.
A. The next 48, yes.
Q. Sorry, I thought in fact your witness statement said six. But in any event, for some period of time, whatever it is, it is going to be your responsibility, to manage his fluid regime --
A. Yes.
Q. -- appropriately?
A. Yes.
Q. Since that is clearly an expertise that you have to manage a young child's fluid regime --
A. In a post-operative situation.
Q. -- in a post-operative situation, what I was trying to invite you to comment on is your response to seeing that volume of fluid, type of fluid, administered at that speed or rate. That's all I was asking you to comment on.
A. Um, I first looked at the anaesthetic chart round about 12.05.
Q. Yes.
A. The volume of fluid is probably more than I would expect

during a transplant, but the crucial thing is to be guided by the CVP and that was a deficiency here. It was very hard, I think, to make fluid decisions without an accurate CVP. I --

Q. Yes. But absent that -- well, I will try one more time with one more question and then I will move on. Is there anything about the volume and rate that would cause you concern? Just knowing that in and of itself.

A. To give large volumes of fluid quickly, one normally uses normal saline. One would never give boluses of 0.18 per cent saline ever in my practice or training.

Q. Thank you. I think that is helpful.

MR FORTUNE: Sir, can I rise at this stage to deal with how Professor Savage handled the issue of the excessive fluid? It's 18 April in the transcript at page 151. It starts at line 1. It starts in this way:

"Dr O'Connor phoned me in the university office."

And if my learned friend, and indeed everybody else, follows me down to line 20, you will see at line 12, and this is when Dr O'Connor and Professor Savage were together. They do a rough calculation. They think that he had had 1,500 ml of fluid more in than out:

"I think Dr O'Connor and I felt there was a situation where his fluid balance was excessive on the positive side. He'd had a lot of fifth normal saline

and we felt he had probably got cerebral oedema and coned and it is a moment that both the phone call and seeing Adam lives with me forever. It's like a cold hand on my heart. I knew we were in a very difficult situation."

THE CHAIRMAN: Remind me, Mr Fortune, that phone call to Professor Savage's office, that would have been after he had left, some time soon after 9 o'clock --

MR FORTUNE: No, sir, it was around midday because Dr O'Connor goes in, surgery's finished --

THE CHAIRMAN: Sorry, some time after 9 o'clock when he's effectively handed over to Dr O'Connor and this is what brings him back from the university into the hospital, insofar as they are two different locations.

MR FORTUNE: Yes. If you recall, the two of them looked at the anaesthetic records, did the calculation and that was how Professor Savage put it to you in answer to questions from my learned friend.

THE CHAIRMAN: Thank you.

MS ANYADIKE-DANES: I'm very grateful. Thank you very much indeed. That was exactly the area that I was trying to explore with you.

A. Okay. I'm not trying to be difficult; I'm trying to answer the questions as best I can.

Q. Yes. What it was is that you would have appreciated

that that was -- I don't want to use the word "excessive", it's somebody else who determined that -- but that was a lot of fluid that had gone into Adam.

A. It was a lot of dilute fluid, yes.

Q. Thank you. If we can go to your witness statement 014/2 --

THE CHAIRMAN: Can you just pause there? The description which has been -- the evidence which has been read out by Mr Fortune a few moments ago of what Professor Savage says: do you agree with Professor Savage's recollection, which is that you phoned him at about midday and the two of you did a rough calculation by phone?

MR FORTUNE: Not by phone, sir, face-to-face.

A. My first concern about Adam would have been when I was informed that his pupils were fixed and dilated. My recollection is that that was just before he was moved into intensive care, so it would have been somewhere around 12 o'clock.

THE CHAIRMAN: Sorry, I think it is by phone, Mr Fortune, according to the transcript that you read out because Professor Savage says:

"It is a moment that both the phone call and seeing Adam lives with me forever."

MR FORTUNE: It's around 12 o'clock, sir, and in fairness to Dr O'Connor, I didn't read out the full part at the

beginning:

"Dr O'Connor phoned me in my university office and said that Adam couldn't be weaned off the ventilator, he wasn't breathing spontaneously. She had looked at him, he had fixed dilated pupils and I don't know if she told me at that point that she had looked at the fluid balance, but I rapidly went to the intensive care unit, reviewed the situation with her, and it was clear that he did seem to have had, I think, with a rapid calculation, we thought he had had 1,500 ml of fluid more in than out."

THE CHAIRMAN: Curiously, and unfortunately, the only person who doesn't have the transcript, who can't access the transcript, is the witness. The transcript does not come up in the witness box. What I think we might do, as it is 1.20, is break for lunch and give Dr O'Connor access to this part of the transcript of Professor Savage's evidence over lunch so if there's any further questioning on it, we can come back. Can we say 2.10 because we are, yet again, running behind schedule?

MR FORTUNE: Just on the subject of who's going to give Dr O'Connor the transcript. Mine is highlighted.

MS ANYADIKE-DANES: We will print one off.

MR FORTUNE: Thank you very much.

THE CHAIRMAN: Okay, 2.10. Thank you.

(1.25 pm)

(The Short Adjournment)

(2.10 pm)

(Delay in proceedings)

(2.20 pm)

Timetabling discussion

MR MILLAR: Mr Chairman, could I just raise one issue about timetabling just before my learned friend starts again?

THE CHAIRMAN: Yes.

MR MILLAR: The mood of the meeting seems to be that it's unlikely that Dr O'Connor's evidence will finish before 4 o'clock, and it may be a little bit longer. On that basis, I would much prefer to start Mr Keane again tomorrow morning on the basis that there is then a realistic prospect that he will start and complete his evidence in one day. I don't think it'd be satisfactory to him to have to go into the witness box at 4.30, 4.20, something of that sort, then have another overnight and come back in the morning. If that's the reality, I would much prefer, sir, if we could address the issue now and take a decision about it.

THE CHAIRMAN: Okay. You'll appreciate that I'm acutely aware that we're already two-and-a-half days behind on the schedule.

MR MILLAR: Absolutely.

THE CHAIRMAN: Ms Anyadike-Danes, we won't have an afternoon break until some time between 3.30 and 3.45. Will you have finished your questioning of Dr O'Connor before then?

MS ANYADIKE-DANES: I will try hard to do that, Mr Chairman. There are some further questions which I have received, which I haven't yet seen how to interleave in a sort of smooth way, but I will try very hard to do that. I am very much aware on the timetable and the effect that that has on the witnesses and on other professional people trying to manage their diaries and so on. I am very much aware of that.

THE CHAIRMAN: There's an issue, I think, that Dr Brown, who's been waiting repeatedly to give evidence has been put back day after day after day. But I think while he can give evidence tomorrow, he can't give evidence on Friday; is that right?

MS WOODS: Correct, he can't give evidence on either Friday Or Monday.

THE CHAIRMAN: So we have to finish Mr Keane and Mr Brown tomorrow. If needs be, can we start at 9.30?

MR MILLAR: I'm quite happy with that, sir, yes.

THE CHAIRMAN: I'm not saying we'll do that every day, but let's do that tomorrow.

MR MILLAR: I appreciate Mr Brown's situation, but

I certainly wouldn't want there to be any consideration to be given to Mr Keane waiting until Tuesday, say, to finish his evidence.

THE CHAIRMAN: No, I should say that there are -- I think Mr Koffman's due on Tuesday and that Messrs Forsythe, Rigg and Haynes are all due next week.

MR MILLAR: It would be very helpful for us to know about that, sir -- we were not quite sure whether the events of this week have resulted in those witnesses being put back somewhat or whether it's still intended to have them here next week.

THE CHAIRMAN: Some of them can't be put back. In the history of this inquiry, some of the inquiry expert witnesses have cancelled plans twice already and then made arrangements to be here next week and some of them are immovable. And I think Messrs Forsythe, Rigg and Haynes are the ones who have to give evidence next week.

We will work on a revised timetable and try to have it with you on Friday, but we'll assume, for the moment, that we'll work on with Dr O'Connor today. When she finishes, you're saying you're reluctant for Mr Keane to start to give evidence late in the day; you'd rather he had a fresh start in the morning.

We'll sit early tomorrow morning to do that, get through Mr Keane and Mr Brown. I'll have to say that if

that's the event, we'll have to sit as late as needs be tomorrow to finish both witnesses. I won't ask Mr Keane to come back yet again and I can't put Mr Brown back until Tuesday. That won't work next week.

MR MILLAR: That's Mr Koffman's day, is it, sir, as you understand it?

THE CHAIRMAN: Yes. Mr Koffman, I think, is due on Tuesday. We'll have a number of ... Dr Montague, I think, we want to give evidence before that. I think he's scheduled for Monday and the nursing witnesses who, on paper, are shorter, but may not turn out to be all that much shorter, we would prefer them to give their evidence before the inquiry's experts start to give their evidence in turn. This isn't all going to work out perfectly and we might not be able to get through all that ...

Sorry, the other issue which plays into that is that I think there was a concern expressed last week that after expert witnesses finish, the families might want a little time to consider the last piece of their evidence in order to decide whether they have any additional questions which they want to ask. I think there was a bit of disappointment last Friday that that time wasn't available at the end of Dr Taylor's evidence, so I'm trying to create it.

The basic premise is -- and I know this is happening -- that the various counsel will liaise with inquiry counsel so the questions which they want to be asked are indeed asked. That still leaves a possibility that there's some further issues which any party wants to raise and then I decide, as I did last week, whether or not some of those questions may be legitimately asked. But I want to leave a little time for that to be mulled over before a witness leaves the inquiry. So I understand the plan for this afternoon and you understand that we will then sit early tomorrow morning to resume Mr Keane.

MR MILLAR: Thank you, sir.

MS WOODS: Sir, just on that, I'm very grateful for the indication that it's your intention that Mr Brown should be finished tomorrow. It is just that we put our marker down that we'd be very concerned if Mr Brown was pushed back any further.

THE CHAIRMAN: I understand.

