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Friday, 4 May 2012

(9.45 am)

(Delay in proceedings)

(9.55 am)

PROFESSOR JOHN FORSYTHE and MR KEITH RIGG (continued)

Questions from MS ANYADIKE-DANES (continued)

MS ANYADIKE-DANES: Good morning, Mr Chairman. Just before I continue the questions for the witnesses, I wonder if I might draw one matter to everyone's attention.

When Dr Haynes was giving his evidence yesterday, I asked a question to him in relation to CVP measurements and put to him Dr Coulthard's view about the initial CVP measurement being likely to have been reliable. You heard Dr Haynes' evidence about how he thought that if that were the true CVP measurement, that is, at the start, then that would not be consistent with Adam's physical presentation.

It was being put as if there was a difference of view between he and Dr Coulthard. Over the evening, I went back to the transcript of the meeting of experts on 9 March, where that very issue was discussed. Mr Chairman, you can find it at 307-008-182. It starts at line 14, really. If I take 13 as an entry to it.

What's being discussed is about Adam's position and where the line was and the effects of that and so forth.

1 What Dr Coulthard said is:

2 "If we accept that the only evidence we have is to
3 the waveforms or not is that we are told there were [in
4 other words, that there were waveform its there], if
5 that were true then I agree entirely with Simon's
6 speculation that CVP as high as Adam had at the onset of
7 surgery or had recorded at the onset of surgery is not
8 at all compatible with what we think his physical state
9 was at that time."

10 He went on in a subsequent report following the
11 meeting in Newcastle to postulate what he thought where
12 the problem was. It was clear he thought that the CVP
13 reading was unreliable and the problem, he thought was,
14 a failure to accurately or properly re-zero the
15 equipment. His report essentially deals with how they
16 might have re-zeroed it.

17 Anyway, the essence of it seem to be that whatever
18 his initial position might have been at that meeting on
19 9th March, he was certainly signalling that he was in
20 agreement with Dr Haynes, and I think his subsequent
21 report would appear to establish that. But he will give
22 his evidence and we can ask him that.

23 THE CHAIRMAN: Thank you.

24 MS ANYADIKE-DANES: Where we were at the end of the evidence
25 yesterday was dealing with the possibility of live

1 donation, I think. What I wanted to move on to was to
2 deal with the offer of the donor kidney and the events
3 thereafter. I think one question it would be helpful if
4 you could assist with was Mr Keane's view as to Adam's
5 mother's implied acceptance of the transplant by
6 allowing him to go on the list.

7 We find that in the transcript for 24 April at
8 page 55. It really starts at line 15. This is part of
9 an explanation of the process by which, between them,
10 Mr Keane and Dr Savage, as he was then, would have
11 agreed whether or not the offer, as it came from
12 UK Transplant, should be accepted.

13 So he starts by saying:

14 "The minimum that the kidney would be coming to
15 Belfast couldn't possibly be inside one hour. So now
16 I had an hour to go back to reassure myself."

17 At that stage, I think he's given his evidence that
18 he would have indicated just on the basis of the
19 information that he had that he would with accepted that
20 kidney, but he's saying that he has an hour to go back
21 and reassure himself, have a discussion about which:

22 "I now realise we may have two discussed children.
23 I can't remember that but I do remember the issues of
24 discussing ..."

25 And he goes on in page 56, it's sort of a broken

1 discussion in a way. He then goes on -- and the
2 chairman intervenes:

3 "Mr Keane, taking advantage of this extra time that
4 you're describing at that point, is it your
5 understanding that Adam's mother would already have
6 given her consent."

7 And then the chairman continues with that:

8 "Because you wouldn't start to put a kidney en route
9 to Belfast by sending it to Glasgow Airport if Adam's
10 mother hadn't consented."

11 And this is the point I think it might be helpful to
12 have your views on:

13 "Mr Chairman, that's the implicit point about -- you
14 give consent to go on the list. She had already, if you
15 like, given consent to this process, this cascade of
16 events by going on to the register."

17 And then he goes on:

18 "[And] she knew that, by entering the system, the
19 consent was implied."

20 What he then goes on to deal with is that at some
21 point during the journey of one hour from Glasgow to
22 Belfast, if when they knew more details about the actual
23 recipient, formed the view that maybe it wasn't an
24 appropriate kidney, then they could somehow let
25 UK Transplant know that they weren't accepting the

1 kidney.

2 But what I wanted your view on is this issue that
3 follows on from your discussion about consent and
4 information yesterday, whether you regard the fact that
5 Adam's mother had agreed to him going on the transplant
6 list could be taken as an implied consent for the
7 transplant procedure once the offer was actually
8 communicated to the clinicians in Belfast.

9 MR MILLAR: I think, sir, if I could interrupt briefly at
10 that point. I think there are two things that are
11 important here for these witnesses to understand.

12 Firstly, when the issue of the acceptance of the
13 kidney was being discussed, this was not about Adam.
14 Mr Keane was quite clear about that, and in fact there's
15 a reference in that part of his evidence, that there may
16 have been more than one child under consideration, so
17 we're not talking about a specific child. So what
18 Adam's mother has done or not done is neither here for
19 there.

20 The second thing is that he's not talking here about
21 that she has consented to the transplant surgery as
22 such, he's talking about an implicit consent to go
23 through the process by going on to the register.

24 I certainly have not heard any part of his evidence as
25 being that there was no need to take a formal consent

1 from the patient's mother prior to surgery because she
2 had agreed at a much earlier stage that the child should
3 go on the register.

4 THE CHAIRMAN: If I may say so, Mr Millar, your client
5 didn't help himself in the way he gave his evidence on
6 this point.

7 MR MILLAR: I was quite clear about his evidence, sir.

8 THE CHAIRMAN: I'm not. Are you accepting that Adam's
9 mother could not be somehow taken to have consented to
10 the kidney transplant on 27 November because she agreed
11 to Adam going on the list in the first place?

12 MR MILLAR: Firstly, sir, my client wasn't involved in
13 taking the consent for the surgery. We know that
14 Dr Savage did that. But quite clearly, Dr Savage's
15 evidence was that he took her consent, I think he
16 thought, in the early hours of the morning of the 27th,
17 after the cross-match came through on the tissue.
18 That is the consent process. I think that's clear.
19 Nothing that happened before that can possibly
20 constitute the formal consent to the surgery.

21 MS ANYADIKE-DANES: I think I might be able to help with
22 this, Mr Chairman, because I think my learned friend is
23 proceeding on an erroneous basis. There is nothing here
24 to suggest that Adam's mother was consenting for the
25 transplant in this way, by an implied way, in some sense

1 that meant she didn't need to sign for consent.

2 The issue didn't arise like that. The issue arose
3 as a difference between the evidence of Professor Savage
4 and Mr Keane. Professor Savage, if you recall,
5 Mr Chairman, said that before he went back to
6 UK Transplant to accept the kidney, he would have spoken
7 to Mr Keane, he would have spoken to the anaesthetist
8 and made sure that there was an operating theatre
9 available and so on. Then he would have spoken to the
10 mother, got her consent, not the written consent, but
11 that she was going through with it, and then he would
12 have accepted the kidney. That was Professor Savage's
13 evidence.

14 Mr Keane's evidence was slightly different. His
15 evidence was that when he was first contacted, he didn't
16 know, in fact I thought I had said that, that he was
17 going to find out in that interval of that one hour when
18 the kidney was en route, he didn't actually know who
19 that kidney was for. All he knew were the details of
20 kidney. And he would have had a relatively brief
21 discussion with Dr Savage about that, and actually
22 deferred to him as to whether he was prepared to accept
23 a kidney of that sort.

24 In the intervening period he then said that he would
25 be given all the details by the transplant coordinator,

1 and if when he heard all the details and knew the
2 intended recipient and for some reason he had a concern
3 about that kidney for that recipient, then he felt that
4 he still had time before the kidney actually physically
5 landed in Belfast to communicate that fact. And it's
6 that element and that way of going about things, if I
7 can put it that way, that I'm trying to put to the
8 witnesses. I don't know if that accords with your
9 recollection of the evidence.

10 THE CHAIRMAN: It's what looks at the bottom of 56, at
11 line 19, the transcript quotes me as saying:

12 "I sense some disagreement between you and
13 Professor Savage."

14 And I presume what I go on to outline then is
15 roughly what you have just indicated.

16 MS ANYADIKE-DANES: Yes, that's what I understood. If one
17 goes over the page one sees it and he starts to give his
18 answer. He says:

19 "To start the process of getting the kidney from
20 Glasgow to Belfast and now let Professor Savage and
21 I have a conversation and then let Professor Savage ring
22 Mrs Slavin if it was Adam that was to be the patient or
23 ring the other patient."

24 In other words, the kidney is en route, being
25 accepted in that way, before it's known whether the

1 intended recipient's family are content for the child to
2 have a transplant on that occasion.

3 That's the point that I was really wishing to put to
4 you as surgeons. How are you involved in the process of
5 accepting, if you are, the kidney when the offer is
6 first made by UK Transplant, bearing in mind 1995
7 because the process might be slightly different now?

8 PROFESSOR FORSYTHE: There's quite a lot in this, I guess,
9 and I will try to do my best to navigate through it.
10 First of all, on the consent, I think it's absolutely
11 described by a number of learned counsel that it is
12 a process.

13 So if we were to go -- if any of us were to go into
14 a hospital today and have a minor surgical intervention,
15 we would expect that the consent process would be short
16 and sharp and would be chronicled by a consent form.
17 For something that is much more complex, such as
18 a transplant, you'd expect the process to be much
19 longer, and the process for me begins at the assessment
20 clinic process, which we described and talked about
21 yesterday, which was a specific discussion about the
22 need for transplantation and the fact that the
23 individual would then go on to the transplant list.
24 That is part of the consent process because it's part of
25 giving information to allow for proper consent.

1 So we have already said that we think that in this
2 circumstance that perhaps the assessment process wasn't
3 how we would normally have it.

4 Q. Understood.

5 PROFESSOR FORSYTHE: Either now or in 1995. So we already
6 have something that is slightly different from the
7 consent process that we would have said was ideal in
8 1995.

9 Then we get to the night of the call. The night of
10 the call, in 1995, our memory is that the offer would
11 be, as you correctly say, coming in as a blood group
12 offer, so you would know the details of the donor side.
13 But it would be offered perhaps for a number of
14 children, and we understand perhaps for two children.

15 Q. Yes.

16 PROFESSOR FORSYTHE: There then has to be a discussion. For
17 us there would normally be a discussion, back in 1995,
18 a discussion between surgeon and physician,
19 nephrologist, to say which of those two children would
20 be best, and there are a number of factors that go
21 through our heads as to make that allocation decision.

22 Q. Sorry, can I just interrupt. At that stage, does that
23 mean when you have the discussion with the nephrologist,
24 you always have an intended recipient?

25 PROFESSOR FORSYTHE: No. You have a number of different

1 possibilities. You can say: we do not want to accept
2 this kidney for any of our patients. Or in 1995 you
3 could say: we accept it for one patient out of maybe
4 a number of patients. Have I answered your question?

5 Q. In a way. What I'm trying to -- the way you started
6 that was to suggest that there may be a number of
7 patients who you think are at that stage suitable for
8 transplant, their state of health, whatever it is that's
9 come out of your regular meetings, and so a kidney is
10 offered. What I'm trying to work out, is your first
11 choice the sort of thing that I think Mr Keane was
12 talking about, he just looks effectively at the bald
13 details of the kidney and says: is that a kidney we want
14 to have in Belfast? And then later on, there is
15 a knowledge as to who that kidney might be intended for,
16 and then we think: is that an appropriate kidney for
17 those categories of people?

18 PROFESSOR FORSYTHE: That would not be the way I would put
19 it, because what you're wanting to do is to match
20 details between the donor and the recipient, and those
21 details are dependent on that combination.

22 Q. So you would --

23 PROFESSOR FORSYTHE: I would not accept a kidney without
24 knowing to whom the kidney was intended.

25 Q. That was what I meant. You don't accept in abstract?

1 PROFESSOR FORSYTHE: Correct.

2 Q. If you could continue then.

3 PROFESSOR FORSYTHE: At that point there would then be

4 a discussion between physician and surgeon to decide

5 which of the potential recipients was the ideal. And

6 then it may well be that the physician will either know

7 that the patient is well and there are no problems to

8 them being called in, or it may be that the phone call

9 that you talked about, in this case with Adam's mother,

10 would establish that nothing had happened in the interim

11 since he was last seen and that he was well enough to

12 come in, and that everyone wanted to go ahead with the

13 transplant. At that point we have surgeons signed up,

14 we have physicians signed up, we have the family signed

15 up. We have a go.

16 Q. Is that when you accept the kidney from UK Transplant?

17 PROFESSOR FORSYTHE: Correct.

18 Q. So you don't have a situation where a kidney is sent on

19 its way from Glasgow to Belfast without knowing whether

20 the intended recipient or intended recipient's families

21 are going to allow their children to have a transplant

22 at that stage?

23 PROFESSOR FORSYTHE: That's correct. But I would accept

24 also that the family don't know all of the details.

25 Q. Oh yes.

1 PROFESSOR FORSYTHE: They need to come in and be given
2 further details. They have accepted that in principle,
3 in the abstract, the transplantation is the right thing
4 for the patient or -- yes.

5 Q. It's a different sort of acceptance or consent from the
6 literal taking of it when they sign their form?

7 PROFESSOR FORSYTHE: Exactly, it's part of the process that
8 I described.

9 Q. Thank you. I just wanted some clarification on that.

10 MR FORTUNE: Sir, it will be subject to a caveat, as
11 Mr Forsythe would no doubt agree, subject to tissue
12 typing in Belfast.

13 PROFESSOR FORSYTHE: That's not strictly correct. The
14 tissue typing of the donor is known ahead of time, the
15 tissue typing of the recipient is known ahead of time,
16 and the match between those two helps in the decision
17 that I was talking about, that I've already alluded to,
18 between the surgeon and physician as to whether to
19 accept that kidney or not.

20 I think the thing that you are referring to is when
21 the kidney arrives into Belfast, there has to then be
22 a further cross-match test, which then takes about four
23 hours, and when that cross-match test is negative, that
24 means the procedure can go ahead. When the cross-match
25 test is negative, you then have a final go. You have

1 a final go to transplant. But go to get the kidney to
2 come to Belfast does not rely obviously on that test.

3 MR FORTUNE: The cross-match has also been referred to as
4 tissue typing.

5 PROFESSOR FORSYTHE: That's incorrect. That's an incorrect
6 nomenclature. Tissue typing is the act of defining what
7 tissue type you have versus what tissue type I have.
8 The cross-match test is a different test.