DR MARY O'CONNOR (continued)

Questions from Ms ANYADIKE DANES (continued)

MS ANYADIKE-DANES: Mr Fortune very kindly identified a part of the transcript of 18 April, of Professor Savage's evidence. It's slightly out of order to where I was going to go, but you've had it and you've been looking

at it and it might be more efficient to deal with that now if that's all right.

I take it that you have had an opportunity to look at it?

A. Yes.

Q. So that's Professor Savage's evidence as to what happened.

A. Mm-hm.

Q. Firstly, do you agree with it?

A. I agree with most of it.

Q. Which is the bit you disagree with?

A. Line 11 on page 151.

Q. Can you say what's in that line?

A. "So at that stage with a low sodium and, subsequently, with a lower sodium coming back from the laboratory."

My clear recollection is only knowing of one sodium result, which was the one of 119, which came back from the laboratory. The first occasion on which I was aware of the blood gas result was in 2005 when I reviewed the notes to make a statement for the inquiry and it was attached to the anaesthetic sheet.

In those days, there was little reliance placed on sodium values from blood gas machines. But I had never been aware of that result until 2005.

Q. Well, could that have been something that slipped your

memory?

A. I don't think so because even in 2005, I was shocked to see it. So --

Q. The 123?

A. Yes. I also think, if I had been aware of it, I would have recorded it in my notes because to follow my thought process in the notes, I seem to be looking for a reason for cerebral oedema and I haven't initially -- I haven't recorded that value anywhere there. I think I would have, had I known it.

Q. Yes. Is there anything else that you disagree with?

A. No, except I probably had made this assessment before I made the phone call and then we made an assessment together again because I was the person on the spot, so I was examining Adam and so on, probably before I phoned my colleague.

Q. What had you looked at to help you make that assessment?

A. I had been -- my recollection -- and it's not entirely clear, but I think I was called back to theatre when the fixed dilated pupils were apparent. So I was looking at Adam's pupils, looking at the back of his eyes, which shows signs of haemorrhages. Those are the things that would have caused me the most concern.

Q. This might help you actually: 014/2, page 38. This is your note, isn't it?

A. It is.
Q. Yes. Can you see at the top, "fluid in theatre"?
A. Yes.
Q. And then you've got a calculation -- well, not a calculation, a description of what they are.
A. Yes.
Q. And then you have the description of the kidney and then you have an examination of the pupils as you've just been describing. Is this something that you think you did before you -- if not actually writing it down, but carried this out before you telephoned Dr Savage as he then was?
A. I would have carried out an examination as immediately as I could and that would have been more important than making the phone call.
Q. Yes. I appreciate that. What I'm trying to find out is what you would have done before you made the phone call in order to have reached the view that you said you had already reached when you telephoned and had your conversation with Dr Savage. So have you already looked at his pupils?
A. Yes.
Q. And if you see higher up in that note "fluids in theatre". Have you already considered what those fluids were?

A. I have considered what they were, but I don't recall thinking in terms of sodium at that stage, ie --
Q. That wasn't what I asked you. Had you already looked at something that would allow you to record those fluids, even if you didn't actually physically record them before you made the phone call?
A. I think I had, as far as I recall.
Q. Those fluids come from the anaesthetic record, don't they?
A. Yes.
Q. So when I was asking you, and we pulled up the anaesthetic record -- 058-003-005 -- there we are. When I was asking you and you looked across at that line and was looking at the fluids, you had actually done that, as I understand you to be saying now, looked at that, thought about what that fluid regime meant, along with the other information that you had, which was looking at his pupils and so forth, formed a view and phoned Dr Savage; isn't that right?
A. I had looked at that in the region of 12 o'clock. I had certainly formed a view that he had cerebral oedema because there are not many reasons for fixed dilated pupils. I don't think I had a clear thought process about sodium until I got the lab result some time about 1.20.

Q. Had you got a clear thought process about fluid balance?
A. There was a lot more in than out, but I'm ... I can't recall if I appreciated the significance of that until I saw the sodium result.
Q. Let's go back. 014/2, page 38. There we are. That's your note. You've got "input, 3,000". And then you have identified what you think makes that up. "Losses, 911." Do you have any other losses identified there?
A. I haven't written about insensible loss, which would have occurred.
Q. But insensible losses aren't going to make the difference between the two figures you have there.
A. And I don't have any measurement of urine passed during those hours.
Q. No. What I'm trying to -- what it would seem as if you have recorded there is a positive fluid balance.
A. Yes.
Q. And a significantly positive fluid balance is what that record shows?
A. Yes.
Q. Right. So when you have your telephone conversation with Dr Savage, I think you're saying that you had already formed a view as to that because when you say you're discussing with Dr Savage, you said, "But I think

I had already reached a view before I spoke to him";
is that right?
A. I'd certainly reached a view that Adam was probably
irretrievably ...
Q. Sorry, let's go back to what Dr Savage says, which
I think, with the exception of maybe two points,
you have broadly accepted:
"Rapidly went to the intensive care unit ...
reviewed the situation with her ... it was clear that he
did seem to have had, I think, with a rapid calculation,
[so no big science about it by the sound of it] ... we
thought he had 1,500 ml more in than out on a rough
calculation."
A. Mm-hm.
Q. Well, Dr Savage doesn't seem to have spent very much
time working out that there was a significant positive
balance, fluid balance.
A. Yes, I'm not --
Q. Are you saying it would have taken you an awful lot
longer to work that out without his assistance?
A. No, I'm saying that without the sodium result,
I mightn't have appreciated the full significance of
that because there is always a positive fluid balance at
the end of a transplant.
Q. At that level?

A. Not usually at that level, no.
Q. No. So is it when Dr Savage comes to the intensive care to meet you that you then go and consider the sodium results?
A. The sodium results, if I could look at my note, I think on the next page, but there's a page where I record the lab result. It might not be a very good habit, but I tend to write lab results in the notes at the time of which the notes relate to or the time I've received them. So I've recorded them in the margin of a page around about 1.20. So my interpretation of that is I received the result in or around that time. The CT scan result is written on the same page.
Q. Okay. So that's when you knew about his sodium level?
A. Yes.
Q. When you saw the fluids, did it -- well, although you may not have known what his sodium level was, you did see from the anaesthetist's record or anaesthetic record what the fluids were.
A. Yes, I did.
Q. So you knew that a significant amount of that fluid was low in sodium.
A. Yes, I did.
Q. Did it not cause you to want to know: what is his sodium result?

A. I wanted to know his sodium result as quickly as possible once I discovered the fixed dilated pupils, but there was a delay in the processing of a lab sample and getting the result back.

Q. But even without actually knowing what it was, did it not occur to you there was a real risk that he would have a low sodium result because of the quantity of low-sodium fluid that had been infused?

A. I don't remember accurately my thought processes at that time. But there was a lot of low sodium --

Q. Even without knowing accurately what your thought process was, would it be fair to say that, to a consultant paediatric nephrologist looking at that quantity and that rate of low-sodium fluid in a child of that age and size, that you would have formed the view that there must have been a risk of his serum sodium levels being low?

A. I think that's likely, but I don't recall my thought processes.

Q. Thank you. Let's go back to some issues in relation to CVP that I've been asked to clarify with you. Can we go to your witness statement 014/2, page 10? Perhaps go back to 9 to see the question.

Right down at the bottom, (e):

"Explain why you felt it likely that the CVP

measurement may have been unreliable."

And just to help you, where that comes from is an answer you gave in your first witness statement, and you can see it up at the top, under 9, because it's cited and then the questions come.

A. Yes.

Q. So:

"I had been informed there had been a difficulty in inserting a central venous line at the start of the procedure and I made a presumption that this difficulty was due to previous multiple venous access. I assumed that he may have had one of his external jugular veins tied off as this was common practice. I had not read previous notes at this time to see if that was confirmed."

And this is the point:

"However, I felt it likely that the CVP measurement may have been unreliable."

So you're being asked to explain why that was the case. And if one goes over the page now, we'll see the answer. You say:

"The CVP would be expected to be between 4 and 8 in a normally hydrated child. As Adam did not appear to Dr Taylor to be clinically fluid overloaded and had not received his full prescribed quota of fluid

preoperatively, he had [that's Dr Taylor] presumed the initial reading to be incorrect."

Okay?

A. Yes.

Q. This is all prompted by you seeing that figure of 30 --

A. Yes.

Q. -- which, in the -- not the literal trace, but the compressed trace from the monitor -- occurs roughly at about 10 o'clock.

A. Yes.

Q. So my question to you is: why did you assume that Dr Taylor was accurate in his assumption?

A. Because he was trained in the interpretation and management of CVP lines and in their insertion. He was an experienced intensive care anaesthetist who dealt day in day out with CVP and it was not within my competence or training to assess the accuracy of CVP.

Q. Okay. I think you had then gone on to say that the reading is affected by the position of catheter tip, I think you say:

"As the initial reading was presumed to be incorrect, subsequent readings were also presumed to be incorrect."

Go back to page 9 to make sure I'm reading that out correctly. There we go:

"As the initial reading was presumed to be incorrect, subsequent readings were also presumed to be incorrect."

Who was presuming that the subsequent readings were incorrect?

A. Dr Taylor had reassured me that I need not be concerned about a value of 30 because it was not interpretable because the reading was not correct.

Q. Yes. But did you know that Dr Taylor was continuing to, rightly or wrongly, use the CVP readings, just not the absolute reading, as an accurate reading. What he was doing is he was using it as a marker for relative change.

A. I did not appreciate that from my conversation with him. My interpretation of my conversation with him was that the values were to be disregarded because they were not interpretable.

Q. So he didn't say anything that you can recall to you about relative change?

A. I don't recall that.

Q. Okay. Just so that we're clear, you saw the 30?

A. I did.

Q. That means you saw it on the monitor; is that right?

A. Yes.

Q. Did you see its trace?

A. I wouldn't have looked at a trace because I'm not --
Q. What would you have been looking at?
A. A number, I think.
Q. Is it possible to look at the number without also seeing the trace?
A. As a nephrologist who's not trained in looking at the traces, I only look at the numbers. The trace is on this part of the screen and then there's numbers on this side of the screen (indicating).
Q. You never notice if there's a waveform?
A. I never look at the waveform because I'm not --
Q. Sorry, slightly different question. You never notice if there's a waveform?
A. Correct. I never look at the waveform because I am not trained or competent in the interpretation of the waveform.
THE CHAIRMAN: I know this is a bit of guesswork involved, but you've described how you would not have been right up close in the immediate area. You have described standing back and looking in.
A. I can only surmise at this distance, but I think I would have been interested prior to the clamp release to know what the CVP was. I probably positioned myself at that point to look at the monitor.
THE CHAIRMAN: I'm just curious. If you look from any

distance, I presume the number stands out more clearly than the waveform, does it?

A. Yes, but I don't know where the monitor was positioned relative --

THE CHAIRMAN: But whatever its position, you could see the number?

A. Yes. I didn't need glasses in those days.

THE CHAIRMAN: Do you know whether you would have been able to make out the waveform or would it just be guessing?

A. I think I'd be guessing, but I wouldn't have been able to interpret it anyway.

THE CHAIRMAN: Okay, thank you.

MS ANYADIKE-DANES: In a second, we're going to see if we can pull one up for you to see. In any event, you had noticed the figure of 30 and you'd spoken to Dr Taylor about it, and he told you that it had started at 17.

A. Yes. And that's where I got that number to record in my notes.

Q. I understand that. So that means there is quite a significant change? Well, it's gone from 17 to 30.

A. The logic that I would address was: if it wasn't reliable at 17, it was no more reliable at 30. I couldn't, in my mind, relate the two because they were both inaccurate.

Q. But did that not concern you? There was a child, some significant part of the way through his kidney transplant, and the anaesthetist and you have spent some time saying how important the CVP figure is --
A. It is, it's crucial.
Q. -- has no idea of what his CVP value is.
A. It concerned me that there was no CVP value --
Q. Yes. So what did you do about that concern?
A. The anastomosis had commenced at that point in time and, around about 10 o'clock, would have been close to the clamps coming off, I think.
Q. Sorry, I think you recall anastomosis at 10.30 or thereabouts.
A. Yes. The clamps coming off -- the anastomosis takes about an hour.
Q. Yes?
A. So it starts and I think it took two hours in this case because the anastomosis, I think started, at 8.30 and the clamps came off at 10.30.
Q. Is that recorded, that the anastomosis starts at 8.30?
A. I didn't know that until I went back to the notes for the purpose of making statements. I never knew the start time, but it was in information, I think, sent back to UK Transplant as something the transplant coordinator usually fills in on forms and sends back.

So I knew that from about 2005. I didn't know it back in --

Q. Back to the question that I had asked you. Did it not concern you that there were at this stage with Adam's renal transplant surgery and the anaesthetist had no idea what his CVP value was?

A. It concerned me, but I wasn't clear that I could interrupt a vascular anastomosis to ask him to place a catheter in the groin, which I think would have been the only alternative.

Q. Did you try and discuss what you might do to find out what Adam's true CVP value might be?

A. The only way to get a true CVP --

Q. Sorry. I asked quite a specific question. Did you discuss with Dr Taylor what you could do to try and gain an accurate CVP value for Adam?

A. I think my discussion was only about the fact that this value was inaccurate. My understanding would be the only way to remedy it would be a new line. I understand the principles sufficiently to know that if a line's not working, I can't make it work. I would need a new line.

Q. That wasn't quite the question. But that's your answer: that's the only way in which you could have identified what his actual or true CVP level was?

A. Yes, to insert another line in another place.

Q. And did you have any feeling at that stage for how much longer the surgery could continue?
A. The crucial time that one needs the CVP value is pre-clamp release, and that occurred at 10.30. And we were here some time after 10.
Q. Yes.
A. But I don't know exactly the time.
Q. So the clamps were going to be released and, all things remaining the same, there would be no idea of what Adam's true CVP value was?
A. Yes, it's not a situation I've ever been in since with a transplant.
Q. Was anybody discussing it as to what they were going to do?
A. The only option I was aware of was with a new line and to interrupt the vascular anastomosis. I think that's a question best asked to a surgeon, but I didn't --
Q. But you're in there as Adam's, at that time, consultant paediatric nephrologist.
A. Yes.
Q. And you have already given evidence as to how important the CVP value is. You're standing in that operating theatre, realising that nobody there has any notion of what Adam's CVP value actually is.
A. Yes.

Q. And what I'm asking you is to try and get some sense of what was people's attitude to that being the situation. That seems to me to be a fairly significant point to have arrived at.
A. Yes.
Q. So what was the attitude in there about what we're going to do about this? For all you know, he could have had a very high CVP value.
A. The only way that I understood it could be remedied would be a new line and, at that crucial point in the operation, during the vascular anastomosis --
Q. Did you discuss with Dr Taylor, "What on earth are we going to do? Quite shortly, those clamps are going to be released, we don't know what his true CVP value is. In either protocol, it tells you roughly where you want to be with his CVP value before those clamps are released. We have no idea where we are in relation to that"?
A. My memory is that to start to try to expose the groin to put a new line in might have taken, you know, an hour, and we were already at a very crucial part of --
THE CHAIRMAN: Sorry, doctor, I don't think that's quite the question. That might have taken up to an hour, but as I understand it, that was never discussed -- or was it discussed between you and Dr Taylor?

A. I think I probably didn't see it as feasible to start to do that in the middle of the vascular anastomosis.

THE CHAIRMAN: We're trying to get at what was discussed. Let me tell you: the impression I have is that, on the evidence so far, Mr Keane wasn't aware of this issue. He has said yesterday that he wasn't aware of this issue. He wasn't aware of the CVP reading. On the contrary, he was being assured at fairly regular intervals that everything was okay. You came in and, during one of the occasions on which you were coming in and out, you saw the CVP reading and it was a matter of concern to you.

A. Yes.

THE CHAIRMAN: As I understand your evidence, it did not seem to be a matter of concern to Dr Taylor.

Am I understanding you correctly?

A. I suppose I was surprised the transplant had proceeded without an accurate CVP because I wouldn't, if I had been there earlier, I wouldn't have wanted that to happen, wouldn't have allowed that to happen.

THE CHAIRMAN: At the stage you came in, they were well into the operation.

A. Yes.

THE CHAIRMAN: Dr Taylor -- correct me if I'm wrong -- as I understand it, was not concerned about this because he

hasn't said in any of his evidence to the inquiry that he was very concerned about developments. In fact it wasn't until the very end that he realised something terrible had happened.

A. I find it hard, some 17 years later, to gauge his concern, but it's a crucial part of transplantation to have an accurate CVP from the start.

THE CHAIRMAN: Yes. If he had been showing signs of concern, which I presume, in hindsight, you think he should have been doing?

A. I didn't observe concern that I recall.

THE CHAIRMAN: Was it his lack of concern which fed into your reassurance that things were progressing okay?

A. His lack of concern at the value of 30 reassured me that this was not accurate after the discussion we had, and at that point in time, I didn't think it was feasible to interrupt proceedings to ask for another line at that time. I didn't think that was feasible. But that may be best discussed with a surgeon who was in control of -- he would have had to stop the surgery with a kidney that was warm.

THE CHAIRMAN: I understand what you're saying: you didn't think it was feasible. But when you say, "I didn't think it was feasible" -- correct me if I'm wrong -- but that's based on your own understanding and not based on

a discussion with Dr Taylor?
A. I don't recall a discussion about a new line, no.
MS ANYADIKE-DANES: Given the significance of it and I know that you said that the surgeon was focused and concentrating on what he was doing, but were you aware of how important to a surgeon the CVP value is?
A. The usual importance in a transplant is to make sure it's high enough; your worry is that it's too low. That is always the concern during a transplant.
Q. And you don't know what it is?
A. I don't know what it is, yes.
Q. Leaving aside high or low, is it a significant value or measure for the surgeon?
A. Yes.
Q. And the situation that you were in is: the consultant paediatric anaesthetist had no idea what Adam's CVP, true CVP, value was; you, his consultant paediatric nephrologist, had no idea --
A. Mm-hm.
Q. -- and the surgeon could have no idea either on the way you understood things at that time.
A. Well, I understood there was no interpretable --
Q. No. So the surgeon could have no idea either.
A. That's my understanding.
Q. So is that something that you felt should actually be

voiced?
A. I voiced it with Dr Taylor, but I didn't consider it feasible to put another line in at that point in time.
Q. You do keep repeating that. I haven't asked you about whether you thought it was feasible to put another line in. There are three professionals in there all with different disciplines.
A. Yes.
Q. What I'm asking you is: did you voice the fact -- we're all in here trying to get through this paediatric renal transplant operation, and a very, very significant marker, we simply don't know what it is. Did you voice that and, perhaps, allow other people to think about what they might do or what they thought could be done in those circumstances?
A. I discussed it with Dr Taylor. I don't recall discussing it with Mr Keane.
Q. So is it not too unfair to say that you'd formed a view that there wasn't anything that we could do about it, the surgeon's concentrating on there's no point in mentioning it?
A. Possibly.
Q. Yes.
THE CHAIRMAN: And Dr Taylor isn't that concerned about it?
MS ANYADIKE-DANES: Well, I don't think we know whether

he was or he wasn't. I think the evidence was she doesn't recall his concern.

THE CHAIRMAN: Dr Taylor said he wasn't concerned.

MS ANYADIKE-DANES: And Dr Taylor's not concerned about it. So that's the situation that Adam had.

A. Yes.

Q. And that is roughly 10 o'clock when that's first noticed?

A. I think so.

Q. Roughly?

A. Yes.

Q. I'm going from the fact that it's the 30 that prompts you.

A. Yes.

Q. And we roughly know when the 30 value is -- that's roughly about 10 o'clock. Do you know when you're next in the operating theatre?