9 THE CHAIRMAN: That helps.

10 MR FORTUNE: Thank you for that clarification, but up until
11 now all of us had been using the term tissue typing.

12 MS ANYADIKE-DANES: Yes. What is the cross-match test?

13 PROFESSOR FORSYTHE: The cross-match test is a test
14 between -- you take the serum from the recipient, which
15 contains antibodies, potentially, and you take tissue
16 from the donor so you can get the cells from the donor.
17 You take cells and you take serum and you mix them in
18 a certain laboratory method, and if they clump, then
19 that is a positive test, indicating that there are
20 antibodies that may increase the chance of rejection
21 in the recipient.

22 Q. So that's what you're looking for? Although their
23 tissue types match, and you'll know that from the kidney
24 transplant form, what you're wanting to see is whether
25 that particular donor, and this particular recipient,

1 are likely to be sufficiently incompatible that there's
2 a risk of rejection of the organ?

3 PROFESSOR FORSYTHE: Correct. The definition of antibodies
4 in the individual has developed quite a lot since 1995,
5 but in 1995 the cross-match test was a very important
6 test to be performed in the way that you have described.
7 But that cross-match test is not tissue typing. That
8 cross-match test is a separate test, looking for
9 antibodies in the recipient.

10 Q. Thank you very much.

11 MR FORTUNE: Looking for what are called alleles?

12 PROFESSOR FORSYTHE: No, you're not, you're looking for
13 antibodies. Alleles are a subset of the antigens on the
14 cells. So you're looking for -- as I said, if you mix
15 cells and serum, you are looking for the antibodies and
16 you get clumping of the cells. If, on the other hand,
17 you get absence of clumping it's a negative test, and
18 then you're able to go ahead with the transplant.

19 THE CHAIRMAN: Which all emphasises just how much is
20 involved in the whole process?

21 PROFESSOR FORSYTHE: I've often said that transplantation is
22 the best example of multidisciplinary care and
23 absolutely as you say.

24 MS ANYADIKE-DANES: Thank you very much.

25 Mr Keane has expressed the view and so did

1 Professor Koffman that the age of the donor and,
2 Mr Keane went on to say, actually the cause of death of
3 the donor, which made the kidney ideal for Adam. He
4 said the donor was extremely favourable, I think is the
5 way Professor Koffman viewed it.

6 Would you agree with that?

7 PROFESSOR FORSYTHE: In some aspects yes, in some aspects
8 no. I indicated that as the surgeon and physician speak
9 in the middle of the night when the call comes through
10 there are a number of factors that are going through
11 your head. Some of those factors referred to by
12 Geoff Koffman are favourable and indeed extremely
13 favourable. The age of the donor is extremely
14 favourable, 16-year-old. The nature of the way in which
15 donation occurred is favourable. There are some things
16 that are not so favourable. There was the match.

17 Q. You mean the fact that it was a half match?

18 PROFESSOR FORSYTHE: The fact that it was a half match, as
19 we defined in our report. So it wasn't a full-house
20 match and it wasn't -- there are different levels of
21 match within the whole system and it wasn't the best
22 form of match. So that wasn't so favourable.

23 Q. Can I just pause there. You have talked about different
24 levels of match. Is that something that Mr Keane and,
25 for that matter, Professor Savage would have had

1 communicated to them before the kidney actually arrived?
2 You can work out the half match from looking at the
3 form, but would you be able to work out the type of half
4 match, whether it was a good half match or a not good
5 half match?

6 PROFESSOR FORSYTHE: It's not the different types of half
7 match, it's I guess the priority of how good a match
8 that represents. Yes, you would be able to know that.
9 Each thing that defines us in terms of tissue typing, as
10 we were discussing earlier on, on the surface of all of
11 our cells there are proteins, they are labelled as pairs
12 inherited from our parents of A, B and DR. So you have
13 a number -- two numbers for A, two numbers for B and two
14 numbers for DR. Therefore, you can have the best match,
15 which is a six out of six or full-house match. You can
16 have -- the worst form of match would be no match at
17 all.

18 Q. Sorry, Professor Forsythe, let me pull the form up. It
19 may be easier to explain it. While I'm saying that,
20 could I apologise to having referred to you as
21 Mr Forsythe all through yesterday. 058-009-025 is the
22 start of it. Where one actually sees the match is --

23 MR FORTUNE: 559-006-012, in the writing of Dr O'Connor.

24 PROFESSOR FORSYTHE: That illustrates it nicely. So each of
25 us have two numbers attached to A, two numbers attached

1 to B and two numbers attached to DR inherited from our
2 parents. You'll see that in Adam's case there was
3 a match of each number, one number at each of A, B and
4 DR. So that, therefore, produces a half match instead
5 of the possible best of being a six out of six match, we
6 end up with a three out of six or a half match.

7 Now, in 1995, the matching was really still
8 considered very important indeed. It's still considered
9 important now, but with you modern immunosuppressants
10 we're less worried about the match now than we were
11 then.

12 Q. Can I pause a minute. This has gone on a little bit
13 further than I wanted. What I wanted to know is: the
14 information they would have had about how good a match
15 at that stage the kidney was when they first accepted it
16 and it was sent on its way to Belfast, all they would
17 have had at that stage is the information on the
18 transplant form. Can you tell from that form how good
19 a match this might be?

20 PROFESSOR FORSYTHE: You will pick up that it is a half
21 match and what I was trying to point out was that it is
22 not obviously as good as a six out of six match, but
23 what I was going on to say was that actually in terms of
24 prediction of rejection and prediction of success of the
25 transplant, DR is more important than B, is more

1 important than A. So there is nuance here as well. So
2 actually, at our stage in Newcastle when I was involved
3 in 1995, a zero DR mismatch, in other words a complete
4 match for DR, was seen to be very important.

5 Q. Even if you had a half match on the others?

6 PROFESSOR FORSYTHE: Well, you wouldn't have a half match,
7 but you might have a three out of six match. But that
8 would be just on the As and Bs. So I'm saying there's
9 a nuance even within that half match.

10 Q. I understand.

11 PROFESSOR FORSYTHE: So that is another factor that you take
12 into account in the middle of the night discussion
13 between surgeon and physician. So that is something
14 that I was trying to point out was not extremely
15 favourable.

16 Q. Okay. What other factor would you have known then in
17 advance of the actual -- did we call it the cross-match
18 exercise?

19 PROFESSOR FORSYTHE: The two factors that also would have
20 been known at the time would have been the potential
21 cold ischaemic time and you would work that out in your
22 head by the time the kidney gets to here, by the time we
23 do our cross-match test, what's the likely time of the
24 transplant? And so, therefore, how many hours will
25 there be on the clock at that stage. So the cold

1 ischaemic time will come into your head and that was not
2 favourable.

3 Q. Yes.

4 THE CHAIRMAN: I think there's some debate about how
5 unfavourable it was. Is there a bit of this which is
6 that for kidneys which are coming to Northern Ireland,
7 we might sometimes have to wait a little bit longer
8 because there is additional transport involved?

9 PROFESSOR FORSYTHE: I think that's right, but then I work
10 now in Scotland and have for the last number of years,
11 and that's far away from the main base of population in
12 the rest of the UK. So we have similar problems. It is
13 something that you have to factor in.

14 THE CHAIRMAN: If you accept in Scotland a donation from,
15 say, the Greater London area, is that flown up?

16 PROFESSOR FORSYTHE: It is.

17 THE CHAIRMAN: So the fact that this kidney was put on
18 a plane isn't unique to Belfast because there's a sea
19 between us?

20 PROFESSOR FORSYTHE: No, we would try to move it as quickly
21 as possible.

22 THE CHAIRMAN: Okay.

23 MS ANYADIKE-DANES: Mr Rigg?

24 MR RIGG: Can I just add one further comment? I think one
25 bit of evidence that we've not been able to see because

1 I think it's too far away is why the offer was actually
2 made quite late in the day. We know that the time the
3 kidney was -- 01.42, was the time. Yet it sounds as
4 though the offer wasn't made until late in the day the
5 following day, which is not clear why that is. It may
6 be that the kidney was offered to somebody else first.

7 Q. That's a possibility. We've tried to identify that.
8 But that's a possibility.

9 MR RIGG: I think it is just worth recognising that the
10 ischaemic time was already 16 hours by the time the
11 offer was made.

12 PROFESSOR FORSYTHE: It's an important point from my
13 colleague, because in answer to the Chairman, obviously
14 the first offer could have been happening instead at
15 2 o'clock in the morning following the donation rather
16 than some time in the evening on the next day.

17 THE CHAIRMAN: Yes.

18 MS ANYADIKE-DANES: So the cold ischaemic time is another of
19 the slight downsides, if I can put it that way, to --

20 PROFESSOR FORSYTHE: The final one is the fact that we knew
21 the anatomy of this wasn't ideal. We knew the anatomy
22 was that there were at least two arteries. That would
23 make it not -- it's not an absolute contraindication but
24 it is something that would be a factor that you would
25 take into account. So we have some favourable factors,

1 some not so favourable factors, and that then makes the
2 algorithm that gives you the final decision as to
3 whether you would accept this for a particular child or
4 not.

5 Q. Yes. Can I just ask you about that last -- we'll come
6 on to it in a minute because Mr Keane has given evidence
7 about its significance, and I think tendered also some
8 articles about that. If we go into the question of it
9 being multiple arteries. For quite a while, we didn't
10 have a very good copy, for various reasons, or at least
11 we didn't appreciate we had a good copy of the form. If
12 I could just pull up this page, which is slightly
13 better, but even this is not very clear, 058-009-027.

14 As I understand it, and please correct me if I have
15 misunderstood the process, at the time when UK
16 Transplant is making the offer this is the information
17 they have. So if you're going to be told anything about
18 the donor, the donor's circumstances, the anatomy of the
19 kidney, this is the information that's recorded; isn't
20 that right?

21 PROFESSOR FORSYTHE: Correct.

22 Q. And as we understood it, very often this information's
23 actually read out over the phone or maybe the form is
24 faxed or something, but that's the information that is
25 available upon which the first decision as to whether

1 the kidney will be accepted at all by the receiving
2 centre is made. If you look at the issue of the
3 arteries, this unfortunately isn't the very clear one.
4 But there we are. Here we go.

5 It is the clear one, thank you.

6 You can see that the number of arteries on patches
7 is three. And then right down at the bottom there's
8 some writing:

9 "Other, please specify."

10 And this is under a category called "Kidney damage".
11 Maybe that's not quite the right place for it, but in
12 any event what we're told that writing is is a question
13 mark:

14 "Third artery tied off. Plus cut off patch."

15 Now, when you had mentioned about the other slight
16 downside being the arteries on the patch, or multiple
17 arteries, I think you said, you have no idea at this
18 stage, do you, what the size of those arteries are?

19 I presume it is possible to have equal sized arteries,
20 or one main one and others rather minor and smaller and
21 so forth, but although you have some anatomical details,
22 you don't know that level of detail.

23 PROFESSOR FORSYTHE: Correct.

24 Q. Does it matter, do you have to think to yourself what
25 those actual details might be or do you just literally

1 take it as you have it here?

2 PROFESSOR FORSYTHE: You take the information and you trust
3 the information, but only to a certain extent, because
4 the retrieval process is a very busy process, often in
5 a foreign theatre and, therefore, you want to --
6 you will acknowledge that that kidney, when it arrives,
7 is something that you would want to have a look at,
8 check, and make your own assessment of this information
9 that has been presented to you.

10 Q. Does the fact that there are actually three arteries on
11 the patch, the third of which may have been tied off,
12 make any difference to the level of -- to your thinking
13 about whether this is a downside?

14 MR MILLAR: I think, sir, it's important to draw the
15 witness's attention on this very poor copy to the
16 question mark which precedes --

17 MS ANYADIKE-DANES: I did say "question mark". We'll check
18 the transcript.

19 MR MILLAR: What you have, you have the note above making it
20 clear that there are two arteries, then I don't
21 personally quite understand how, if there are two
22 arteries, and that's a total number of arteries, you can
23 then have three on the patch. Then you've got the
24 question mark about whether there's a third. So the
25 information seems to be rather confusing.

1 MS ANYADIKE-DANES: Maybe a surgeon might be able to
2 interpret it.

3 THE CHAIRMAN: Is that information unclear or confusing in
4 any way?

5 PROFESSOR FORSYTHE: It is slightly unclear. I would
6 interpret it as there being two main arteries and three
7 arteries on the patch, and there is the possibility that
8 the third one has been tied. So all that information is
9 relevant to me. All that information goes into trying
10 to make a decision as to whether or not you're going to
11 accept this kidney. And I think for me, in 1995, that
12 would have been particularly relevant in accepting the
13 kidney for a child.

14 MS ANYADIKE-DANES: Now, you say for a child. Why? What's
15 the significance of it being a child who is the intended
16 recipient?

17 PROFESSOR FORSYTHE: It is the thing that we touched on
18 yesterday, which is that we are talking about trying to
19 get good flow to a kidney that may be slightly large,
20 through vessels that are quite small. The difficulty --
21 obviously if you have one large vessel with good flow
22 through it, that is relatively straightforward compared
23 with two or three smaller vessels.

24 Q. I understand. So a combination of those factors, the
25 good you have on the one side and the others, which are

1 disadvantageous on the other side. In 1995, facing your
2 recipient who's Adam, four years old or very nearly
3 five, what effect is all of that -- does all of that
4 have on your decision-making when you're called up
5 in the night and engaged in a discussion with
6 a nephrologist?

7 PROFESSOR FORSYTHE: So I think we said in our report we
8 agreed that when we did the assessment on the donor
9 side, as you have described, and also on the recipient
10 side, our understanding was from the evidence that has
11 been presented that Adam was doing reasonably well on
12 dialysis. If --

13 Q. Sorry to interrupt you. Is that something you would
14 want to know as part of your discussion with the
15 nephrologist?

16 PROFESSOR FORSYTHE: Yes, it is. If I was close to
17 accepting that and I was accepting that there were some
18 negative factors, as I have described, I would be
19 wanting to know, is this child doing well on dialysis,
20 as Keith Rigg mentioned yesterday, or is the child
21 struggling on dialysis? Because if there is
22 a difficulty on dialysis, that might push you towards
23 taking the possibility of the transplant further.

24 THE CHAIRMAN: Because it makes it that little bit more
25 urgent that there is a transplant?

1 PROFESSOR FORSYTHE: Correct.

2 MS ANYADIKE-DANES: Thank you. And I think what you were
3 saying yesterday was that you're looking long-term.
4 You've got a very young child who you want to have the
5 best possible chance, if I can put it that way, out of
6 this transplant. So you're wanting the best possible
7 match to give him that longest chance; is that
8 effectively it?

9 PROFESSOR FORSYTHE: Correct, and they are very difficult
10 decisions because here we have some factors which are
11 very positive, a 16-year-old kidney is something which
12 is very positive indeed for Adam. But there are some
13 negatives as well, as I've tried to describe, and so
14 overall, our decision, looking back as best we can, in
15 1995, both of us said that we would not have accepted
16 that for Adam at the time. But that is obviously us
17 looking back from a distance.