A. I don't know. I know that I was there several times.

Q. No, sorry. It is my fault for the way I asked the question. After that point in time, do you know when you are next in the operating theatre?

A. No.

Q. Do you know if you're in there again before -- I think you thought you were actually called there.

A. I think I was. Obviously, I wasn't there long enough to

have a habit at that time, but my current habit is to keep parents informed of what's going on, and I am afraid I don't recall my conversations with Adam's mum, but I'm aware that she has said that I told her the surgery finished about 10.50. It could be that I had gone to tell her that the surgery was at an end and then I got called back. I certainly did not leave Adam once I knew he had fixed dilated pupils because my duty of care was to Adam and, as important as it might have been to speak to mum, my priority would have been Adam as the patient at that point.

Q. Yes, all the way through your duty of care was to Adam.

A. Of course.

Q. Even when you saw it was 30 and were receiving an explanation from Dr Taylor, your duty of care was to Adam.

A. Yes.

Q. But what I'm trying to understand is: after that episode, if I can call it that, do you know -- and if the answer is "no", say "I don't know" -- whether you were back in again before you were called and his pupils were noted to be fixed and dilated?

A. I don't recall precisely.

Q. So when you go back, at least when you are there at the point when his pupils are fixed and dilated, whether

it's because you happen to be there or whether you were called to that situation, do you ask what happened about his CVP?

A. I don't know that there was any more information ... Um ... Available about his CVP at that point. We had a very ill child and I was trying to think why would some sort of brain catastrophe have occurred.

Q. Did it occur to you that it might have something to do with the fact that he might actually have had a high CVP value?

A. I'm sure it did, but I don't remember my exact thought processes. He had fixed dilated pupils and haemorrhages in his eyes, and that led me to the conclusion he had cerebral oedema.

Q. Exactly. That's why I'm asking you. Although you had received an explanation for why his CVP wasn't as high as it appeared to be showing, when you actually went back or were there and saw him in that condition --

A. Yes.

Q. -- did it occur to you to consider that: well, maybe if it wasn't an accurate figure, it was at least very, very high?

A. I think that's why I've recorded in my notes that there had been a value of 17 reported to me and a value of 30 during, you know, the earlier part of the operation.

I felt it had some significance, yes.

Q. Yes.

THE CHAIRMAN: It's bound to occur to you, doctor, isn't it, because you're in earlier, you're reassured in whatever way by Dr Taylor that you can disregard the CVP? An hour later, some time later, you know there's a brain catastrophe. So inevitably you are bound to think back to how the high CVP might not have been all that wrong after all.

A. I'm not an expert in CVP, but you could also, I imagine, have a high CVP without a low sodium and it wouldn't have had the same effect. It just would have caused fluid overload, perhaps in his lungs. But yes, I was concerned about the high CVP at that point.

MS ANYADIKE-DANES: Just to round that off before we move on.

What you actually knew at that time is that you had the anaesthetic record, which told you about the quantities of low sodium.

A. Yes.

Q. You had a child before you that was showing all the hallmarks of, so far as you have concluded, cerebral oedema or some sort of cerebral assault, if I can put it that way.

A. Yes.

Q. And you had a query whether, at some point earlier, he'd had very high CVP values.
A. Yes.
Q. So putting all that together --
A. The picture seemed to be of fluid overload.
Q. Thank you. Did you want to know, when you were trying to -- maybe some time later, trying to work out what had happened, what his starting sodium results were or sodium levels were?
A. The only -- I think I have written somewhere in the margin or somewhere, but the only one I was aware of was 139 and the fall, the next one I was aware of was 119. So that was a very dramatic drop from 9 pm the night before to roughly midday the next day.
Q. Yes. Can we just clarify something because it's in his notes? You have given a witness statement about it, but it may be helpful for you to clarify it. You compiled what's called the transplant form.
A. Yes.
Q. And in the -- I think we will pull it up shortly. When you compiled that, you included in there his serum sodium level of 134 --
A. Yes.
Q. -- not 139.
A. Yes.

Q. Just so that we have it on record, your explanation for that wasn't a different figure, was it?
A. Having examined the records again, I think I transcribed a 9 wrongly as a 4, and the doctor who wrote the 9 -- I looked in a different part of the notes where they'd written a temperature. There was another thing they'd written with a 9 and a 4 and I looked at the forming of the numbers and I am convinced that I mistranscribed a 9 as a 4.
Q. Yes. Is it the case that when you were looking back to try and reconstruct those things, that you didn't actually have a laboratory result for that figure?
A. No. In those days, laboratory results often took maybe 24 hours before we saw them. Certainly my memory usually was about 5.30 in the afternoon when they came back.
Q. Thank you. Can we just move on to touch on some points arising out of your description of the kidney?
A. Yes.
Q. You were in the operating theatre a few times.
A. Yes.
Q. How many times had you actually had a peer over to see what was happening?
A. I don't recall accurately, but I suspect I was really interested to see the perfusion of the kidney, which is

the important part of the transplant.

Q. I understand that. But if you're in the theatre and the operation's going on, one might say there's a bit of a temptation to have a look and see where they've got to and what's going on without having to disturb anyone to ask. Did you just have a look?

A. I don't recall, but the interesting part and the exciting part is the clamp release.

Q. You've said that. So you have described the kidney in a number of your statements as looking "bluish at the end of the theatre", and I think, in fairness to you, you're not sure whether that is something that you saw yourself or somebody else saw, told you and you've recorded it.

A. That's correct.

Q. But you don't have any doubt that you had a description that the kidney was bluish?

A. Yes.

Q. In your witness statement, 014/2, page 17, you make reference to the operation note that Mr Keane made. Under 19(a):

"I do not recall whether I was told that the kidney was bluish or whether I observed this."

Are you either way about that, ie you could just as easily had observed it or been told it?

A. I really don't recollect for sure.
Q. Then you say:
"I note that the operation note by Mr Keane on page [and the reference is there] states that the kidney was 'perfused reasonably' at the end of the procedure. In a successful kidney transplant, the surgeon usually describes the kidney as being well perfused."
A. Mm-hm.
Q. What is the point that you're drawing out there?
A. I suppose that the word "reasonably" made me wonder what exactly Mr Keane meant by that. Did he mean it was less good than well, if you know what I mean?
Q. Mm-hm.
A. But um ... At the point in time, I think, when I was reading that note, he probably wasn't there to discuss it with. I wasn't sure exactly why he had chosen that word. It seemed to me perhaps to fit with the fact that I'd been told it was bluish, but --
Q. Yes.
A. It's maybe not fair for me to comment. That's really a question probably --
Q. I'm only asking you to comment because you've got it in your statement, that's all. Are you able to link the condition of the kidney in the sense of its description as "bluish" to roughly when that was happening? Is that

something that's right at the end or when? You may not be able to.

A. I think it was towards the end. I don't recall having any concern at the time of the clamp release.

Q. Staff Nurse Popplestone, who was a scrub nurse in the theatre that day, she's given a statement to the PSNI and we can see that, at 093-012-040, she says:

"I also recall the surgeons discussing possible discolouration of the kidney at the time of transplant. This concern appeared to subside as the operation progressed."

Is that something you recognised?

A. I think the concern was towards the end, as far as I was concerned, but I don't have a clear recollection.

Q. Yes. Dr Taylor has also expressed a view. His recollection is to be found in his deposition to the coroner at 011-014-101. He says:

"The donor kidney, at around 10 am, was not looking good and not producing urine."

Is that something you recognise?

A. A kidney frequently doesn't produce urine.

Q. Sorry, I'm not -- I don't want to know, at the moment, the reason for it. Is that something you recognise?

A. I don't recall, at that time, having a concern.

Q. He said that the kidney wasn't looking good.

A. Yes. I don't recall, around 10 o'clock, having any concern.
Q. Ah, sorry.
A. Personally.
Q. And that would have been all at the time to do with the discussion of the CVP figure?
A. Yes.
Q. Do you recall a discussion about the condition of the kidney at all at that time?
A. No, I don't, but the one time I would have been tempted to peer over the surgeon's shoulders would have been to see the perfusion of the kidney at clamp release. You would always do that if you were in theatre and I don't recall having any concern about that.
Q. Were you there and did you do that?
A. I have prescribed a drug at 20 past 10 when I review the records.
Q. Yes.
A. And if the clamp release was at 10.30, I'm unlikely to have left in that time. I presume I was there. I don't have a clear recollection.
Q. Would it be normal to record the time of the release of the clamps?
A. It's standard in all transplant operations and it's usually done -- the surgeon would usually call it out

and it is written up on a board or sometimes, if a transplant coordinator is there, she will take the figure because it needs reporting back to UK Transplant.

Q. Yes. Do you know if that time was recorded in Adam's surgery?

A. I have scribbled in the side of the notes, but what I'm not clear is if I was there or somebody told me that was the time or if it is written on the board and I wrote it down.

Q. Which is the time that you were --

A. 10.30 I've recorded that the clamps were released in the margin of one the pages --

Q. Is that one of the same places you have put vascular anastomosis?

A. I'd need to look at the page, sorry. I don't know.

Q. We'll see if we can pull that up for you.

Mr Brown, in fairness to him -- he's also made a statement about the colour of the kidney. That's a statement he made to the PSNI. 093-011-032. He says:

"From what I can remember, the kidney turned pink in colour when it was transplanted and the blood was put through it. As far as I can remember, the kidney remained pink in colour."

Does that accord with your view?

A. I don't recall my comment about bluish, whether it's

something said to me or whether I observed it. So I don't know that I can give any more light on when that was, but I don't have any recollection of concern of the colour of the kidney at the time of the vascular anastomosis.

Q. Just later on?

A. Yes.

Q. So far as you're aware?

A. Yes.

Q. I think we might be able to have that reference for your note since you've asked for it, and I think it's fair to pull it up. 058-035-134.

A. The annotation at the side margin is my writing, "vascular anastomosis approximately 10.30". It would have been intended to be an aide memoire to continue my note.

Q. Sorry, I'm just wanting to be careful. When you have written "vascular anastomosis", do you mean the release of the clamps?

A. Yes.

Q. Thank you. Were you aware of any discussion, irrespective of what you have noted, about the quality or the performance of the kidney?

A. No. Apart from this "bluish" word.

Q. I understand that. And I think you've said, just to

pick up some point so that I don't get asked to address it again, that you weren't aware of the blood gas result at 9.32.

A. I was not aware of that until 2005.

Q. Thank you. If we now move towards the end of the operation --

I beg your pardon. Before we do that, maybe this is the right place to interpose some queries. It's really to do with the multiple venous access and the jugular vessels being tied off. Remember that you had a thought about that?

A. Yes.

Q. If we pull up 058-035-135. Can you see, it's in the parentheses after the "CVP --

A. Yes.

Q. -- at about 30"?

A. Yes.

Q. You say:

"At start of procedure, uncertain if this was accurate as multiple venous access before and jugular vessels tied off."

Where did you get that information for the jugular vessels tied off?

A. That was a presumption that I didn't have evidence for. It was a comment. Thinking out loud if you like.

Q. Yes, but you've put it in your medical notes and records. Somebody might think that to be significant if someone were reading his notes and had seen that you had put it in "jugular vessels tied off".

A. Yes. The only way to ascertain would have been to examine the surgical notes, and at this point in time that wasn't my prime concern. My prime concern was his neurological status.

THE CHAIRMAN: So it's an assumption you made based on your general experience gathered by that point?

A. It's an assumption based, probably, on one patient of mine, who I happened to be the -- happened to be the patient who was transplanted ten days before. He had a big head and I had had occasion to discuss that patient with Dr Webb, and in our discussions he suggested to me that he was ... He had come across some other children who'd had jugular vessels tied off and if he wondered whether there was a pattern of some sort of neurological problem. But I had no evidence for that. I think Dr Webb was considering writing a paper, but I've never seen it published. So I probably made too much of the experience of the patient I'd recently been involved with.

MS ANYADIKE-DANES: I presume it was in your mind so you were querying it.

A. It was only ten days before, so it was on my mind. Although it wasn't a problem for my patient then; it was a problem from when he was about a year old.

Q. Would it be a fair way of putting it, and please correct me if it's not, that it was not that there was any uncertainty about whether that was happening; you were just positing a possibility?

A. I was thinking on paper, I suppose.

MS WOODS: Sir, my understanding of this witness's evidence, as in her statements, was that she was wondering whether the external jugular vein had been tied off. I wonder whether that could be perhaps clarified with the witness.

MS ANYADIKE-DANES: Yes.

A. I'm not a surgeon and my anatomy wouldn't be as good as a surgeon's, but I don't imagine anybody would have a reason to tie off an internal jugular vein as it's such a crucial vessel.

MS WOODS: I will see if I can find a reference.

MS ANYADIKE-DANES: If the point is whether you can identify which is the vein that you were positing might have been tied off.

A. External, probably.

MS WOODS: The reference is witness statement 014/2, page 15.

MS ANYADIKE-DANES: Let's call that up. Thank you.

(b), I think:

"I am not an expert on cerebral venous drainage and this comment was simply my conjecture. I do not know if possible abnormal cerebral venous drainage could have been a contributing factor in Adam's cerebral oedema. I know it was common practice by some surgeons in RBHSC at that time to tie off external jugular veins when Broviac central lines were inserted."

Is that what you meant?

A. Yes.

Q. But in any event, you were positing something?

A. I was.

Q. Thank you.

And then if we move now to the end of the operation. You say, in your witness statement, on 14/2, page 4:

"I was present in theatre towards the end of the operation. I do not recall precise timings. I was aware that at the end of the surgery --

Sorry, there's probably an even better witness statement to put to you, your most recent one.

014/4, page 2:

"I think I was bleeped urgently to theatre and met Adam and the transferring team in the midst of the short journey from theatre to intensive care."

A. I think that's correct, but 17 years later, I find it hard to be entirely sure if I was called back into theatre or met them on the way to intensive care. But I don't have any recollection of being there at the moment that the fixed dilated pupils were discovered because I would have remembered that.
Q. Yes.
A. And I didn't -- I would not, definitely would not have left Adam's side from a point in time that I knew that, so it wouldn't make any sense to me that, you know, um ... I wouldn't have gone to speak to his mum once I knew there were fixed dilated pupils.
Q. I can imagine it's a singular moment when that happens.
A. Yes.
Q. Can you remember who was there other than Dr Taylor, of course?
A. I only remember Dr Taylor. Obviously, there must have been nurses and people there.
Q. And do you know what's happening literally as you get there?
A. I think he was being transferred to intensive care.
Q. Were you aware of whether Dr Taylor had sought help from anybody else?
A. I wasn't aware.
Q. Did you discuss with Dr Taylor at any stage after

this -- I can imagine you're not discussing too much with him at this stage, but did you discuss with him what had happened at the end?

A. I must have done. We were all very, very distressed. There was a lot ... It was quite busy for the next few hours. Adam had to be transported to CT scan. Dr Taylor would have done that journey with him and I would have been trying to liaise with neurology and to make the phone calls about organising the CT scan. So there was a lot of acute care needing to be delivered in the next hour or two.

Q. Just in fairness, because most of the witnesses who are going to attend to give evidence have given a number of statements over a period of time. So the one that I just referred you to was your fourth statement for the inquiry and the most recent. But the earlier statements that you've got, and this is where I was taking you to, that first one, which is your second statement, witness statement 014/2, page 4. You said:

"I was present in theatre towards the end of operation. I can't recall the precise timings. I was aware that at the end of the surgery Dr Taylor discovered Adam to have fixed and dilated pupils."

And then, at page 7, you go on to say:

"I contacted Dr Savage to inform him of the

situation and he returned immediately from the university."

And then you go on at --

MR FORTUNE: While my learned friend is on page 7, my learned friend might well look at the answer to 6(b) because, in that answer, Dr O'Connor says:

"I do not recall --

MS ANYADIKE-DANES: Just where -- beautiful symmetry. That was my next point that I was reading out as I turned the page:

"I do not recall whether I was waiting in theatre for the operation to finish or whether I was called to theatre. The surgical procedure would have finished before Dr Taylor tried to wake Adam up and it was at this point that his fixed dilated pupils were noted."

A. Mm-hm.

Q. So there seems to be a lack of clarity in your own mind of exactly where you were. Either when you heard about it or when you -- when you came to Adam.

A. I think I was called back urgently, but I wouldn't, of course, have known what I was being called back for.

Q. Would you not? If you were called back urgently some time after a transplant had started, would you not have some foreboding?

A. Oh, I certainly had foreboding, but I think the message

was just: come quick.

Q. Do you know who contacted you?

A. It must have been a member of nursing staff. It wouldn't have been a doctor; he would have been busy with the patient. I don't know.

Q. Was Dr Taylor the only anaesthetist there?

A. I don't recall.

THE CHAIRMAN: You recall Dr Taylor, some nurses, but you don't recall anybody else?

A. I don't recall anybody else.

THE CHAIRMAN: That's not saying that nobody else was there, but you don't recall?

A. I don't recall anybody else.

MS ANYADIKE-DANES: Thank you.

So then Adam goes to paediatric intensive care and there's handover, is there not, between you and Dr Savage? Well, you've called Dr Savage.

A. Yes. We had a discussion. I would usually use the term "handover" if someone's going to leave, but we were both present then.

Q. How much longer did you stay on?

A. Um ... I think my last note on the chart was about 5.20, but I don't know how much longer I stayed after that.

MR FORTUNE: Sir, I hesitate to interrupt, but I'm not aware

that there was a handover between Dr O'Connor and Professor Savage at that time. Professor Savage came back in answer to a telephone call to assess or reassess the situation with Dr O'Connor. There is no question of Dr O'Connor handing over the care of Adam to Professor Savage. It was a joint enterprise, if I can use that expression.

MS ANYADIKE-DANES: Yes. Maybe we could see what Dr Savage, just to clarify this, does say about handover, if indeed he does. Can we look at witness statement 002/2, page 2 and the answer to question 4, page 3? It may be my error. (Pause).

I'm not sure I can ... I think counsel is right. There wasn't a handover:

"I immediately returned to PICU to work with the intensive care team and with my other colleagues to ensure that all possible action and treatment was undertaken to achieve his survival."

Thank you.

MR FORTUNE: Sir, I'm not going to stop my learned friend referring to witness statements, but really the best evidence is the transcript of Professor Savage's evidence, and we've looked at that, which is page 151.

MS ANYADIKE-DANES: I understand that. I simply was trying to see if there was a reference to any form of handover.

But thank you very much.

If we go to your witness statement and we go to 014, your first one, 014/1, page 2, where I think you're describing your role in PICU:

"To make a clinical assessment of his [that's Adam's] condition, to request any necessary investigations and to prescribe any necessary fluids and drugs."

Then I think, to go on:

"To inform him [Dr Savage] of the situation and he returned immediately from the university."

So that was your immediate role and your clinical assessment, is that is what you have written down in the notes?

A. In the next answer to the next question?

Q. Yes.

A. Yes.

Q. That was the assessment that you made of Adam at that time?

A. Um ... Well, somewhere I will have described the fixed dilated pupils and the haemorrhages in his eyes, but I don't see it on that page.

Q. That's actually in his -- you've made those in his medical notes and records. I think I have taken you to those: that's 014/2, page 38.

A. I have said, "pupils fixed dilated", yes, but the question was "your analysis of the condition" rather than ... I suppose, maybe, that answered differently, yes ...

Q. Yes. In terms of the two causes that you queried for neurological abnormalities: one was whether he had coned due to cerebral oedema; and the other was that he had a high fluid intake and possible abnormal cerebral venous drainage. And I think we see that at 014/1, page 3.