18 THE CHAIRMAN: But I think you also qualified that in your
19 report by saying that while that would be your view,
20 looking back on it, you entirely accept that there would
21 have been other surgeons who would have taken
22 a different view and who would have accepted it. I'm
23 not sure if in your world there ever is black and white,
24 but this is not a black and white decision?

25 PROFESSOR FORSYTHE: I would totally agree with that, it is

1 not a black and white decision.

2 MS ANYADIKE-DANES: I was going to ask you that point, which
3 is that you said looking back, to the best that you can,
4 that's a decision you would have made in 1995. But you
5 also have acknowledged that others might make different
6 decisions. Quite apart from having a different view as
7 to the extent of the added risk of any of these factors,
8 which I presume you can have professional differences
9 about that, what other factors might have inclined one
10 centre rather than another to accept a kidney that you,
11 in your centre, would not have accepted?

12 PROFESSOR FORSYTHE: I think the size of the centre and the
13 experience of the centre might also be important to
14 mention. I don't know whether Keith wants to take that
15 further.

16 MR RIGG: I think that's very valid. I think if you're in
17 a smaller centre where perhaps you don't do as many
18 transplants, it's perhaps increasingly important that
19 those transplants are -- that you don't take as many
20 risks. Whereas if you're in a larger centre where
21 you have gained more experience over the years you
22 perhaps are prepared to take one or two more risks.

23 Let's say you are in a centre that's doing ten
24 transplants a year, for every one failure that you have,
25 then that reduces the one-year outcome by 10 per cent.

1 If you're doing five a year, then it's 20 per cent for
2 every failure. And that reflects nationally on your
3 centre, that your results will be worse than other
4 centres comparable. So I think there is that attitude
5 in a smaller unit where you don't perhaps take as many
6 risks as in a larger unit.

7 Q. When you talk about risks, do you mean the resources
8 available to you, the expertise and the experience and
9 so forth; is that the sort of thing that you're talking
10 about?

11 MR RIGG: I think really we know with some of these adverse
12 factors that they can influence outcomes. And again, if
13 you are in a centre where you perhaps haven't had as
14 much experience in dealing with some of these adverse
15 effects, then I think you're less willing to take those
16 risks. It's part of gaining experience.

17 Q. Yes. You mean in the way that you were discussing
18 yesterday, the fact that you had got a urologist who
19 simply wasn't prepared to do paediatric renal
20 transplants because he didn't want to get into the aorta
21 graft, for example. You mean if you hadn't had that
22 kind of experience you're not comfortable in actually
23 doing it? Is that the sort of thing you're talking
24 about?

25 MR RIGG: It is. It is.

1 Q. Thank you. I wonder if you could assist us with
2 a matter in relation to the kidney itself. That is one
3 comment I think you made in your report, I think
4 reference 203-004-073, at (iv), you talk about results
5 were poorer in young children if the donors were also
6 very young.

7 Adam, of course, was a young child. The donor was
8 16. Is that a comment that has any relevance to Adam
9 himself? Is he at greater risk because of his age.

10 PROFESSOR FORSYTHE: He's at greater risk because of his
11 age, but in particular relation to this comment we are
12 talking about donors at a younger age than 16. The
13 reference, I think, is a reference saying that donors
14 under the age of five, there is an increased risk, so
15 you have a young donor under the age of five and
16 you have a young recipient, that that is the highest
17 combination of risk.

18 Q. Yes. But I had interpreted some of your reports to put
19 Adam's age as a risk factor in and of itself.

20 PROFESSOR FORSYTHE: Yes, sorry, I thought I'd made that
21 clear at the outset of that answer. I was saying that
22 Adam is at increased risk, but in relation to this
23 comment that you just asked me about, it's more to do
24 with the donor and recipient combination of risk.

25 Q. I understand. Also yesterday you had discussed the

1 likely difference between a 16-year-old adolescent's
2 kidney and an adult kidney when you were discussing live
3 donation and the implications of that. Can we just be
4 a little clearer on whether you think there is a risk
5 factor for the size of the kidney going into Adam. In
6 other words, is the difference between -- even albeit
7 it's not an adult size if that's the case, is there
8 a significance in the fact that nonetheless it was
9 a 16-year-old's kidney to go into him and he's four and
10 20 kilograms and 103 centimetres, I think is his length.

11 PROFESSOR FORSYTHE: I think I would view this kidney --
12 we'll never know the size of the 16-year-old who donated
13 the kidney because we haven't got accurate measurements
14 of it in life, if you like. But it is likely that it
15 was, as I commented yesterday, nearly adult size. So
16 for me, I would be saying if I received a 16-year-old
17 kidney in 1995, if I received a 16-year-old kidney,
18 I would be treating that as if it were an adult kidney.

19 Q. Can I help you there because I think Mr Keane has
20 provided some literature, I think I had mentioned that
21 earlier, and I think it appears at 309-009-001. That's
22 a bit difficult to see. If you go to 002, I think
23 there's a table. There we are. I think it's table 1.

24 That is seeking to address the likely differences
25 between a kidney of a 16-year-old and a kidney of

1 a person of Adam's age. It would seem to be, or at
2 least when I looked at it, if all that was correct and
3 applied to the kidney and applied to Adam, which nobody
4 will know, the difference was just about 2 centimetres.
5 How significant is that?

6 PROFESSOR FORSYTHE: I would point out that also, if you
7 look between 16.5 and 18.5, you will see that the 16.5
8 is a mean of 10.04. With a standard deviation it will
9 mean that's between 9.18 and 10.9. For a 18.5-year-old,
10 that will be -- you see there 10.8 --

11 Q. Yes.

12 PROFESSOR FORSYTHE: -- which is between 9.7 and 11.9, if
13 you put the standard deviation in. So if you look
14 at the difference between the two means for the
15 16-and-a-half-year-old and the 18-and-a-half-year-old,
16 ie the adult, that's 0.8 of a centimetre, so less than
17 a centimetre. So I would come back to my initial
18 surgically immediate view that this is a nearly adult
19 kidney.

20 Q. Thank you.

21 MR MILLAR: [Inaudible: no microphone] and
22 16-and-a-half-year-old though?

23 A. I think then we're talking --

24 MR MILLAR: [Inaudible: no microphone] standard deviations,
25 I think you'll find 0.81 of a centimetre may be the

1 difference between those two as well.

2 PROFESSOR FORSYTHE: No, I think it's more than that, it
3 isn't? It's significantly more than that. And
4 I think --

5 THE CHAIRMAN: Sorry, are you saying, Mr Millar, if you take
6 the four-and-half-year-old at 7.87 [sic] plus 0.5, that
7 will bring you close to the 16.5 at 10.04 minus 0.86?

8 MR MILLAR: You have a range, sir, for -- the mean renal
9 length for a four-and-a-half-year-old is between 7.37
10 and 8.37 if you allow for the deviation.

11 THE CHAIRMAN: You do, but --

12 MR MILLAR: One end of the scale is 7.37, and the larger
13 size is 8.37. The 16-and-a-half-year-old, the smaller
14 size, is 9.18. We do have evidence, actual evidence,
15 from Mr Keane that this was a small kidney. He did say
16 that in his evidence.

17 So if you take the smaller of the
18 16-and-a-half-year-old kidney's and the larger of the
19 four-and-a-half-year-old's kidneys and take into account
20 the actual evidence, which was that it was a small
21 kidney, you could be down to as little as 0.81.
22 Accepting, of course, that we don't have the kidney here
23 to measure it, et cetera, but looking at it perhaps
24 slightly more positively from Mr Keane's point of view.

25 MS ANYADIKE-DANES: Well, if we just deal with the evidence,

1 Mr Keane said it was a small kidney, there's absolutely
2 no evidence as to when it was measured, there's no
3 record of it. If it was a small kidney and that was
4 a significant factor, is that something that would be
5 measured or recorded or noted in some way?

6 PROFESSOR FORSYTHE: Not necessarily.

7 Q. So there's nothing. There is Mr Keane's evidence.

8 PROFESSOR FORSYTHE: To address the specific point, we're
9 talking about probabilities if we're talk talking about
10 the spectrum. Is it possible that
11 a four-and-a-half-year-old's kidney could be right up
12 towards the top end of that spectrum, so is there
13 a four-and-a-half-year-old in the world who has a kidney
14 right at the top at the end of that spectrum? Yes.

15 Is there a 16-and-a-half-year-old who may have a
16 kidney right at the bottom end of that spectrum? Yes.

17 Is there a possibility that there may be a very
18 small difference between a four-and-a-half-year-old
19 in the world and a 16-and-a-half-year-old in the world?
20 Yes.

21 Is it likely in this case? I think it is unlikely,
22 and anyway, to some extent, it's missing the point. The
23 point is that you are taking it -- it's not the
24 combination or the comparison between the kidney that
25 you're about to transplant and Adam's kidney, it's the

1 fact that you're taking a near adult kidney and putting
2 it into a small child and you're wanting to get good
3 flow to a larger kidney through small vessels, and
4 that is the challenge to the surgeon.

5 Q. In other words, the comparison between whatever might
6 have been his kidney size, which in any event wasn't
7 a normal kidney, whatever that might be and the donor's
8 kidney, is actually the wrong comparison? The point to
9 look at is where it has to go and the comparison between
10 the vessels that it has to hook up to?

11 PROFESSOR FORSYTHE: Correct. It's not a wrong comparison,
12 it is a comparison, but it is not the correct comparison
13 for assessing the surgical technique and the challenge
14 that faces you, putting a near adult kidney into a small
15 child.

16 Q. Thank you. Now, just to go back to where you were about
17 the multiple arteries before we went into the size of
18 the kidney. Mr Keane didn't consider that that
19 constituted a risk, and I think we find that at --
20 I think it's on 24 April, the transcript at page 64.

21 I think it starts at line 15. It was put to him
22 directly:

23 "Multiple renal arteries are known to increase the
24 risk of thrombosis in a transplant kidney."

25 And he was asked whether he would accept that. He

1 said he didn't in 1995. And then he went on to deal
2 with the literature that had been provided.

3 Firstly, his comment was:

4 "All that literature post-dates 1995."

5 If one goes over the page to 65, and then ultimately
6 the question is at line 9:

7 "Would you have thought at that time of the
8 increased risk of thrombosis in the transplant kidney?"

9 This is about multiple arteries. And he says:

10 "No."

11 His answer is really to be found at line 15:

12 "The issue is the patch. I would have been
13 concerned if there wasn't a patch, but the presence of
14 the patch, as I was trained, was actually the critical
15 issue."

16 And so if there was a patch but multiple arteries,
17 he did not regard that as being a risk. I wonder if you
18 could comment on that.

19 MR RIGG: Perhaps just going back to the literature, I think
20 it's -- I don't want to get into a comparison of
21 literature. I think it is right that there were papers
22 produced prior to 1995. Certainly in one of those
23 papers it excludes children. The other paper, it isn't
24 clear whether children are included.

25 I think we would certainly agree that for adults

1 there is probably no increased risk with multiple
2 arteries, and that there are multiple ways in which you
3 can join the arteries.

4 I think in children, as we've explained, because of
5 the lower flows through smaller vessels, that's why
6 there would be more concern. Certainly in 1995, in my
7 unit, both the nephrologists and the surgeons were
8 concerned in putting a kidney with multiple vessels into
9 a small child, and we would always turn that sort of
10 kidney down because of what we perceived were the
11 increased risks. I accept that at that stage there was
12 probably no literature to support that, but it was that
13 feeling that with smaller vessels, reduced flow, that
14 that was a significant risk.

15 Q. Thank you.

16 MR MILLAR: I think actually part of it was the fact that
17 the two arteries were on a patch. Was that a factor?

18 MR RIGG: I think again there are different ways of joining
19 vessels. Again, from a personal point of view, I accept
20 that one of those papers did suggest having the
21 kidneys -- sorry, the arteries on a patch was
22 preferable. I think that is very much the case in an
23 adult. The problem with having a patch and putting that
24 on to a child's artery is that you need a much bigger
25 hole in the artery in which to suture that in. My

1 practice then, as it is now, with children's
2 transplants, is that I would often take the artery off
3 the patch because that actually makes it easier to do
4 the anastomosis, to do the join. Certainly with
5 a longer patch, that does require a much longer cut and
6 hole in the artery.

7 MR MILLAR: Sir, if while we're on this point, it might
8 avoid coming back to it, but you can reduce of the size
9 of the patch surgically?

10 MR RIGG: You can reduce the size of the patch surgically,
11 but it is still a much larger hole even having done
12 that.

13 THE CHAIRMAN: In a sense, this almost illustrates the pros
14 and cons of whether or not you would accept this kidney
15 in the first place? Your position is neither of you
16 would have accepted it in 1995, but you can understand
17 why others would have. And what you're having put to
18 you is Mr Keane's reasoning for saying, with
19 Professor Savage, yes, this was acceptable. And to put
20 it crudely, you are maybe a bit iffy about that but
21 there's more difficult and fundamental issues in the
22 inquiry than that particular decision.

23 PROFESSOR FORSYTHE: I think that's exactly right.
24 Certainly for an adult I would have no hesitation
25 accepting that kidney, but for a child I would have

1 reservations.

2 THE CHAIRMAN: Thank you.

3 MS ANYADIKE-DANES: Would you accept it now in your centre?

4 MR RIGG: No. We would say exactly the same, that multiple
5 arteries in a small child associated with a cold
6 ischaemic time of 24 hours are reasons that we would say
7 no. But I accept that there may be other larger centres
8 who would accept that.

9 Q. Yes. Just so that the chairman has it, the article that
10 was being referred to, without giving any reference, is
11 to be found at 309-006-002.

12 I wonder if we can move to the -- because you're
13 sort of in there, on the level of discussion that should
14 happen between the various clinicians who are going to
15 be involved in the transplant, should it ultimately
16 prove to be one that is acceptable for any of the
17 children that they have in mind. We understand there
18 were two. Adam was one.

19 I wonder if we could go to the discussion with the
20 person who's going to be assisting Mr Keane, who's
21 Mr Brown. He's a consultant paediatric surgeon. He
22 hasn't done any transplant surgery, but he's an
23 experienced paediatric surgeon.

24 You've read the transcript, so you will see that
25 there is quite a bit of evidence as to exactly why

1 he was brought in, whether he was brought in because
2 he was interested, because he had operated on Adam
3 previously. Whether he was brought in because he had
4 that knowledge, it was thought that he might be able to
5 contribute something to the decision-making of the
6 surgical approach or something of that sort. Or whether
7 he happened to be somebody who was experienced and on
8 hand and that would be helpful to Mr Keane. And I think
9 the final thing is he might have had some sort of
10 professional interest perhaps, and there might be some
11 benefit in extending the knowledge of -- or experience
12 of those in the Children's Hospital towards transplants
13 because, as you heard yesterday, the surgeons actually
14 were all coming from the Belfast City Hospital, which is
15 not only a different hospital on a different site, but
16 actually it's in a different trust.