A. Yes.

Q. Is this part of your analysis, that you're trying to work out what had actually happened?

A. Once I got the serum sodium result back, yes.

Q. Thank you. And your plan then is to restrict his fluid intake?

A. The most urgent thing would be to give mannitol to try and reduce any cerebral oedema. If I'm honest, I have never seen someone with fixed dilated pupils recover ever in my life. So in my mind, I felt it was irretrievable at that stage.

Q. Let's go to your plan. It's not fair to put it to you without seeing the document. 058-035-137. There we are. There's your plan, the first half, plan 1:

"50 ml mannitol."

A. Yes, that was a treatment for cerebral oedema and so was hyperventilation.

Q. I think you earlier said you agreed with Dr Taylor's plan for hyperventilation.

A. The anaesthetist is in charge of ventilation, yes.

Q. But you had agreed with that as a method?

A. Yes.

Q. And then "fluids replace" and then a bit of a smudge. It is your note; can you help us?

A. "Output at present [probably], will need to restrict further."

I still had some concern that there was a transplanted kidney here. I hadn't -- as a nephrologist, I suppose it's very difficult to give up on a transplanted kidney. But there was essentially no output, so that didn't really cause him to get extra fluid when I said "replace output". There was a certain minimum to keep the lines perfused and the drugs going. There was ciclosporin, which I think was 2 or 3 ml an hour. It'll be on the fluid balance chart that I wrote up and there was dopamine, which was a small number of ml per hour, and there probably was also an arterial line to be perfused. So the total will have been 10 ml an hour for all the essential medications and things that had to go in.

Q. And that plan emerged out of your analysis, which is just above it, and you're querying the reason for his central nervous system problem.
A. Yes.
Q. And you say:
"More likely coned in theatre. High fluid input and abnormal cerebral venous drainage."
A. Yes.
Q. That's your analysis of where you were with Adam and that five-point plan is how you propose to address that. Part of it is to get a neurological opinion.
A. Yes.
Q. And how long would it take the mannitol to start to make an impact on the cerebral oedema?
A. There are others who would be more expert at answering that, but I think 10 to 20 minutes for a diuresis with mannitol, but --
Q. Sorry. The reason I ask you is you prescribed a certain amount. Did you prescribe that amount having in mind a period of time over which you thought it would become effective and how effective, if I can put it that way?
A. It usually works within, in my understanding, 10 to 15 minutes. It's not usually something that you repeat. You're usually in some sort of emergency situation. It's not -- if you give it and it has its effect,

I don't know that giving lots more has more effect.
Q. And the ventilation?
A. The purpose of that is to -- and I guess, again, better explained by an expert than me. But it affects the blood vessels within the brain, it constricts them a little bit if the carbon dioxide levels are low, so it leaves more room for the brain. An expert neurologist would answer that a lot better.
Q. Please don't misunderstand me, Dr O'Connor: I'm not trying to turn you into an expert in these fields; you've developed a plan and I'm trying to understand the logic of why you had that plan and what you were trying to achieve by it. That's all.
A. I was treating the cerebral oedema.
Q. And then if we go to 058-035-138, which is just the page over. There, I think, your view is that it was dilutional hyponatraemia.
A. Yes.
Q. There we have it: "query dilutional".
A. Yes.
Q. Actually, it doesn't say "dilutional hyponatraemia", it just says "dilutional".
A. Yes.
THE CHAIRMAN: Is that what you mean?
A. Yes.

THE CHAIRMAN: Thank you.

MR FORTUNE: Sir, might I rise at this stage because my learned friend has quoted 058-035-138. If that document could be put to the left side of the screen and if we could ask for 059-006-016 to be brought up. I'm looking at a different document and there is the entry above the redacted left-hand column on the left hand document, and there's the sodium entry, 119.

MS ANYADIKE-DANES: It's the same document, I think.

MR FORTUNE: Is it?

MS ANYADIKE-DANES: I believe so. It just appears in two different files. But it's the same document. The document that is on the right-hand side has had the redactions removed or, at least -- I think they were highlighter pens, to be honest, and when it was photocopied, it has come out as if it was redacted -- that someone has applied a highlighter to important bits of information, I would imagine, so one can see why "sodium 119" would be there.

THE CHAIRMAN: So the right-hand page is a better one to go to because it shows the information more clearly?

MS ANYADIKE-DANES: Yes.

MR FORTUNE: I'm grateful for that explanation because, clearly, what I'm looking at was, I thought, a redacted document.

MS ANYADIKE-DANES: No. In fact, I think Dr O'Connor, in fairness to her in one of her witness statements, explains that some of these pages have come out as if things have been redacted. What she says is there was a highlighter of some sort applied. When they're then photocopied, they look as though they have been redacted, but they haven't, in fact.

In any event, the good thing about it is you've actually brought up the much better page to look at. Because you can now clearly see that that is your writing recording the sodium figure.

A. Yes.

Q. It makes more sense as to why you have "query dilutional" at the bottom of that.

A. Yes.

Q. And then one can see the chest X-ray, which is the other thing you wanted to happen, and the record of that showing that the CVP line was going up the neck vessel. That was part of what enabled you to query whether it was obstructing venous return; is that right?

A. Yes.

Q. Apart from noting where the CVP line was, did you look at the chest X-ray from the point of view of considering what it showed about any potential oedema in his lungs?

A. I haven't recorded that and, 17 years later, I don't

remember. It would have been the reason I probably got the X-ray, but the X-ray also would have been got to look at the line position. But I don't remember what the lung fields showed at this point in time.

Q. Forgive me if you have answered this somewhere else, can I ask what the primary reason for getting the chest X-ray was?

A. With any patient who has had a central line inserted in theatre, our practice is always to get a chest X-ray to look at the position and with any patient with a renal transplant, we would always do that and we would always look at the lung fields for pulmonary oedema because it is a risk of any transplant, a small risk that there might be pulmonary oedema. So it was a dual purpose, I suppose.

Q. I understand. I wonder if we may go now to the fourth point in your plan, which was to get neurological opinion.

A. Mm-hm.

Q. Is the person you contacted for that Dr Webb?

A. Dr Webb was the only neurologist available. I presume the other one was on holidays. I don't have access to the rotas. I don't have a clear recollection if I actually spoke to him because when I rang the neurology ward, I was told he was either on his way to

or in Altnagelvin Hospital some 70 miles away to do a clinic. I do not know if it was an all-day clinic or an afternoon clinic. It was in the days before people had ready access to mobile phones, so he would have carried a Vodapage and I'm unclear some 17 years later if I left a message that we needed him urgently or whether he spoke -- we had a communication or whether I just got a message that he would come as soon as he got back from Derry. I don't recall the details, but he's the person I would have requested to come.

Q. Let's see if this helps: 014/4, page 5. This is Dr Webb. You say much of what you have said now, your recollection of the details of communication is poor. You contacted him as you say you did. You recall being informed by the neurological ward that he was due to do an afternoon clinic in Altnagelvin. Then you consider he was en route to Altnagelvin, he later phoned back:

"If the post-operative serum sodium level of 119 was available to me at the time of my conversation with him, I would expect that I communicated this to him, but I have no detailed recall of the conversation."

A. Yes, I don't actually recall if we had a conversation. I don't remember.

Q. Yes, but at the time you were trying to contact him -- let's try and see if we can approach it that way --

would you have had the 119 serum sodium result then?
A. I don't think so because I have written the serum sodium result on the page after I have written the desire to contact Dr Webb, so I would have seen that as something urgent to do. I obviously initially wouldn't have known he was 70 miles away. He might have been 100 yards away, so I would have attempted to contact him most urgently.
Q. In any event, he does come and I think he does the first brainstem test subsequently with Dr Campbell; is that right?
A. I wasn't present at that time -- I had gone home -- but I have read the notes.
Q. He does a second one with you.
A. That's correct.
Q. And do you discuss, at all, Adam's condition with him?
A. We must have had a conversation the following morning. And it seems inevitable that Adam was brain-dead and it was all very sad.
Q. I understand that. That wasn't quite what I was putting to you. I asked you if you thought you had a conversation with him and I think you said you thought you must have, it would have been inevitable.
A. Yes.
Q. If you're having a conversation with him, would you be

telling him your views as to what had happened?
A. I don't recall the conversation.
Q. No, I appreciate you don't recall the conversation.
THE CHAIRMAN: And that's fine, that's not a problem. In general terms, if you must have had a conversation with him, what must that conversation have been about?
A. I think it would have focused on the brainstem tests. I don't think I came to work intending to be involved with brainstem tests, but I was the consultant who happened to be there when he arrived.
MS ANYADIKE-DANES: Well, did you give him any of the information that you had about Adam, for example the information that you had about the fact that he was very puffy when you saw him, about the fluid regime that you had noted and the conversation that you had had and the conclusions reached with Dr Savage?
A. I don't recall what conversation I had with him, but he obviously had full access to the notes on which I had --
Q. You have had the benefit of looking at those notes for longer, perhaps, than Dr Webb might have had. And you formed certain views, you have had the benefit of being able to discuss matters with Dr Savage. So I'm simply asking, in those circumstances, would you have thought it was appropriate to give him some of the information that you had taken time to gather together?

A. I don't recall what conversation I had with him, but the information was in the notes about --

Q. Would you have thought it appropriate to do that?

A. This was Dr Webb's second time to see Adam. He had seen him first the night before when I was not present. I would think his first assessment at that time would have been in more detail than the next morning, but I don't know. I wasn't there.

THE CHAIRMAN: But on the more important day -- and they're potentially all the more valuable -- if Dr Webb has seen Adam the night before and he may have formed some initial views. You come in the next day and it is your first face-to-face with Dr Webb. It might have even be your first conversation with Dr Webb.

A. Yes.

THE CHAIRMAN: Would you not have been exchanging ideas and views about what had gone so terribly wrong? It would seem to be to be very unusual if you didn't.

A. Yes. I just don't recall the detail of the conversation.

THE CHAIRMAN: Yes, but do you agree that you must have had some conversation along those lines, even if you don't remember what the details of it were?

A. It seems likely.

THE CHAIRMAN: Yes.