17 So there are all those sorts of issues, and it's not
18 entirely clear from the evidence, and the chairman will
19 determine it ultimately, exactly why, should it be
20 relevant to do so, Mr Brown was brought into the
21 process. But anyway he was, and he was a consultant
22 paediatric surgeon.

23 So the point I want to put to you is, what sort of
24 discussion, if any, do you think there ought to have
25 been before surgery between Mr Keane, who's going to

1 actually perform the transplant surgery, and Mr Brown,
2 who's going to assist him?

3 MR RIGG: I think the important thing is that Mr Keane would
4 have wanted a surgical assistant who was experienced at
5 being a surgical assistant, and I recall from his oral
6 evidence that that could either have been his own senior
7 registrars or it could have been the consultant
8 paediatric surgeon who was on call, who happened to be
9 Mr Brown.

10 I think there often is advantage in having an
11 assistant who is familiar in dealing with young children
12 if you are operating on a young child. So if I was
13 in that situation, I think I would have chosen Mr Brown
14 as probably being the most appropriate assistant,
15 because he was familiar with operating in children, even
16 though he had had no previous experience of
17 transplantation, but he would have been experienced in
18 dealing with small children, would have been able to do
19 the necessary retraction and assistance.

20 Q. That being the case, in 1995 -- because it might be
21 different now, but in 1995, what is the sort of exchange
22 of information that you would wish to have with him
23 before you actually started the transplant?

24 MR RIGG: I think in 1995, I would have just -- we would
25 have agreed the time that we were starting and what time

1 I would have wanted him to be in theatre. That probably
2 would have been the only discussion we had beforehand.
3 When he came to theatre I would ask: have you seen this
4 operation before? And if not, that means you'd probably
5 explain what you were to going to do, but it wouldn't be
6 any greater detail than that.

7 Q. If you knew or were being told that one of the benefits
8 to you for having Mr Brown assist you was because he had
9 carried out -- as we saw yesterday with that schedule of
10 surgical procedures, that he had carried out quite
11 extensive work in the area where you were going to be
12 conducting the transplant on Adam, if you knew that is
13 that a relevant thing to be discussing with him?

14 MR RIGG: I think it's certainly an added bonus. Whether
15 you have that discussion before the operation or at the
16 beginning of the operation I don't think it matters
17 either way, but if somebody has actually done those
18 operations on the patient, then that's actually very
19 helpful so that you know where things are likely to be.
20 And of particular relevance it was what the bladder was
21 like to have looked like and where the ureters were
22 likely to have been, and also where the scarring would
23 also have been.

24 Q. Yes. Irrespective of when you would have had it, would
25 you have had a discussion like that?

1 MR RIGG: Yes.

2 Q. How significant might it be to have a discussion like
3 that?

4 MR RIGG: I think it would be of relevance to help you do
5 the operation, but I don't think it would need to have
6 been a very detailed discussion. Just an understanding
7 that here was a surgeon who was assisting you, who had
8 already operated on the patient and who knew the history
9 themselves as well.

10 Q. I think you said that one of the things you would do is
11 you would ask him whether he had done anything like that
12 before and you would run him through the -- I don't want
13 to put words into your mouth. Would you take him
14 through what you were intending to do?

15 MR RIGG: I would just cover the principles of what the
16 operation involved and I wouldn't go through in any
17 great detail. I mean, I think it's always helpful for
18 the assistant to know what you are going to do, what the
19 broad steps of the process are, but I don't think it
20 needs to be of great detail.

21 Q. Why would you do that at all?

22 MR RIGG: I think just because of interest. I think
23 surgeons like to know what they're doing, it helps to
24 engage your assistant so that they know what's
25 happening.

1 Q. Well, is the information of any use to him being an
2 assistant to you or is it simply a professional courtesy
3 or just to pique his professional interest?

4 MR RIGG: I suspect it's a bit of both.

5 Q. Does it help him in his role of assisting you that he's
6 had that, however brief it is, a run-through of what you
7 intend too?

8 MR RIGG: I think it does help him, yes.

9 Q. Thank you. I think we can actually find out what
10 Mr Keane was discussing with Mr Brown. It's still in
11 the transcript for 24 April, and it starts at page 89.

12 I approached this with a bit of caution because
13 there was a bit of an issue of exactly what it was that
14 he was communicating with Mr Brown and not all of this
15 is necessarily -- in fact not all of it is accepted.

16 In any event, his view of it starts at line 15,
17 really. Also the other thing I should say is it's not
18 clear how well Mr Keane actually remembers any of this
19 and whether he's simply indicating what he thinks he
20 might have done or must have done or would have done.
21 So there's a bit of caution about how one interprets it.

22 If one were to take that as what he was certainly
23 intending to do, he really is not discussing with him
24 the surgery, he says:

25 "I may have given him a tutorial. I wouldn't have

1 in any way felt that I needed to ask Mr Brown anything
2 about the procedure. I wouldn't have expected Mr Brown
3 to have any knowledge at all, really, about what I was
4 about to do."

5 Then I ask him about Mr Brown bringing his own
6 knowledge:

7 "Oh yes, we did discuss Adam from Mr Brown's
8 perspective. I had no discussion with the surgical
9 aspects other than myself. I knew what I was doing."

10 And then going on down:

11 "Mr Brown's, as I understood it -- I can't recall --
12 had operated on Adam as a young child. And the two
13 particular things that I would have looked for and
14 discussed and looked at the notes with Mr Brown would
15 have been the two operations which referred to my
16 speciality and the potential impact of those on Adam's
17 now to be transplant."

18 One is the re-implant and the
19 transuretero-ureterostomy:

20 "So we would have discussed that, but I can't
21 recall. The particular thing I would have been
22 interested in was: had Mr Brown drawn an anatomical
23 diagram of how that operation went?"

24 And then going on down to line 13:

25 "Prior to the surgery I believe I would also have

1 spoken with Mr Brown. I am unable to recall specific
2 details. Mr Brown was assisting during the transplant
3 operation and therefore it is likely that I would have
4 spoken to him about Adam's case and the timing of the
5 surgery."

6 So it's not entirely clear what was being discussed
7 between them. The one thing that is clear is that none
8 of it was recorded anywhere.

9 Can we just deal with that? During this process of
10 from the offer of the kidney right up until really the
11 end of the surgery, a number of people have a number of
12 discussions with each other about various things, very
13 little of that is recorded, but in 1995 how much of
14 those sorts of discussions, whether it's between the two
15 of you, you know, you as a surgeon, your surgical
16 assistant or between you and the nephrologist or, for
17 that matter, you and the anaesthetist. How much of that
18 would you have recorded anywhere?

19 MR RIGG: I suspect none of it in 1995.

20 Q. Would you record any of it now?

21 MR RIGG: Now we have a -- we use the WHO surgical checklist
22 before the operation and that's a tick box that would go
23 through a number of these factors, so it would pick out
24 whether there are any particular surgical factors.
25 That's in the process of being introduced throughout the

1 NHS.

2 Q. And in terms of from what we might glean as to what
3 might have been the discussion between Mr Keane and
4 Mr Brown, is there anything of surprise to you about the
5 sort of things he's mentioning?

6 MR RIGG: No, I don't think there are. I think there were
7 the two factors, one is the fact that he's there as an
8 assistant, and the second thing is that he's there
9 having already operated on Adam and, therefore, has
10 a bit of knowledge about what he has done before.

11 Q. Now that you have said that about him being an
12 assistant, I wonder if I can ask you. What actually is
13 the role of the assistant in paediatric renal transplant
14 operation?

15 MR RIGG: I think the role of the assistant is the same in
16 whatever operation you're having done. It's to provide
17 help to the surgeon, and usually what that means in
18 practice, it will be holding the retractors, which are
19 the instruments that move the tissues out of the way, it
20 will be to cut the sutures and, really, it's to do what
21 the lead surgeon is asking you to do to help the
22 exposure, to make the operation run more smoothly.

23 If you have a more senior trainee, then sometimes
24 they may take on parts of the operation, but I think we
25 don't know what happened in Adam's case and certainly

1 from Mr Keane's oral evidence, Mr Keane did all of the
2 operation apart from the bit at the end.

3 Q. Yes. And as that's going on and you are providing that
4 assistance, what sort of discussion happens between the
5 surgeon and the assistant? I'm quite sure it's
6 a personal thing and people have their own styles, but
7 for the purposes of ensuring that things go as smoothly
8 as they can, what's the level of discussion that there
9 at least should be?

10 MR RIGG: Sometimes there's absolutely no discussion and
11 it's the surgeon moving the hands or placing the
12 retractor and asking the assistant to hold it in that
13 particular place. Sometimes it may be a more detailed
14 explanation of what the procedure's going to involve,
15 but it will still be, you know, the surgeon either --
16 well, placing the retractor and asking their assistant
17 to hold it or it may be asking the assistant to cut the
18 suture.

19 Q. Does it make any difference if they have no real
20 experience of working together?

21 MR RIGG: No, and I think often that's the situation. It
22 obviously is helpful if you have an assistant who you're
23 used to working with, but in the emergency situation,
24 out of hours, that is often a luxury and you often will
25 have another assistant, and in those situations it's far

1 more important that you have an experienced assistant
2 rather than someone who's had no experience of theatre
3 whatsoever.

4 Q. I understand.

5 THE CHAIRMAN: In essence, it is the surgeon who is
6 overwhelmingly responsible rather than the assistant?

7 MR RIGG: Entirely, yes.

8 THE CHAIRMAN: Thank you.

9 MS ANYADIKE-DANES: In fact, for every part of the surgery?

10 MR RIGG: Yes.

11 Q. Now, should the surgeon leave, as happened here, and
12 there is an element of the surgical work, if I can put
13 it that way, neutrally, that still has to be done, who
14 has overall responsibility? Does it remain the lead
15 surgeon because the surgery was his responsibility, or
16 is it devolved to the person who's actually carrying out
17 the task?

18 MR RIGG: The responsibility remains with the lead surgeon,
19 but if they do have to leave early for whatever reason,
20 then they need to ensure that the assistant is competent
21 to do the bit of the procedure that is being left for
22 them to do.

23 Q. But as a surgeon themselves, the assistant, when they
24 are carrying out the task, what responsibility do they
25 have even if the overall responsibility is the

1 surgeon's? Do they have any responsibility at all?

2 MR RIGG: Well, they will have responsibility because
3 they're being left to do that particular part of the
4 operation.

5 Q. Yes, thank you. I wonder if I might go back to some
6 matters that you raised in relation to ischaemic time.
7 We talked about it when you were discussing the factors
8 that you would take into consideration as to whether you
9 would or would not have been prepared to accept the
10 kidney. Mr Keane has expressed some views about that.
11 I think we can see that on the transcript for the 23rd
12 and it starts at 156 but it ranges.

13 At 156, line 9, what Mr Keane is discussing there is
14 the pressure to make the decision, because at the time
15 the kidney is being offered to Belfast, at that time
16 people appreciate that what he's -- he called it
17 a 16-hour kidney, so it's got some hours on the clock,
18 and he was discussing there the pressure to make
19 a decision: are we going to accept it or are we not? So
20 that's what he's talking about there.

21 But then he goes on to -- I think it's page 158 at
22 line 16, he says, which is, I think, where the chairman
23 has intervened and asked and he says:

24 "You're never going to get a kidney under 18 hours
25 but he would get one in the next group of 18 to

1 36 hours."

2 Now, in terms of what he means by that group, that's
3 something he goes on to develop in his evidence on the
4 next day, and that is at page 33 of the 24th, and it
5 starts at line 22.

6 He is discussing ischaemic time, and he says in 1995
7 he said it was -- he was taught that it was divided into
8 three groups, 18 hours, 36 hours and greater than
9 36 hours. And over the page he goes on to talk about
10 the implications for whichever group the offered kidney
11 is in.

12 Is that a way of classifying ischaemic time that you
13 recognise or as at 1995?

14 PROFESSOR FORSYTHE: Neither of us recognise that grouping.

15 Q. Are there categories in that way or is it a continuum?

16 PROFESSOR FORSYTHE: It's a continuum. I think at that
17 time, I think we feel that we had in mind, as I think
18 Professor Savage has said in his evidence, that it was
19 either under 24 hours or over 24 hours became the sort
20 of cut-off that you had in mind.

21 Q. Yes, it's fair to say that Professor Savage expressed
22 his concerns both in his own witness statement and his
23 evidence about the ischaemic time. I think he said that
24 ultimately he deferred to the surgeons and the
25 anaesthetists because of their need to rest. And we

1 find that from evidence of 17 April -- I'm not going to
2 take to you it -- at page 143.

3 It's also in his witness statements, both his third
4 witness statement, I think, is where he really talks
5 about it, and without calling it up, if you just give
6 you his view and you can see whether this accords more
7 with your own view.

8 He said at 002/3 at page 24 in answer to question
9 20 (j):

10 "Cold ischaemic time increased the risk of Adam's
11 transplant surgery being unsuccessful inasmuch as there
12 was likely to be a prolonged period of recovery from
13 acute tubular necrosis and this was widely recognised
14 in the literature."

15 In fact I think he indicated that if the decision
16 had been his and his alone, then he really would have
17 wanted Adam's transplant surgery to happen in the early
18 hours of the morning?

19 PROFESSOR FORSYTHE: I think something that's probably worth
20 underlining is that, as has been said on a number of
21 occasions, the increase in cold ischaemic time is
22 well-established, I think even in 1995, as being more
23 likely to produce delayed graft function, a kidney that
24 goes to sleep for a while because it doesn't like the
25 fact it hasn't had blood supply for a while. It will

1 ultimately likely work, but it is a problem to maintain
2 the patient immediately following the transplant
3 procedure. In adult patients that's not a major
4 difficulty, we can just dialyse the patient. With
5 a child that becomes more difficult because you cannot
6 necessarily perform the peritoneal dialysis that has
7 been keeping them going up until that time and,
8 therefore, you have to look at other forms of dialysis,
9 which are far more problematic in a young child.

10 So getting primary function in a paediatric
11 transplant is hugely advantageous in terms of the
12 management of the patient. So it's not just the
13 ultimate survival of the transplant, it's also the
14 management of the patient in the immediate
15 post-operative phase. Plus the fact, actually, that
16 I think even in 1995 we did know that there was a link
17 also between delayed graft function and survival. And
18 remember yesterday, we were talking about that in
19 a child we're looking for not just five or ten years of
20 survival, we're hoping for many years of survival of
21 that kidney if we can.

22 Q. Yes. I think some of the literature that we received
23 from Mr Keane -- and maybe also from yourself -- talks
24 in terms of the survival for one year or so, and so
25 they're looking at those figures and predicting there's

1 a very high level of survival for one year. I take it
2 that's not the sort of thing that you would have
3 considered to be an appropriate way of looking at Adam,
4 you'd be wanting something far more long-term than that?

5 PROFESSOR FORSYTHE: I think we would. I think I would also
6 accept, though, that in 1992 paediatric transplantation
7 was still itself a fairly young speciality. And so
8 I think we looked up in the BAPN report that you
9 furnished us with from 1995 that there were 102
10 transplants performed in children in 1992 across the UK
11 and only 15 of those were in the less than five age
12 group. So we're building up experience very slowly
13 there and, therefore, it is difficult to build up that
14 cumulative experience and predict long-term.

15 However, those who were involved in that grouping in
16 nephrology of children in transplant surgery of children
17 around that time, it is our memory that we were trying
18 to, as Professor Savage has said, avoid prolonged cold
19 ischaemic times, both for delayed graft function reasons
20 and also for survival reasons.

21 Q. Thank you. Mr Chairman, I was going to go on to deal
22 with the issue of consent in the sense that my learned
23 friend Mr Millar indicated, not the process of it but
24 just prior to the surgery. I'm looking at the clock.
25 I'm not sure if you would consider --

1 THE CHAIRMAN: Yes, we'll give the stenographer a break.

2 Can we try to sit at 25 past maybe more promptly than we
3 sometimes do and then go on until 1 o'clock?

4 MS ANYADIKE-DANES: Yes, of course.

5 (11.13 am)

6 (A short break)

7 (11.30 am)

8 MS ANYADIKE-DANES: I've been asked to clarify some things
9 with you in relation to cold ischaemic time. You will
10 probably appreciate that in the context of this case for
11 some -- well, for many -- the whole issue of cold and
12 sometimes warm ischaemic time is very important. So
13 people want to be sure they actually understand what
14 you're saying and the basis of what you're saying.

15 If I take you back to your point, I had put to you
16 Mr Keane's way of categorising the ischaemic time in
17 different groups and you had said that neither of you
18 actually recognise those groups. He has provided some
19 literature, which I think you've seen, or at least it
20 has been provided to you, the first of which can be
21 found at 309-001-001.

22 It's called "Cold ischaemia and outcome in 17,937
23 cadaveric kidney transplants".

24 That article is dated the beginning of 1995, and if
25 we can go to 309-001-002 of it, you can see in the

1 bottom right-hand corner there's a table 1, and the data
2 is analysed in relation to those samples.

3 Then if one sees "Duration of preservation", and you
4 can see that they have actually four groups there. The
5 first group is up to 16 hours, the second is between 16
6 and 32, the third is between 32 and 48, and then there's
7 a group that is over 48 hours.

8 Is that a classification that you recognise in 1995?

9 PROFESSOR FORSYTHE: Not particularly, no. I mean, it is
10 obviously the way they have grouped the different levels
11 of standard of preservation at the time. But I think
12 there are -- if we trawl the literature we'd find a huge
13 number of different articles about cold ischaemic time,
14 and this is one where they have defined the duration of
15 preservation in those groupings, but we'd probably find
16 quite a number of different classifications in different
17 papers.

18 Q. At the risk of starting that hunt, I wonder if I can put
19 to you another paper that was in that same group.

20 I don't know whether it came from us or whether it came
21 from Mr Keane, but certainly it was in the group that
22 was provided. That's to be found at 309-003-001, and
23 this is a 35-year study from the University of
24 Heidelberg. That study spans 1967 to 2003, so well and
25 true covers the period of Adam's own surgery.

1 Without going all the way through it, if one goes to
2 page 309-003-005, then about two-thirds of the way down
3 you see a paragraph that says:

4 "It has been shown ..."

5 This is in the discussion of their results:

6 "It has been shown that an increase of each hour to
7 the cold ischaemic time causes amplifying by 4 per cent
8 of the risk of graft failure at three months."

9 Then they talk about the surgical point of view:

10 "Attention to should be paid when using an adult
11 kidney in a child."

12 Then they talk also about other matters in relation
13 to transplant, but one of the things that they do
14 discuss is this nature of a continuum, that it's not
15 just a matter of something dramatic happens if you move
16 from one group of way of classifying to another, but the
17 increasing cold ischaemic time is itself, as it
18 accumulates, creating an issue that has to be addressed.

19 Is that something that you recognise, that way of
20 looking at it?

21 PROFESSOR FORSYTHE: Absolutely. As we discussed, it is
22 much more like a continuum. If we can just pull out on
23 that, please, I think reference 1, which you refer to
24 there, is one of the ...

25 MR RIGG: I can perhaps clarify that. That papers is based

1 on the UK experience, and I think what they do is they
2 pull out the data that we provided in one of our
3 references, which is number 9 in our report, which was
4 the UK -- an area experience of the outcome of
5 paediatric cadaveric renal transplantation in the UK
6 area, and that data showed that there was a 4 per cent
7 decline with every one hour. And certainly in that
8 paper there was no cut-off period, it was a continuum,
9 although they did make reference in that paper to
10 a further American study where they had said 24 hours.
11 But I accept this was published in 2002, which was
12 obviously after 1995, but did nevertheless pick up the
13 period that we're concerned with.

14 Q. Yes. Then I wonder if I can take you to
15 Professor Koffman's report. Professor Koffman was
16 a expert who was engaged by the PSNI in their
17 investigation, and he provided a report for them and he
18 also addressed some queries that we raised with him.

19 His report is to be found at 094-007-027, but the
20 particular part that I would like to take you to is
21 094-007-029. You'll see it in the top paragraph 2.4.

22 He's not particularly looking at cold ischaemic
23 time, but he makes some observations on it. He says
24 in that penultimate sentence of that paragraph:

25 "By the time the kidney was implanted into Adam and

1 perfused with blood, the total storage time was
2 approximately 34 hours. This is considerably longer
3 than the average storage time, which is approximately
4 20 hours."

5 So he's got a period not so dissimilar from
6 Professor Savage and the sort of time that you were
7 talking about as the average.

8 Of course, he goes on to say that one can have
9 periods of time in excess of that. If I take you to
10 094-007-034, this is his paragraph 3.7. It's about
11 two-thirds of the way through that, he talks about why
12 the kidney may have failed and he says:

13 "This usually means a kidney has suffered acute
14 tubular necrosis, a reversible process commonly
15 associated with prolonged cold storage times. In this
16 particular case, with a storage time in excess of
17 30 hours acute tubular necrosis and delayed graft
18 function would be expected."

19 Which I think chimes with something you had said
20 earlier.

21 PROFESSOR FORSYTHE: It does, and that just acute tubular
22 necrosis is the more, if you like, technical term for
23 the delayed graft function, which is the term which
24 I used previously.

25 Q. Then if we can go to his response to some queries from

1 the inquiry, that's to be found at 205-002-009. This is
2 where I think he deals more specifically with the issue
3 of cold ischaemic time. If we go down four lines,
4 halfway through that paragraph:

5 "A 16-year-old, heartbeating donor, is an extremely
6 favourable donor with a very high chance of success,
7 despite prolonged cold storage time."

8 That's where that reference to "favourable donor"
9 comes from that I referred you to earlier.

10 And then he says:

11 "Average cold storage times in the UK are about
12 20 hours, but from my experience a young donor can
13 tolerate cold storage times considerably in excess of
14 this period and I have personally been involved in
15 transplanting organs from older donors with cold storage
16 times greater than 48 hours with a great deal of
17 success."

18 He goes on to say --

19 THE CHAIRMAN: Sorry, if you pause there. Can I take it
20 that you're not saying you can't have a successful
21 transplant with cold storage times in excess of
22 20 hours? But the point is that the risks are
23 increasing the longer the storage time goes on for.

24 PROFESSOR FORSYTHE: Absolutely right, so the risk of
25 delayed graft function, therefore the delayed graft

1 function effect on survival, and also in the paediatric
2 population particularly an increased risk of a difficult
3 management immediately following the transplant. But
4 absolutely right, we have both transplanted kidneys with
5 a cold ischaemic time at 36 hours and beyond in certain
6 circumstances.

7 THE CHAIRMAN: So when he says at the end of that sentence:

8 "I have personally been involved in transplants at
9 greater than 48 hours with a great deal of success."

10 You wouldn't dispute that, that is perfectly
11 feasible?

12 PROFESSOR FORSYTHE: It is. Almost certainly Geoff Koffman
13 will say that that was from an era past because we're
14 more and more acutely aware about cold ischaemic time
15 now than in 1995, but absolutely I would not dispute
16 that fact.

17 THE CHAIRMAN: Even in 1995, if you were offered a kidney at
18 36 or 48 hours, that would have been a major negative
19 factor in whether to accept, would it?

20 PROFESSOR FORSYTHE: Particularly for a child, yes.

21 MS ANYADIKE-DANES: If we just finish with what he says
22 there, and go a little further down in the same
23 paragraph:

24 "With a cold storage time of approximately 34 hours,
25 acute tubular necrosis is very likely and the incidence

1 of acute tubular necrosis described from heartbeating
2 donors in the UK is in the order of 20 to 30 per cent.
3 This means that the kidney does not function immediately
4 and function may be delayed for periods of up to six
5 weeks or more."

6 Then if one moves on:

7 "The longer the cold storage time, the more likely
8 there is to be an acute tubular necrosis."

9 Then he observes, as you did, that that is
10 a reversible condition. I think your point is that it's
11 something that has to be addressed and dealt with and
12 you factor that in with all the other things that you
13 have to factor in.

14 PROFESSOR FORSYTHE: Correct.

15 Q. Just so we're clear on it, the issue of the condition of
16 the kidney is something that goes to the success of the
17 transplant. It's not putting the recipient's life in
18 any danger, is it? Or is it?

19 PROFESSOR FORSYTHE: No, not directly putting the
20 recipient's life in danger, but obviously if you're
21 making the whole procedure more risky, then that may do,
22 but, no, directly we're talking about the survival of
23 the transplant rather than the survival of the
24 individual --

25 Q. Yes.

1 PROFESSOR FORSYTHE: -- in this case.

2 Q. Thank you.

3 PROFESSOR FORSYTHE: If I may just add, chairman, just

4 briefly, because I think Geoff Koffman -- trying to

5 follow through the line of evidence here, I think he was

6 specifically being asked about the viability of the

7 kidney, the issue about the viability of the kidney. So

8 his letter was about that as well specifically. So

9 I think that's just an important point to put into

10 context what he says, not only on this page but I think

11 on the following page.

12 Q. Maybe now that we're looking at Professor Koffman, he

13 has all the benefits of not only his own experience but

14 coming from a very well-resourced and large experienced

15 centre. And I think that went to what you had said

16 earlier, decisions may be different depending on the

17 centre that you happen to find yourself in when you're

18 making the decision.

19 PROFESSOR FORSYTHE: Indeed, and I would be interested in

20 Professor Koffman's response to, would he have accepted

21 this kidney for this child in 1995. I would be

22 interested in that response.

23 THE CHAIRMAN: Both in Guy's and in Belfast?

24 PROFESSOR FORSYTHE: If he were asked to put himself into

25 doing it either in Guy's or in Belfast, yes.

1 THE CHAIRMAN: Because on your approach, it's possible,
2 though not inevitable, that you would get two different
3 answers?

4 PROFESSOR FORSYTHE: It is possible.

5 MR MILLAR: Sir, in Mr Koffman's very comprehensive reports
6 dealing with the myriad of issues, there's not even
7 a hint that he would have not accepted this kidney.

8 THE CHAIRMAN: Yes.

9 PROFESSOR FORSYTHE: I think it's also fair to say that he
10 hasn't been asked specifically that question. When
11 I looked at the evidence, it doesn't appear he has been
12 asked that question. That's why I made the point about
13 his response here is about the viability of the kidney,
14 so he's talking about those positive factors that I have
15 mentioned in terms of trying to decide whether or not
16 you accept the kidney or not. I don't see whether
17 he was ever asked the direct question: would you have
18 accepted this kidney for Adam in 1995? Maybe I'm wrong
19 but I have not seen that.

20 MS ANYADIKE-DANES: We can find the questions he was asked.

21 THE CHAIRMAN: I think we can leave this for
22 Professor Koffman. Because even on the bottom line of
23 these two witnesses, they are not saying this should
24 never, ever have been accepted.

25 PROFESSOR FORSYTHE: Correct.

1 THE CHAIRMAN: You're saying: our judgment is that we
2 wouldn't have accepted it, but we know that others would
3 have accepted it?

4 PROFESSOR FORSYTHE: Correct.

5 MS ANYADIKE-DANES: Then if we go on to the issue that
6 I was -- perhaps that leads on to something else that
7 somebody wanted to raise, which is the decision to delay
8 the transplant surgery to 6 am. If you have read the
9 transcripts of the evidence of Professor Savage,
10 you will see that his view, and he recognised that
11 he wasn't the only person who was going to be involved
12 in making the decision, but his view was that you really
13 ought to do the transplant as soon as you could after
14 you've got a favourable result on your cross-matching,
15 which would have had it some time in the very early
16 hours of the morning. That was his view of it.

17 Mr Keane had a view as to when, if you had the
18 cross-match roughly at that time, 1/1.42, his view was
19 that knife to skin would start roughly at about 3 am.
20 In fact we can see where he says that. It's on the
21 transcript for 24 April and I think it's page 47. Yes.
22 That's exactly where he says it.

23 If you go to line 5:

24 "We were going to be cross-matched through at
25 1 o'clock. That's in the notes. And therefore, the

1 issue of whether I, as a surgeon, should start an
2 operation even if the cross-match was at 1, as it said,
3 and Adam was brought straight to theatre, and we know
4 that it took a considerable period of time, and I would
5 have known this, to put a child like Adam asleep
6 we would be knife to skin at, say, 3 o'clock."

7 Now, pausing there, if you had received the
8 confirmation that a tissue match was acceptable, is it
9 your view --

10 THE CHAIRMAN: Better now say "cross-match".

11 MS ANYADIKE-DANES: I beg your pardon. I was being so
12 careful. If the cross-match was acceptable, what is
13 your view as to how long it should take to actually be
14 able to commence your surgery?

15 MR RIGG: I think there were a number of factors. There's
16 getting the patient to theatre, the patient being
17 anaesthetised, the lines being put in, patient being
18 taken to theatre and prepared, and that can take
19 a variable time depending on a whole range of factors.

20 Q. Can I just pause you there. If you know what you want
21 to do is to start as soon as you get the positive sign
22 from the cross-matching exercise and you roughly know
23 when that's likely to come through, you have already
24 made your arrangements with who's going to be the
25 anaesthetist, who's going to be the surgeon, you know

1 where the operating theatre is, you know you have got
2 the nurses and so forth. Once you know all that and the
3 child's already been brought in the previous evening
4 ready, hoping that there will be a positive result on
5 the cross-match process, then how long does it -- once
6 you get the green light, how long does it take you to
7 actually start your operation?

8 MR RIGG: I think taking into account all the factors I've
9 just said, I would think you rarely do it in under two
10 hours from that point of getting the cross-match back.