MS ANYADIKE-DANES: I will ask you this, which is a difficult thing to ask, but you're there at the second brainstem test and a point arose whilst the inquiry's experts were discussing it. I wonder what is the protocol that is followed or was followed, sorry, at that time.

A. Um ... There was a guidance written in 1995 by the transplant coordinators. Within it was contained the Department of Health guidelines about brainstem testing. There certainly was a page to be filled in. I think there was some guidance also about things like electrolytes that abnormal electrolytes should not be seen as, at that point, causative of the coma. Those guidances -- I think that guidance was rewritten by the Department of Health in 1998, but did not essentially differ. I think it still referred to the various things you look at, whether somebody has had drugs on board. Also in terms of whether their electrolytes were abnormal, was it considered causative of their coma.

Q. What is the purpose of trying to exclude all those things?

A. To exclude -- sorry, to exclude reversible cause of coma and there seemed to be very significant evidence here of fixed dilated pupils and a very abnormal CT scan.

Q. I understand.

A. I don't think anybody would think any of that was reversible.
Q. At that stage as a matter of fact, where were Adam's serum sodium levels? Were they within normal range at that stage?
A. His serum sodium was 125 on the morning of the 28th at 8 am. That wouldn't be a level in my experience that I would associate with coma, but that's a point best put to a neurologist.
Q. The point I'm putting to you -- because you're with Dr Webb for the second brainstem test -- is: at that time, were Adam's serum sodium levels within normal range?
A. No, I think it would have been very difficult to achieve that aim.
Q. Thank you. I wonder if I might ask you something about your communication with the family. I think what you've said is that you don't actually recall any communication with the family.
A. I don't recall the conversations, but I'm very aware that Adam's mum in these tragic events will have a very clear memory. And she recalls speaking to me, I think on two occasions. If I might say, although I don't recall the content of the conversation, my belief always as a doctor is that I should be honest with the parents of my patients and I believe that whatever information

I gave her in any conversations would have been whatever information I had at that time. Because I do believe that even if information is painful or difficult, parents have a right to know all information that is available. And that is the basis on which I have always conducted my medical practice.

Q. Adam's mother has in her witness statement -- let me give you her witness statement in fairness. It's witness statement 001, page 4. She says:

"Dr Savage and Dr O'Connor were very good at keeping me informed of what they understood was happening in theatre. At 9.30, I was told things were progressing well."

Then we move on:

"Mr Brown was assisting Mr Keane. Some time after 10, I was told the operation was taking longer than expected because of Adam's previous surgery and because of Adam's weight."

Pausing there for a moment. That would have to be you who told her that; it couldn't be Dr Savage, could it?

A. No, he wasn't there at that stage is my understanding.

Q. So where did you get the information that Adam's operation was taking longer than expected because of his previous surgery and because of his weight?

A. I think I was aware possibly from a conversation in theatre that there were adhesions.
Q. Sorry, possibly from?
A. From a conversation in theatre that there were adhesions. And it is documented in the operation note later on that there were adhesions. That takes time for a surgeon to deal with.
Q. Sorry, can I just pause there for a minute? Firstly, you wouldn't have read the operation note at that stage because it wouldn't have been made.
A. No, no.
Q. So if somebody was mentioning adhesions, who is that person so far as you're aware?
A. The surgeon.
Q. So you would have heard Mr Keane -- or somebody report that Mr Keane -- had referred to adhesions?
A. I don't recall.
Q. And then, according to her recollection of it, what you tell her is that it's taken longer than expected. Do you know what the expected time was for you to be telling her it's taking longer?
A. I was making a judgment based on my experience in Bristol according to when a child went to theatre and when I might have expected him back.
Q. What was that?

A. I was aware that Adam had gone to theatre some time before 7 am and I might have expected everything to be finished about sort of 3.5, 4 hours, and we weren't at the point of being near finished here. So I think I was aware she was anxious and I was trying to give whatever information I had. It was probably fairly meaningless information, but I was trying to be reassuring that I had no evidence of any cause for concern at that point in time. That is what I will have been trying to convey to an anxious mother.

Q. But you might have had some evidence of cause for concern because, round about that stage, you've known that nobody in that operating theatre knew what Adam's CVP was, which was a vital measure.

A. I'm not sure at that time whether I knew that or whether it's when I went back to theatre.

Q. Well, the 30 that prompts the question that starts the whole thing is indicated at 10 o'clock or thereabouts.

A. Yes.

Q. Adam's mother is saying some time after 10 o'clock.

A. Yes.

Q. Assuming that that is accurate, and it's all everybody's recollection, then that would have already happened before you went to speak to her, if that were accurate. And so, at that stage, you would know that nobody

actually knew what Adam's true CVP was.

A. I don't recall if I knew that at the time I spoke to her or whether I knew it afterwards.

Q. Well, is it you who tells her that Adam's out of theatre at 12 noon?

A. I don't recall that, but I know that her memory will be very clear of that very traumatic day. But it may be that's where I was when I got called back because once I knew that Adam had fixed dilated pupils, I would not have left his side. I asked for help and asked for Dr Savage to come.

THE CHAIRMAN: I think the way this statement is typed up is a bit misleading. The last sentence in the paragraph:

"Around 12 noon, I was told Adam was out of theatre."

The next paragraph seems to continue that conversation and three lines down says:

"I cannot be specific, but I have a memory that all the information at this stage came from Dr Savage and Dr Taylor."

In essence, shouldn't the last sentence in the previous paragraph be the first sentence in the new paragraph so it seems not to be referring to Dr O'Connor?

MS ANYADIKE-DANES: I don't know. It's -- the witness,

I presume, will give evidence as to exactly what that means.

THE CHAIRMAN: Mrs Slavin doesn't say --

MS ANYADIKE-DANES: I wasn't going to put that. That's why I asked this witness if it was she who spoke to the mother because I'm not entirely sure that Adam's mother is claiming that it was Dr O'Connor who spoke to her at 12 noon. The way she frames it is: around 12 noon, I was told.

A. I don't recall, I am sorry. I can't help.

Q. That's all right. What was the significance of Adam's weight? You don't mention -- she doesn't record you as mentioning very much. One is the taking longer because of his previous surgery and the other is his weight. What is the significance of that? 20 kilos, just a bit under 5 years old.

A. It was probably my impression that, unlike a lot of our renal failure patients who are very skinny, that Adam was more well nourished than some of them. Credit to mum's very good work with giving the feeds that were prescribed. And it seemed to be --

Q. Sorry, the point I'm trying to get at is: what's the significance of telling her that in the context of saying that the operation was taking longer if, indeed, you've connected those things? You certainly have

connected the operation was taking longer than expected because of Adam's previous surgery and it seems -- because you have an "and" in there -- that, somehow, his weight is part of that.

A. I was making an assumption about the difficulty of working in a small wound where there's maybe a little bit of fatty tissue and so on. I was making assumptions about surgery that I probably wasn't qualified to make. I wasn't doing the surgery, but I was simply trying to --

Q. Did anybody tell you that anything to do with his weight was causing a problem? Not causing a problem, but extending the estimated time of his surgery.

A. I think it was my assumption that seemed to be delving down deep to get at the blood vessels in the surgery as opposed to somebody whose abdominal wall is this thick (indicating) --

Q. Pausing there. I'm not sure how you have an assumption that somebody is delving down deep to get at the blood vessels. Does that mean you saw that?

A. I was in theatre when they were working with Adam, but --

Q. You have just described something that doesn't seem to fit by making an assumption. So did you see that?

A. The comment about the weight is probably irrelevant.

I was trying to --

Q. That's a different point. You have now made a point when I asked you about the weight, whether anybody told you that, and you said that they seemed to be damping down deep, I think was your expression. You seemed to put that as an assumption and all I'm asking you is: did you see that?

A. It's hard for me to remember. I think I was making an assumption that a slightly chubby little boy would be more difficult to operate on than a very skinny little boy.

THE CHAIRMAN: Okay, thank you.

MS ANYADIKE-DANES: I think that there was some other information that Adam's mother records you as having given her. It's in her deposition to the coroner. It's 011-009-026. She says about the fourth line down:

"In the remaining two-and-a-half hours of surgery, I was told by Dr O'Connor that because Adam was quite heavy and because of adhesions caused by previous surgery, things were taking longer than expected."

Then she goes on:

"I was also told that Adam's bladder was enlarged and that after transplant, he would need to be catheterised several times a day."

Is that something that you told Adam's mother?

A. It's quite likely to have been because my concern, as a nephrologist, would be for the best survival of a transplant kidney and if the bladder is large, it suggests that it drains poorly and if you allow that situation to continue following a transplant, you're likely to cause damage to the transplanted kidney. So we frequently institute regular catheterisation for some children post-transplant, whom we have not done that on pre-transplant because their kidneys were already wrecked and there was no need to save a wrecked kidney, if you get my point.

Q. Yes, I do. Well, it doesn't sound -- in fairness to you, you said that you're a believer of telling parents the way things are as you see them.

A. Yes.

Q. So you have given some information there, some of it quite specific information.

A. Yes.

Q. I wonder again why, at any stage, you didn't tell her the concern you had had whilst you were in the operating theatre because she certainly doesn't record that at any stage.

THE CHAIRMAN: I'm sorry, but the witness said that the concern which she had was allayed by her conversation with Dr Taylor.

MS ANYADIKE-DANES: I think she then went on to recognise that it was difficult that nobody actually knew what his CVP was. I beg your pardon, Mr Chairman, I should have framed that better. That's what I mean.

I presume that that was a concern that nobody knew what his CVP was.

A. I wasn't expecting a poor outcome from that because my -- as a nephrologist, the purpose of recording the CVP is to make sure that it is high enough to perfuse the transplanted kidney and there was some reassurance in having seen that the transplanted kidney had become pink.

Q. Sorry?

A. I was somewhat reassured to see that the transplanted kidney had become pink because the purpose, generally, during a transplant to measure CVP is to make sure that the CVP is high enough to allow a head of pressure, if you like, to perfuse the transplanted kidney.