11 THE CHAIRMAN: Remind me, the cross-match is 2 am, is it?

12 MS ANYADIKE-DANES: 1 am.

13 THE CHAIRMAN: So Mr Keane's estimate that you're unlikely
14 to go knife to skin before 3 am is about right?

15 MR RIGG: It is, and that can be good going sometimes.

16 MS ANYADIKE-DANES: So assuming that, that you worked that
17 out and you weren't really going to start the operation
18 proper until about 3 am, the decision that Mr Keane then
19 makes is it would be preferable not to do that then, and
20 it would be preferable to have rest and come back and
21 started at 6 am.

22 Now, what I wanted to ask you is, if one thinks
23 about the cold ischaemic clock ticking, how significant
24 a factor is that for whether you start at the 3 am time,
25 recognising that people are not fresh, or you start at

1 the 6 am time when they still may not be fresh, but they
2 could be slightly fresher, if I can put it that way?

3 MR RIGG: There are competing risks and benefits. I think
4 if you know that you are potentially doing an operation
5 on a child who is more complex than usual, then it makes
6 far more sense to start when you're fresher in the
7 morning. Although we talk about 6 o'clock, invariably
8 that will mean 8 o'clock because it's the same two
9 hours. So unless we're going to say we're going to get
10 the child down to theatre at 4 am, but -- I don't
11 remember whose evidence it is, but in most hospitals
12 nothing will happen until they've actually seen the
13 surgeon in the theatre complex. People do have
14 accidents on the way to hospital and things, so it is
15 an important factor.

16 I think in this particular situation it was probably
17 more important that the surgeon was fresh and,
18 therefore, able to perform the operation in a way that
19 was most safe. I suppose it goes back to earlier
20 discussions about when you accept a kidney knowing what
21 the cold ischaemic time is, you can predict roughly when
22 the cross-match will be through, and that's all part of
23 the earlier -- should be part of the earlier
24 discussions.

25 Q. Oh I see -- sorry, I beg your pardon, Mr Chairman.

1 THE CHAIRMAN: That's all right. I think we're on the same
2 point. That's the protected forward. If we accept this
3 kidney, if it's flown to Belfast and then the
4 cross-match will take until 2 o'clock, then it is part
5 of the projected timescale to say: will they actually
6 start at 2 o'clock or will they put it back for a number
7 of hours?

8 MR RIGG: Mm.

9 MS ANYADIKE-DANES: So that's part of what you factor in as
10 to whether you accept it in the first place, because
11 you have worked out, forward looking, that sort of
12 timescale.

13 MR RIGG: I think it should be, yes.

14 Q. Thank you. Then can we go to consent, which is where
15 I want to move to next. The issue that I want to raise
16 with you is the question of informed consent.

17 Now, I think both Professor Savage and, I think
18 also, Mr Keane had put to them a document that had
19 certainly got to the trust but they may not have, to use
20 somebody's expression, cascaded down to the relevant
21 people.

22 MR FORTUNE: Not to Professor Savage.

23 MS ANYADIKE-DANES: Fine, it may not have cascaded down to
24 the relevant people and certainly not to
25 Professor Savage.

1 If I ask to pull up 305-002-003. You'll see that
2 that's a letter dated 6 October 1995. One of its
3 functions, apart from instructing people to put steps in
4 place, is to provide a guide to consent for examination
5 or treatment.

6 The first page of that is rather poor, but if we go
7 to page 006 of this group, that's a better title.
8 That is what it's really dealing with. I won't go all
9 the way through it with you, but essentially it's
10 reminding everybody about people's common law rights and
11 the importance for having informed consent.

12 Ultimately what it does, if one goes to 018, is
13 it -- perhaps we can blow that up a little bit? It
14 provides a specimen consent form. I don't think it's
15 intending that these should be the forms, but this is
16 the idea that's being conveyed. You can see --

17 THE CHAIRMAN: Is it not intended that it would be the
18 consent form?

19 MS ANYADIKE-DANES: Yes, it is, but as long as all the
20 information was there, I'm not saying you literally had
21 to reproduce that, but I think the information on it is
22 something that had to be conveyed.

23 If you see the bit that the doctors have to sign to:

24 "I confirm that I have explained the operation,
25 investigation or treatment ..."

1 And so forth:

2 "... and such appropriate options as are available
3 and the type of anaesthetic ... To the patient in terms
4 which in my judgment are suited to the
5 understanding ..."

6 Then if you look at what in this case the parent
7 would sign, would sign that they agree to what is
8 proposed, which has been explained to me. To the use of
9 the type of anaesthetic and that they understand that
10 the procedure may not be done by the doctor or dentist,
11 and that any procedure in addition to the investigation
12 will only be carried out where it's necessary and in the
13 best interests and justified.

14 So this document is far more detailed, specifically
15 relating to risks, than is the consent form that was in
16 use at the time in the trust and signed by Adam's
17 mother. I'm just trying to see if I can pull that out.
18 If I just give the reference ... It'll come. (Pause).

19 058-039-185. There we are. That's the actual form
20 that Adam's mother signed, as did Mr Savage for that
21 matter.

22 The issue that I want to put to you is, in terms of
23 ensuring that the parent has sufficient information for
24 a proper consent or informed consent, or understands
25 what's going to happen, what do you regard as the role

1 of the surgeon? Leaving aside who actually takes the
2 signing of the form, just firstly that process, that the
3 parent understands. What role do you see for the
4 surgeon?

5 PROFESSOR FORSYTHE: We would see that the surgeon should be
6 involved in the consent process. I think we have
7 already covered some of this in that I mentioned that,
8 for us, consent is a process, not an event. It may be
9 a process which is marked by an event, which is the
10 signing of the consent form, but it is very definitely
11 a process and it begins with, as I think I've already
12 mentioned, the assessment when we would say that
13 a surgeon should be involved in that assessment process
14 and answer and pass on any information that is specific
15 to the surgical process itself. That then allows for,
16 in the cold light of day, discussions about different
17 aspects of transplantation rather than relying on trying
18 to impart information in the middle of the night in
19 a heated and emotional situation.

20 Q. Let's assume that your procedures don't actually involve
21 having that kind of multidisciplinary meeting where
22 those sorts of things would happen or that kind of
23 process, and so the child's family or parents come to
24 the hospital without that having happened. They will
25 have engaged with the nephrologist, but without any

1 input from a surgeon, a transplant surgeon. What
2 happens then?

3 PROFESSOR FORSYTHE: I think in our report, we said that we
4 felt it was right for the surgeon to either take consent
5 or confirm the consent. And what we meant by that was
6 that, ideally, if the surgeon were able to go to the
7 patient and the family and discuss any issues which they
8 might have and pass on the most important bits of
9 information, because you're then time limited, but the
10 most important pieces of information that you feel that
11 it's important for the family to know. And if you then
12 are not involved in actually signing the consent form,
13 and I accept that other experts have said that it is
14 fine to delegate that to somebody else, if you're not
15 involved in that signing, I think we both felt that it
16 was reasonable for you to confirm that process by
17 actually seeing the family and saying, "Have you got
18 enough information, is there anything else that you need
19 to know?"

20 So you do not necessarily need to sign the form
21 yourself but to confirm the process has taken place and
22 to offer the family any opportunity to ask any
23 questions. And in addition, if you felt that there were
24 any particular aspects of this donor recipient
25 combination that were more risky than normal, then you

1 might wish to point those out to the family.

2 THE CHAIRMAN: But that's really why you need an input
3 before the consent, don't you? Sorry, in your joint
4 opinions it's far better for you to have the input
5 before the consent rather than to meet, say, Adam's mum,
6 who's already consented and then to start to give her
7 additional information about something to which she has
8 already consented?

9 PROFESSOR FORSYTHE: Exactly. So optimally we would say
10 that that initial meeting with a surgeon -- it doesn't
11 have to be the surgeon who operates on the night but
12 with a surgeon -- and imparting of information, proper
13 two-way communication, should start then. If it were
14 absent, then actually my feeling would be that you'd
15 have to work even harder to make sure there is some form
16 of consent process between you as the surgeon and the
17 family at the time of the procedure.

18 THE CHAIRMAN: It seems to me in that scenario you're
19 running the risk of confusion. You have a mother who's
20 agreed to her son going on the register in the first
21 place, who is presumably looking forward to the day when
22 his name will come up and he will get a transplant, but
23 who at that stage will be, I assume, a combination of
24 excitement and hugely nervous. So for her to sign
25 a consent and then for somebody to come along and

1 explain some more intricacies or complexities or risks
2 doesn't help to ease her mind.

3 PROFESSOR FORSYTHE: So optimally, for us, as we said, the
4 surgeon would take that consent. So we would be the
5 people who would -- the operating surgeon or someone who
6 was delegated but capable of doing the procedure, which
7 is the modern terminology, would go and take that formal
8 consent process. But if you have delegated it, then
9 I think you still have -- it is still right that you go
10 and confirm that consent process.

11 THE CHAIRMAN: That's an imperfect alternative.

12 PROFESSOR FORSYTHE: You have missed two opportunities to
13 provide optimal care.

14 THE CHAIRMAN: Thank you.

15 MS ANYADIKE-DANES: In fact, Mr Keane's view, which can be
16 found at 130 of this transcript of 24 April, is one that
17 he felt that it was perfectly all right for
18 Professor Savage to take the consent in the context of
19 no surgeon really having been involved in explaining
20 anything to Adam's mother. His reason for not being
21 involved is rather interestingly put. I think it really
22 starts at line 18.

23 The force of what he's saying seems to be that he
24 didn't want to be in the position because he's the
25 surgeon of apparently encouraging her or giving her an

1 overoptimistic view of things, so encouraging her to
2 engage -- for her son to have that procedure. He didn't
3 want to be part of that because he was a surgeon. Do
4 you understand that as a relevant consideration?

5 PROFESSOR FORSYTHE: I see it as a consideration, but if
6 I may, I think it's a slightly paternalistic view where
7 you're saying that I have information which I will not
8 discuss in these circumstances. I think even in 1995,
9 trying to put my mind back then, I would still feel that
10 sharing of information, discussing the advantages and
11 disadvantages, would be the right thing to do and, if
12 necessary, saying what your own view is about how things
13 should proceed. But, nevertheless, discussing and
14 giving the full information and coming to a joint
15 decision is the right way to do things.

16 Q. In fact, the chairman addresses some of that on the next
17 page.

18 MR MILLAR: Can we look carefully at what Mr Keane does say
19 there in the context of coming in in the middle of the
20 night to talk to the mother?

21 MS ANYADIKE-DANES: Yes, we can:

22 "The problem I had was I didn't know the child and
23 felt that the issue would be that I could encourage her
24 to take a step if I went there and said 'Look,
25 everything's going to be fine', that could be

1 a reassurance that might push her to go head. There is
2 an element of a surgeon coming over to you, telling
3 you -- looking very confident, coming and saying that --
4 you know, that was a false reassurance, if you know what
5 I mean. In the situation I arrived in, it was
6 acceptable in some places and the practice at the time
7 that nephrologists would do it, but I agree, ideally,
8 I should have been part. I thought the timescale of the
9 events to be part of telling her to go ahead or
10 reassuring her that everything's going to be all right.
11 Because you naturally would say to her 'Look,
12 everything's going to be all right, you'll be fine,
13 don't worry about your child, it will be fine', which is
14 not proper consent for a surgeon."

15 If I pause there, this is exactly the point that I
16 was going to come to put to you because the chairman has
17 raised it in the next lines.

18 Although it's called taking consent, are we clear
19 that you're not necessarily trying to persuade a parent
20 to do anything?

21 PROFESSOR FORSYTHE: Correct. I mean, as I've said, I've
22 said you're trying to impart information, you're trying
23 to give your best assessment of the advantages and the
24 disadvantages, and you are trying to, therefore, help to
25 make a combined decision, is the way I would like to

1 phrase it. But the chairman has also said that this is
2 a very, very difficult situation. This is why in
3 transplantation we try to make sure that the consent
4 process begins ahead of this time. It is an incredibly
5 pressurised time. It is always in the middle of the
6 night, it is a high emotional time, and trying to decide
7 whether or not you want sugar in your tea is hard
8 enough, never mind deciding these important decisions
9 both for yourself and even for your child.

10 Q. In fairness to Professor Savage, the booklet that was
11 handed to the families, when they went on to the
12 transplant list, did indicate that there would be an
13 involvement with the surgeon, but there were
14 difficulties about that, it had to be done by
15 arrangement because, as I said before, those surgeons
16 were not only not on that site, they were in a different
17 hospital and in a different trust. So it would appear
18 from that booklet, which is one that comes from
19 Nottingham actually, that the intention was that
20 a surgeon would be involved prior to the moments just
21 before the surgery. Are you aware of that booklet?

22 MR RIGG: I was.

23 Q. I just made that connection myself.

24 MR RIGG: I just wanted to go back a step and I thought it
25 just might be helpful to clarify just what information

1 needs to be imparted. Obviously it is the advantages
2 and the disadvantages, but it's really going through the
3 nature of what the operation involves. But it's also
4 going through what the potential complications and risks
5 are as well as the potential benefits, and that's why
6 that does need to be as a process, because there was
7 a lot of information to take on board and certainly, you
8 know, late in an evening or the middle of the night,
9 that's not really the time to be going through the
10 intricacies of those things. It's good to remind people
11 of them at that stage, but really the fundamental
12 sharing of that information needs to be at an earlier
13 stage and reinforced as time goes on.

14 MR FORTUNE: Sir, it's about time my learned friend also
15 reminded Mr Forsythe and Mr Rigg about Dr Coulthard's
16 opinion.

17 MS ANYADIKE-DANES: I will be coming to that.

18 THE CHAIRMAN: I'm not sure it's appropriate for you to
19 start an intervention by saying: it's about time that
20 Ms Anyadike-Danes does anything. I don't appreciate
21 that line, Mr Fortune.

22 MR FORTUNE: I apologise if it's deemed --

23 THE CHAIRMAN: It's not welcome. It's entirely unnecessary.
24 It's entirely unnecessary.

25 MR FORTUNE: I apologise unreservedly, sir. I was merely

1 trying to balance the picture because of the opinion
2 elicited from Dr Coulthard.

3 THE CHAIRMAN: I have no objection to that being done.

4 I have no objection to you asking Ms Anyadike-Danes to
5 remind the witnesses about what Dr Coulthard has said.

6 MS ANYADIKE-DANES: Thank you very much.

7 PROFESSOR FORSYTHE: If I may, chairman, I did in my
8 previous answer say that I acknowledged that other
9 experts, I think Geoff Koffman and Malcolm Coulthard,
10 have said that it is appropriate for the nephrologist to
11 take the consent, but we remain of the opinion that
12 a surgeon should be involved, as we've said, optimally,
13 early on in the process, but certainly should confirm
14 any delegated responsibility for consent. So we
15 acknowledge that.

16 MR MILLAR: I think, sir, on that point in ease of
17 everybody, I think Mr Keane was absolutely clear that he
18 thought that it was a good idea that a surgeon should be
19 involved earlier in the process, but the system as it
20 operated in 1995 in Belfast didn't allow that unless
21 there was some special issue, in which case they could
22 be called over. But I don't think there's any
23 disagreement about that.

24 THE CHAIRMAN: It's quite clear from the October 1995
25 document, which hadn't yet cascaded down, that the

1 system was about to change.

2 PROFESSOR FORSYTHE: And I think that reflected not only in
3 Belfast but across the NHS the increased focus on the
4 process of consent, which has undergone significant
5 change since 1995 to now.

6 THE CHAIRMAN: For my own part I should say to everyone, I'm
7 not so much worried about who exactly takes the consent,
8 I'm more concerned about the process by which Adam's mum
9 did consent and who gave her information at the
10 different times, which seems to me to be the more
11 important issues.

12 MS ANYADIKE-DANES: That's what I was seeking to deal with.
13 In ease of my friend, I will put, we have had three
14 experts, two from the inquiry, other than yourselves,
15 and Professor Koffman, of course.

16 Professor Koffman's view is to be found at
17 094-007-031 at paragraph 3.1. If you see he says:

18 "It would appear from the records that consent for
19 the operation was not performed by the surgeons but
20 probably paediatric nephrologist and this would be
21 normal acceptable practice for the mid-1990s."

22 Then he does go on to say:

23 "It would be important to view the consent form and,
24 if possible, review the topics that were discussed with
25 Adam's mother including the risk of death and serious

1 adverse events from the procedure."

2 So he has clearly focused on the quality of the
3 information, not necessarily the particular person who's
4 there for the signing of the form.

5 THE CHAIRMAN: I think we're on the same hymn sheet on this.

6 MS ANYADIKE-DANES: Since Dr Coulthard's name was
7 particularly mentioned in despatches, 200-007-117.

8 I will give this reference but not necessarily take you
9 directly to it because he goes into it as well, at
10 200-002-264. What he's really talking about there, he
11 contrasts what happens in the present day now and what
12 happened then.

13 If you see where it says:

14 "This has not always been the case including in
15 1995. Relatively common for the obtaining of the final
16 written consent for a children's kidney transplant to be
17 undertaken by consultant paediatric nephrologist."

18 Then he gives his reason for it, and then if we pick
19 up the next paragraph:

20 "This should be realised that in our local
21 arrangements, the parents will always have met
22 a transplant surgeon in advance of the surgery and will
23 have covered the relevant issues then."

24 And then he goes on to say what they currently do.

25 And, of course, we have Dr Haynes and he just

1 thought it was inappropriate that even the written
2 consent was signed by the nephrologist. His report is
3 to be found -- not to pull it up -- at 204-002-037.

4 What I had wanted to have you deal with is the
5 actual things, if you are in the unhappy situation,
6 which I think you said was less than ideal, of not
7 having a process whereby the risks that might be
8 involved in this transplant from a surgical point of
9 view have already been discussed and conveyed to the
10 mother, so she comes now for the surgery and you are
11 explaining those things as a surgeon -- of course, the
12 nephrologist will have already engaged with her -- what
13 are the things at that stage in Adam's case that you
14 would have communicated to Adam's mother?

15 MR MILLAR: Sir, I do think it's important in no small part
16 because of your own observation, that what you're really
17 interested in is what information was conveyed to the
18 mother. There's a lot of evidence from Professor Savage
19 both in his witness statements and his oral evidence
20 about the extreme detail that he went into, including
21 where the anastomosis was going to be performed. All of
22 that sort of thing. So I think these witnesses need to
23 know just how detailed the process of consent had been.

24 THE CHAIRMAN: I think Mr Rigg in a sense has partly
25 answered this question because what you said, as

1 I understood you a few minutes ago, Mr Rigg, was if you
2 were in this scenario you would obviously go through
3 with Adam's mum what the operation involves and then go
4 on to discuss some of the risks and complexities about
5 what's involved.

6 MS ANYADIKE-DANES: Given Adam's circumstances, what would
7 they have been, which are the things you would have felt
8 were appropriate to draw attention to when you're
9 speaking to the mother?

10 MR RIGG: The specific points rather than the general
11 points?

12 Q. Yes.

13 MR RIGG: I think there are probably two specific points.
14 One would be Adam's size and that would, in my view,
15 require a slightly different approach using different
16 blood vessels. Secondly, Adam's underlying medical
17 condition of his polyuria and that would need managing
18 in a different way than would be in a child who passed
19 very little urine.

20 Q. If we take Adam's size, would that be being presented to
21 her as something that adds a complexity or just one of
22 those factors that needs to be managed?

23 MR RIGG: I think it would add to the complexity in often
24 the incision would need to be longer, the operation
25 therefore may be longer, and also in view of his

1 previous surgery it's anticipated that the operation
2 would take longer.

3 From a parent's point of view when a child's away in
4 the operating theatre it seems like an eternity. So
5 it's always helpful to be able to give a rough
6 indication of how long that child might be away so it
7 takes away some of the degree of anxiety. I think it's
8 just trying to explain in a bit more detail what extra
9 things might be being done to normal, how long things
10 might take.

11 Q. Now, in terms of from -- well, the first one you gave is
12 a surgical issue, that his size has certain implications
13 for how the surgery might be conducted, which therefore
14 may have a bearing on the time that he will be away in
15 the operating theatre. Are there any other things to do
16 with the precise offer of kidney that's been made and is
17 being accepted or to be accepted that you would raise
18 with her that raise either risks or are advantages that
19 she can take comfort from?

20 MR RIGG: I suspect in 1995, we were probably more
21 paternalistic than we are now, and I'm not sure that
22 we would necessarily have mentioned the prolonged
23 ischaemic time and the extra artery. We would have
24 taken those into account in our decision whether to
25 accept that kidney or not, but I suspect at that time we

1 probably wouldn't have gone into great detail about
2 those areas.

3 Q. Would you express any view as to risks at all?

4 MR RIGG: We would certainly go through the risks so, for
5 example, the risk that the vessels might thrombose
6 afterwards, we would say roughly 1 in 50, but in
7 a younger child that risk is a bit higher. That would
8 be one of the specific named risks we would mention.
9 And then the other ones are the general risks of whether
10 the kidney's likely to function immediately or not. And
11 again, in that specific instance we would normally say
12 20 to 30 per cent, as has previously been quoted, will
13 not work straightaway. We might say in this particular
14 instance that that might be a greater risk. We would
15 talk about the risks of rejection, of infection, those
16 sorts of things.

17 Q. Now --

18 THE CHAIRMAN: I think we need to move on from the consent
19 point.

20 MS ANYADIKE-DANES: Well, I just want to raise one question
21 in relation to this because it's something that Mr Keane
22 said and it might be helpful to get their view on it.
23 That is that Mr Keane's view, as he put it in his
24 witness statements, was that Adam's mother hadn't asked
25 to -- firstly, he had full confidence that

1 Professor Savage could explain all the surgical aspects
2 that might need to be explained and the risks and so
3 forth, and that he would know as much, if not more, as
4 he did about the transplant surgery. I'm paraphrasing
5 so if I've got that wrong, somebody I'm sure will
6 correct me, but that's the essence of what he said.

7 Then he said that the mother hadn't actually asked
8 to see him, if she had asked to see him, then he would
9 have made himself available, and that's the bit I really
10 wanted to ask you about.

11 MR MILLAR: I think Mr Keane's evidence was that he, on the
12 telephone with Professor Savage, asked whether Adam's
13 mother was expressing a wish to see him or whether he
14 thought he should come in to see the mother, and he was
15 reassured there was no need to do that. It wasn't just
16 because he wasn't asked, he did enquire about it,
17 whether there were any issues that required to be
18 explored and he would have come in had there been any
19 issues to explore.

20 MS ANYADIKE-DANES: Yes. The question I wanted to ask you
21 is, is that something that you should be asking whether
22 the mother has raised with the nephrologist that she
23 wants to meet the surgeons, or is that something that
24 should be being volunteered?

25 MR RIGG: From a personal point of view in 1995, I would

1 have been proactive and actually gone to speak to the
2 family. I recognise --

3 THE CHAIRMAN: You wouldn't be in this scenario in 1995.
4 The scenario that's been put to you is one which is not
5 a scenario that you would have been in because there
6 would already have been some input from the surgeon at
7 an earlier stage. Isn't that right?

8 MR RIGG: It is. But let's say there hadn't been, then as
9 a surgeon, not just for a transplant operation but for
10 any operation, I wouldn't want to meet the child in
11 theatre where no surgeon had seen that child prior to
12 that.

13 THE CHAIRMAN: Okay.

14 MS ANYADIKE-DANES: I wonder if we then can move on to
15 Adam's medical notes and records. If we go to the
16 transcript, still in the 24th, page 101, line 12 which
17 is a question being put to Mr Keane:

18 "What in the medical notes you wanted to look at
19 in relation to Adam and why?"

20 And then you see his answer, he says:

21 "To a transplant surgeon who's about to put in
22 kidney, the past is history. Hopefully everything is
23 going to be well. His sodium levels as they were in
24 2003 are irrelevant because you know that children like
25 this, as I said for the indication for him to

1 transplant, their sodiums are up and down all the time.
2 So that's a given. So I would check his current blood
3 tests post-dialysis were okay and in the notes, or
4 I would have said to Maurice -- Professor Savage -- 'Is
5 everything all right?' And I would have looked at his
6 notes, I'd have talked to Mr Brown particularly about
7 his past surgery and just rifled through his X-rays for
8 the ones I wanted."

9 I'm sure he goes on, but what I wanted to ask you
10 about is the issue in relation to the sodium. If we go
11 to Professor Koffman's report at 205-002-010, there
12 we are. It says about the third paragraph up from the
13 bottom -- he's talking about the sodium levels. Then he
14 says in the paragraph starting:

15 "It is interesting that Adam had a history of
16 occasional hyponatraemia. This merely reinforces my
17 view that preoperative sodium was absolutely vital to
18 inform anaesthetists and surgeons as to the safety of
19 subsequent intravenous electrolyte administration."

20 Then I think if we look at 094-007-040 at
21 paragraph 4.9, he says:

22 "I would criticise all members of the
23 multidisciplinary team in charge of Adam's care,
24 paediatric nephrologist, surgeons and anaesthetists for
25 failing to check the electrolytes immediate prior to

1 starting the operation."

2 Then he goes to say that there was an entry in the
3 notes that it should have been done. And the
4 consequence, it's possible that the serum sodium at the
5 beginning of the operation was already low:

6 "And this may have given a warning about the use of
7 further hypotonic solutions."

8 But there, Professor Koffman is really talking about
9 the immediate period, what you would have wanted to know
10 as you were going in about Adam's serum sodium levels.
11 He does mention his history, and what I'm wondering, if
12 you could help us, is would you have wanted to know that
13 Adam had a history of hyponatraemia?

14 MR RIGG: From a personal point of view, the issue of
15 hyponatraemia's probably outside my area of expertise,
16 but I would have expected for the problem to have been
17 highlighted between the nephrologist and the
18 anaesthetist because those were probably the two who
19 would primarily be doing it. But I'd want to be alerted
20 to the fact that this was an issue.

21 Q. You would want to know that?

22 MR RIGG: I would want to know what the issue was and I hope
23 that I would have spotted that by looking at the notes
24 beforehand, but actually that's all part of the
25 communication that should be flagged up that this is

1 a particular issue for this particular child that all
2 those who are involved in his care need to be aware of.

3 Q. And Professor Forsythe, would you have wanted to know in
4 1995?

5 PROFESSOR FORSYTHE: Yes. I mean, it is unarguably part of
6 an assessment that we have described and even if that
7 assessment hadn't happened, say something awful had
8 happened and I'd had to come into the theatre
9 straightaway, I still would have wanted to have known
10 what are the particular problems with this child, and
11 hyponatraemia and polyuria would have been one of those.

12 Q. So even if it doesn't bear directly on the work you're
13 going to do it's part of what you would have wanted to
14 know about Adam?

15 PROFESSOR FORSYTHE: Yes, it's part of -- yes, it is, yes.

16 Q. I wonder if we can now move to a phase when we're really
17 talking about getting into the operating theatre, if
18 I can put it that way, and deal with the question of
19 CVP. If we go to the transcript for 23 April and go to
20 page 82 of it, starting at line 7.

21 This is Mr Keane talking about who's really
22 responsible:

23 "Under normal circumstances an anaesthetist would --
24 and the CVP management in his case would be essentially
25 an anaesthetic issue. In a transplant procedure, the

1 CVP management, the management of how the CVP is to go,
2 is the absolute responsibility of the transplant
3 surgeon. I have to talk to him."

4 I'm not quite sure, I think that might be talk to
5 the anaesthetist, but in any event, the sentiment of who
6 has the absolute responsibility, can you comment on
7 that?

8 MR RIGG: I think it's fair to say that most units have
9 their own target range for a CVP level that --

10 Q. No, no, I meant the responsibility for knowing what
11 it is and its implications in terms of the work that
12 you're doing, not what the range should be.

13 MR RIGG: I was just going to start by saying it's helpful
14 for everyone to know what the range is. I think it's
15 the responsibility of the anaesthetist to maintain and
16 monitor that, but if they're aware of what the level is,
17 then that actually helps them to do that. The surgeon
18 will want to know what the CVP is. How many times they
19 would want to know during the operation will probably
20 vary from surgeon to surgeon.

21 Q. Well, we do actually have what Mr Keane says about that,
22 and if you go over the page to page 83, you can see it
23 really starts at line 2:

24 "I would have talk to him [that's the anaesthetist]
25 on 20 ..."

1 Well, 20 I'm not saying he's literally counted them
2 but this gives a sense of how often he would think he
3 would be doing that:

4 "... how is Adam, what's his CVP. I would have
5 given clear instructions as to how I wanted the CVP
6 managed in a case, which is absolutely -- I couldn't say
7 absolute, it's very unique in surgery. Most surgeons
8 would not involve themselves in CVP management. They
9 would leave that to the anaesthetist. A transplant
10 surgeon would command the management of the CVP. But
11 obviously, to do that, he's got to be talking to the
12 anaesthetist all the time and the anaesthetist has to be
13 talking to him."

14 He goes on in a rather similar vein. Line 18:

15 "So I'm telling him all the time: look, this is
16 going to be difficult, we're going to be stuck for
17 an hour, how is Adam? We don't need to go too fast."

18 Then it goes on much like that.

19 If I take you forward to page 85, you can see he
20 says:

21 "He knows what I want so I may not always ask the
22 actual number, but I would imagine at least half the
23 time I'd be saying, 'Tell me what the number is'."