Q. When did you see the transplant kidney become pink?

A. It must have been about 10.30 or else it was the time of the anastomosis.

Q. Unless it's somewhere else in your witness statements or notes, I thought your only actual description of the transplant kidney was that it was bluish. I may be wrong, so I'll just check it.

A. [OVERSPEAKING].
MR BRADLY: [Inaudible] she doesn't know whether that came from somebody else and she recorded it.
MS ANYADIKE-DANES: I understand, thank you.
Are you saying now you did see the kidney and you saw it become pink?
A. Sorry, I'm getting confused because I've read these statements so often and other people's statements. I was aware the kidney had pinked up. I don't know whether I had directly observed it, but you have just shown me Mr Brown's operation note when he described it as pink.
Q. I understand.
A. I think I took it as read that the kidney had become pink around about 10.30.
Q. From somebody else's note or somebody else's observation?
A. I'm not clear. I don't have a clear recollection if I witnessed it or was told it.
Q. Okay. If you had seen it, is that something that you would have noted in particular, given that you have a record elsewhere in the notes? I'm not saying that you saw it bluish, but you've got a record of that. So if you had seen it as pink, is that something that you also would have recorded? You may have recorded it;

I'll stand corrected if we find it in the notes, but I'm not sure I remember seeing that.

A. It's something that you expect to happen in, hopefully, all kidney transplants. It's a wonderful thing to happen but it's a routine thing to happen.

Q. I appreciate all of that. And now that you have said that, I wonder if we can look at -- if you pardon me for one moment. Perhaps if we can pull up Professor Berry's report.

THE CHAIRMAN: We'll stop now for ten minutes. You've almost finished, so if there are any specific questions which anyone wants raise, you need to think about it over this break because Dr O'Connor, save for any new developments, will not be back after today.

(4.00 pm)

(A short break)

(4.19 pm)

MS ANYADIKE-DANES: Dr O'Connor, I think I might be able to deal with things quite quickly. I hope so anyway. Just to, in fairness, clarify one point: I was asking you a number of questions about who was updating you and when, if I can put it that way, and in terms of what was happening during the theatre. What I should have put to you was the most recent statement from Adam's mother. It's 001/2, page 12.

You can see in the answer to 68 that she gives the time and it's 9.30 by Dr Savage and she's very clear about that, for reasons she's explained, and 10.30 by you. If one goes over to page 13, this is the point I think that you were being asked most recently, the number to question 76:

"Who informed you that Adam was out of surgery? I am not certain."

A. Okay.

Q. So I think that accorded with the slight equivocation that we had noted in her previous witness statement.

Then I think there are literally only two points -- three. If we can look at your witness statement, 14/3, page 4. I think there's a reference to severe acute cerebral oedema. Maybe it's in answer to 3(d) -- this is your five-point plan, I think, point 4 of which was a clinical opinion or at least a neurological opinion. You say that you got that from Dr Webb:

"He saw Adam at 19.30 and concluded that his examination was compatible with brainstem death secondary to severe acute cerebral oedema, which may have occurred on the basis of unexplained fluid shifts."

In fairness, he goes on in his own witness statement to deal with the unexplained fluid shifts point and whether he did or didn't know at that stage about Adam's

low sodium.

A. Mm-hm.

Q. But in any event, I think the point that people were interested in is that he was communicating that there was severe acute cerebral oedema.

A. Yes, I wasn't present at 19.30 hours. I had gone home. I obtained this information from the notes.

Q. You obtained that?

A. From Dr Webb's written note.

Q. Right.

A. I wasn't present at 19.30 hours.

Q. Okay. Then one final question from me and then a request for an observation. The question is: when I was asking you about where you got the information in relation to Adam's fluids during the surgery --

A. Yes.

Q. -- I stand to be corrected, but I think you had accepted that you got those from the anaesthetic record.

A. At round about 12 midday because I would not have had access to the anaesthetic record during surgery.

Q. Yes. But you saw that record and that's when you got your information?

A. Yes.

Q. I have the original -- I hate to have an original of anything, but I do have the original of this and I'm

going to hand it up to you. I'm told that this is exactly the form in which it was in or which it has been maintained in his notes and records, if I can put it that way. Obviously, I myself have no idea. I wonder if I could just hand that up. (Handed).

It opens out. Is that familiar to you, that style?

A. Yes. It's a form, a similar one to the one we use today.

Q. You've got the original so I'm not looking at it. But I think clipped to there is the printout from the blood gas machine.

A. Yes, it's sellotaped on here.

Q. Exactly. Does that give you the serum sodium result?

A. At 0932 hours, it gives a serum sodium of 123.

Q. Yes. I have not looked at the transcript, but I thought I heard you say you had not actually seen that until some time very much later on.

A. In 2005 when I went to examine the records because it was not sellotaped on like that when I saw the records.

Q. Sorry, let's be absolutely clear about it. When you were looking at his notes and records at about midday, that wasn't attached to it?

A. No. Certainly not.

Q. And you didn't actually see that until 2005?

A. Correct.

Q. Thank you very much. This is the final point: it may be that you wish to say something at this stage.

A. Is that okay? Just a sentence or two. I again would like to express my regret to Adam's mother and his family for his death, a very tragic death of a little boy. I'm sure these days of what is going on now are very difficult for her to relive things and I'm aware that nothing can take away her grief.

I would like to say to her that hard lessons have been learned in the Children's Hospital and, as part of the nephrology and the anaesthetic and the surgical team, we endeavour every day to make our patients' care as safe as possible.

I would like to offer her some details about what has subsequently happened because I imagine she would be somewhat pleased that our service is as best as we can make it at present. Since Adam's tragic death, we've had 69 Belfast paediatric patients who have been transplanted. There have been no further perioperative deaths. I'm very pleased to say that since 2010, we've had an injection of funding in Belfast to provide resources for the living related donor programme, and since 2010, despite the comments about our small numbers in the past, we've had 20 Belfast children who have been transplanted. 17 of those children have been in the

Children's Hospital; three of them have been in England. All of the children are well, I'm delighted to say. 100 per cent of the transplants are working, which equals the best results in the UK. I say these words because I think I also need to offer some reassurance to the parents of our current patients, who undoubtedly will be troubled by what they read in the press, and I would like also to reassure them that our results are as good as any centre in the UK and I hope that these words are of some comfort to Adam's mum.

MS ANYADIKE-DANES: Thank you.

THE CHAIRMAN: Okay, thank you, doctor.

I presume there have been some discussions at the break about whether there are any further questions. Mr McBrien, Mr Hunter?

MR HUNTER: Yes. Thank you, sir. I do not have any questions for Dr O'Connor.

THE CHAIRMAN: Okay. Mr McAlinden for the trust?

MR McALINDEN: No.

THE CHAIRMAN: Before I come to Dr O'Connor's own counsel, are there any other counsel who have questions to ask?

MR MILLAR: There may be one or two small matters, sir, but in the light of Dr O'Connor's comments, I think it's best to leave them.

THE CHAIRMAN: And your own counsel?

MR BRADLY: I'm very grateful, I have no questions.
THE CHAIRMAN: Dr O'Connor, thank you very much for coming and thank you for your evidence. You can leave now.
A. Thank you.
(The witness withdrew)
THE CHAIRMAN: Ladies and gentlemen, we'll resume tomorrow morning at 9.30 with Mr Keane.
Housekeeping
MR FORTUNE: Sir, can I raise a matter of housekeeping? We have a serious overrun at this stage.
THE CHAIRMAN: Yes.
MR FORTUNE: I'm going to ask you if you will, certainly, sit at 9.30 on Friday and, perhaps, we should consider sitting at 9.30 each morning. Sitting at 9.30 would, to us, mean sitting at 9.30 and not 9.45. But sir, we have yet to start on time at any adjournment, as far as I can recall, and that is contributing to time pressures. Can I invite you to consider 9.30 as a more permanent start?
THE CHAIRMAN: There's a number of things about that, Mr Fortune. Part of the reason why we're not starting promptly after adjournments is because I understand that there are regular discussions in which more questions or issues are raised with inquiry counsel about whether certain points might be added for certain points clarified and so on. So although the stenographer's

timetable, to an extent, dictates ours, those breaks are not necessarily inconvenient if they help with the questioning of the witnesses going more smoothly.

But there is also a more general problem, which is bearing, which is that we had only originally intended only to sit for four days a week. For the first two weeks and into next week, we'll be sitting five days a week. That cannot be maintained because it leaves us with inadequate time to prepare for the witnesses who are coming on and also it gives me, as the chairman, and the rest of the inquiry team less time to continue with the other work which the inquiry has to put in place for the next sessions.

So we will certainly start at 9.30 tomorrow. I will consider your idea of starting at 9.30 on the following days. It might become easier because I don't think we're -- for instance, some of the nursing witnesses who are coming will not be like the existing witnesses who have been in the witness box for at least one full day or two full days. So they won't reach a stage in the afternoon when they're tired out and we can't push them any further, so starting at 9.30 wouldn't impact on them. But we'll start at 9.30 tomorrow in any event.

MR UBEROI: Sir, may I add one further housekeeping query? It is very clear where we are going tomorrow, but have

you formed a view as to which witnesses will be coming on Friday, please?

THE CHAIRMAN: If you give me five minutes, I will come back out and tell you that. Okay?

MR UBEROI: Thank you very much.

(4.31 pm)

(A short break)

(4.33 pm)

THE CHAIRMAN: In response to Mr Uberoi's query, you know that we have scheduled the completion of Mr Keane and the evidence of Mr Brown for tomorrow. The witnesses who are scheduled for Friday are: nurse Catherine Murphy; nurse Joanne Sharratt; and Eleanor Boyce, also known as Eleanor Donaghy, the transplant coordinator. Hopefully, by this time tomorrow, we will be able to confirm the sequence of witnesses for next week.

MR UBEROI: Thank you very much.

(4.35 pm)

(The hearing adjourned until 9.30 am the following day)

I N D E X