24 And then I can -- right, we'll stop there for the
25 moment.

1 Is that something you recognise?

2 MR RIGG: A number of factors, I think. First of all, the
3 teamwork and the communication between the surgeon and
4 anaesthetist, I would entirely agree with that. That's
5 very important, just going back to what we need to do at
6 the beginning of the operation, that's where the target
7 range does come in. If the anaesthetist is aware of
8 that, that's fine, but if the anaesthetist isn't aware
9 of that because they haven't done that procedure many
10 times before, then it's important that either the
11 surgeon or the nephrologist shares that with them.

12 Q. I'm sorry, just before you go on, what does that target
13 relate to, is that roughly the bounds within which you
14 want his CVP maintained or is that where you want his
15 CVP at any strategic moment, like, for example, when
16 you're going to release the clamps or something like
17 that?

18 A. You want the CVP to be at a sufficiently high level for
19 when you take the clasps off, and that helps us to know
20 that the kidney's going to be perfused maximally. Often
21 this isn't just a measure of the CVP but it's also
22 a measure of the blood pressure as well because both are
23 equally important.

24 Q. So in that teamwork -- I understand that different
25 professionals have different ways of communicating but

1 that continual need to know just where we are as the
2 surgery progresses, is that something that you
3 recognise?

4 MR RIGG: I think it depends on how you define continually.
5 Perhaps I could just describe my own practice. That may
6 be a helpful way of doing that. Certainly --

7 Q. In 1995.

8 MR RIGG: -- in 1995, what I would have done at the
9 beginning of operation, I would have asked the
10 anaesthetist: what is the CVP now? So that you have got
11 a baseline at the beginning. Usually at that stage,
12 it would be lower than the target range. And then I may
13 ask another half hour later to see what it was then,
14 just so you have got a feeling that it's going in the
15 right direction.

16 If the anaesthetist is well aware of what they need
17 to do, that they're happy to give the appropriate
18 intravenous fluids in the appropriate volume, then
19 actually I'm happy that they get on and do that because
20 I want to be concentrating on what I'm doing. I know
21 where my expertise lies and actually the maintenance and
22 the monitoring of the CVP is the anaesthetist's
23 responsibility.

24 I would then ask again, just before I started to
25 join the blood vessels to do the anastomosis, knowing

1 that after that I'd probably have about another 30
2 minutes before we wanted to take the clamps off, and
3 providing the CVP was coming up towards its target, then
4 I'd be quite happy at that stage.

5 If within the first half hour to an hour of the
6 operation the CVP wasn't coming up and the anaesthetist
7 was perhaps more reluctant to give intravenous fluids,
8 perhaps because they were unfamiliar with the procedure,
9 I think at that stage I would probably ask the
10 paediatric nephrologist to come to theatre, because it's
11 far better that they and the anaesthetist have that
12 conversation rather than me continuing to badger the
13 anaesthetist when really what I'd need to be doing is
14 concentrating on the operation itself.

15 And then before we take the clamps off, before we
16 re-perfuse the kidney, we'd obviously want to check what
17 the CVP and what the blood pressure were at that stage.

18 Q. What's your range that you'd have communicated in 1995?

19 MR RIGG: At that stage I would have wanted it to be above
20 10. I wouldn't have an absolute cut-off above that
21 because that does depend on each child. But I wouldn't
22 have been unhappy with a CVP of 15 providing that the
23 anaesthetist was happy that there was no evidence of the
24 child having pulmonary oedema, in other words that their
25 lungs weren't waterlogged with the extra fluid. We know

1 particularly with larger kidneys in young children that
2 the kidneys that you're putting in are used to running
3 at a higher blood pressure and, therefore, it's
4 important that you have more fluid on board, that
5 you have a higher blood pressure to enable that kidney
6 to have the maximum chance of being well perfused.

7 Q. You used that figure of 15. Of course, one of the
8 difficulties that was experienced in this case is that
9 the actual starting point was 17. Dr Haynes gave
10 evidence yesterday as to what he thought a child would
11 have looked like if he'd had a CVP of 17. When you say
12 15, at which point do you mean 15 and how do you think
13 the child would have appeared with a CVP of 15?

14 MR RIGG: 15 would be towards the time that I would expect
15 to take the clamps off. If I had seen a child with
16 a CVP of 17 at the beginning of the operation, that
17 would usually infer to me as a surgeon that the CVP line
18 was possibly not in the right position. It is quite
19 unusual for any patient to come to theatre in a state of
20 overhydration because most patients will be starved
21 before they come to theatre.

22 Q. Yes. I'm actually asking you as to how you think
23 a child would have appeared who had a CVP of 15.

24 MR RIGG: The anaesthetist -- it depends on whether that was
25 affecting their lungs and their breathing, and the

1 anaesthetist would be able to give me the advice for
2 that. From a surgical point of view, I wouldn't be able
3 to see that. I would be relying on the observations of
4 my anaesthetic colleague.

5 Q. I see, so you have a slightly upper target and if the
6 anaesthetist tells you "I'm sorry, this child is unwell
7 or I can't give you that target", for any reason to do
8 with his management of the child, then that's something
9 you have to deal with between the two of you?

10 MR RIGG: When that situation arises, then I would ask the
11 paediatric nephrologist to come to theatre as well
12 because obviously things aren't as straightforward as
13 they usually would be.

14 THE CHAIRMAN: Just one point I'm not quite clear on. You
15 said a few minutes ago, Mr Rigg, "My range is above 10
16 with no absolute cut-off". There must be a cut-off,
17 surely?

18 MR RIGG: Yes, but it's difficult to say whether it's one
19 particular number. We certainly want to get it above
20 10. Obviously if it goes 16, 17, 18 or even 20
21 consistently, we would have concerns. But usually
22 because the intravenous fluid is going in gradually,
23 then it tends to go up gradually rather than suddenly.

24 THE CHAIRMAN: I understand. But if you're hitting 20 or in
25 Adam's case, 30 --

1 MR RIGG: I would be concerned, yes.

2 THE CHAIRMAN: You'd be a bit more than concerned?

3 MR RIGG: Yes.

4 MS ANYADIKE-DANES: Mr Forsythe, do you have any
5 observations on that and what would be the range you'd
6 be communicating if you had one?

7 PROFESSOR FORSYTHE: Back in 1995, because again the
8 management of the CVP and blood pressure is particularly
9 important in the child, it's something which I -- in my
10 adult practice now would still see as important in
11 particular types of patients. But it is perhaps less
12 important than it is in the children. So we are going
13 back to 1995, and I would be saying the same sort of
14 thing, that if the CVP were below 10, I would want it to
15 be above 10, and I would be looking for around the time
16 of clamp release for it to be 12 to 15.

17 Q. Can I ask something so that we understand --

18 PROFESSOR FORSYTHE: Combined with -- I beg your pardon,
19 sorry for interrupting, but combined with a blood
20 pressure that I was happy with because the two should be
21 together.

22 Q. I understand. Does that mean you're looking for it to
23 peak at a certain figure, a certain value, so that you
24 can release the clamps or conduct the anastomosis, or be
25 maintained at a certain level?

1 PROFESSOR FORSYTHE: It's very likely as you open the clamps
2 and release into the circulation of a child an organ
3 that takes quite a decent blood flow, it is very likely
4 that the CVP would fall around that time and potentially
5 the blood pressure would fall. So it is very likely
6 that that will act as the peak. It's not predictable
7 that that's exactly what will happen, but that is very
8 likely what will happen.

9 Q. Is that why you're doing it because you know that when
10 you release the clamps, particularly if that blood
11 supply is going into a larger kidney, that that is
12 likely to be a consequence? Is that why you want to
13 have the CVP provided, the blood pressure and not
14 contraindicating anything at that kind of level?

15 PROFESSOR FORSYTHE: Yes, I think Mr Rigg had said that.
16 Yes, that is exactly why you want it. As the kidney
17 first sees the blood of the recipient, it sees it as
18 a good pressure both in terms of venous pressure and in
19 terms of blood pressure.

20 Q. Thank you. This may be a matter of practice and not
21 something that you can really comment on, but this is
22 what Mr Keane said that he would be doing. It's
23 following on at that page 85, right at the outset. He
24 said that -- let's start at line 10 to be fair:

25 "I can vividly remember talking to the anaesthetist

1 in this case because, as I said to you, I remember
2 looking at Adam, cleaning him up, tidying him up, making
3 sure that even his nappy was right, and I looked at him
4 and I went to the monitors. When I looked at the
5 monitors and talk to the anaesthetist and said: here's
6 the plan as I have outlined it, this would be a slow
7 process because I knew it was going to be difficult.
8 I couldn't tell him accurately. I couldn't say I would
9 be finished at five to four, but that we would journey
10 together to this. He needed constantly to tell me if
11 there was anything happening to the child."

12 We'll go over the page later.

13 The point that I'm really drawing your attention to
14 is that right at the outset when you said you'd want to
15 know what the CVP figure was at the beginning, what
16 Mr Keane has said he did is he went over to the monitor,
17 sat down and -- or maybe he didn't sit down, but in any
18 event had a discussion with the anaesthetist as to what
19 he wanted.

20 Now, the point I want to put to you is: if you had
21 done that and you had become aware that the actual CVP
22 at that stage was 17, would you have had any concerns,
23 would you have raised it with the anaesthetist, sought
24 to do anything?

25 MR UBEROI: Sir, I'm very sorry to interrupt the flow, but

1 I simply rise to re-emphasise that I will certainly have
2 some closing submissions on this passage of Mr Keane's
3 evidence. I simply certainly wanted to put that marker
4 down so it wasn't thought that those concerns had gone
5 away, but I'm entirely happy with the question and
6 answering is proceeding as we speak.

7 THE CHAIRMAN: I understand, and I presume the problem
8 arises from the fact that what Mr Keane said when he
9 came to give evidence after Dr Taylor added some new
10 information, which wasn't in the witness statements that
11 we had available before Mr Keane came to give evidence.

12 MR UBEROI: It does.

13 THE CHAIRMAN: He didn't say in his witness statements that
14 he may have asked specifically what the number was on
15 perhaps ten or so occasions.

16 MR UBEROI: Precisely, sir.

17 THE CHAIRMAN: So your client was not questioned on the
18 basis that, did he recall being asked a number or did he
19 give a number, or if he gave a number, was it the actual
20 number that was on the screen or whatever variation on
21 that. None of that was raised with Dr Taylor; isn't
22 that right?

23 MR UBEROI: That is right, sir. But I think, foreshadowing
24 it in my mind, the submission will be along those lines
25 but particularly along the lines of not mentioned before

1 despite being asked this question in terms in his
2 witness statements, that is combined with the fact that
3 there were a number of issues that were obviously
4 confused in Mr Keane's mind and his recollection changed
5 upon during his evidence, casting a question mark over
6 the accuracy of his recollection on some passages and,
7 therefore, if he's putting this forward as his normal
8 practice, the submission will be it wasn't done on this
9 occasion.

10 THE CHAIRMAN: Yes.

11 MR MILLAR: Just while we're dealing with interjections, one
12 thing he was absolutely clear about at all stages was he
13 was never made aware, nor was he aware, of a number of
14 17, never mind the 20s and 30s.

15 THE CHAIRMAN: I may as well tell you now, Mr Millar. The
16 problem about that is that if Mr Keane is correct in
17 saying he asked what the number was maybe 10 times -- 10
18 is an approximation -- if he says that he asked the
19 specific number about ten times and he wasn't told
20 anything which led him to have concerns, it means either
21 that Dr Taylor didn't answer him or, alternatively, it
22 means that he didn't listen to the answer, because if
23 Dr Taylor had told him 20, then he would have reacted to
24 it.

25 MR MILLAR: I know these are submissions, sir, but on

1 Dr Taylor's own evidence we know Dr Taylor was doing
2 very strange things. He was re-zeroing the machine
3 a number of times. He was making mental adjustments
4 based on his relative marker theory. He could have been
5 telling Mr Keane anything. What we know from Mr Keane's
6 evidence is that he wasn't telling him any number which
7 caused him concern because he indicated what he would
8 have done had he been given such a number.

9 THE CHAIRMAN: Sorry, just let me flag up to you that I'm
10 not sure what we know from Mr Keane's evidence. I know
11 what Mr Keane's evidence was, but you should not assume
12 that because Mr Keane gave that evidence that that
13 evidence is accepted.

14 MR MILLAR: No, I'm not making any assumption at all, sir,
15 but it's just simply --

16 THE CHAIRMAN: And it might be that we will have to explore
17 this a bit further, so we will certainly come back to
18 it.

19 MR MILLAR: Yes, but I think, sir, one has to -- on the
20 combined evidence we know from Dr Taylor that he was
21 making mental adjustments to what he was seeing on the
22 monitor based on his view that he was treating the CVP
23 reading as not a true figure, but a marker for relative
24 change. He was making adjustments so that when it said
25 20, he didn't interpret that as 20. So if Mr Keane

1 asked him what the numbers is, it's perfectly reasonable
2 he would have given a much lower number. It's perfectly
3 logical if you're adjusting in your own mind the
4 figures.

5 THE CHAIRMAN: Well, it's a possibility. But it's not
6 something that Dr Taylor was ever asked about.

7 MR UBEROI: If I might add, it's not a logic that I follow
8 at this stage, and to complete the evidential picture,
9 there's also the conversation with Dr O'Connor, of
10 course. But that's a different point again.

11 THE CHAIRMAN: If he did pick up the point and did have
12 a specific conversation about the numbers not being
13 reliable.

14 MR UBEROI: Precisely.

15 THE CHAIRMAN: It sounds like closing submissions already.

16 MR MILLAR: My learned friend has started this off by making
17 submissions, sir.

18 THE CHAIRMAN: Very quickly, let's hear some evidence.
19 Ms Anyadike-Danes?

20 MS ANYADIKE-DANES: The point that I had put to you is that
21 Mr Keane's evidence is that he went over to the monitor
22 and had a conversation right at the outset with
23 Dr Taylor about pretty much, I think as you were saying,
24 Mr Rigg, about his expectations in terms of the level of
25 CVP and so on and so forth.

1 But the point I wanted to ask you is: if he had
2 appreciated either because he had seen it on the monitor
3 and was able to read 17 or in some way it was conveyed
4 to him as a starting position, what would have been your
5 response if you were in his position in 1995?

6 MR RIGG: My initial response would have been, was that an
7 accurate reading? From my experience then, a CVP
8 reading of 17 at the beginning of this operation would
9 be very unusual because that would be a very high CVP
10 reading. And again, I can't claim great expertise in
11 this area but the sorts of things you might have
12 asked: is there a waveform that goes with that to show
13 it is an accurate reading. I would want for the
14 anaesthetist to tell me: are there any clinical features
15 that the patient had fluid overload? I may have asked:
16 is the zeroing right? Because sometimes what happens is
17 we change the position of the table, we may elevate it,
18 particularly for myself, being a tall surgeon, the table
19 has to come higher for me to operate, and that can
20 affect the zeroing of the CVP. So there are things like
21 that that I would want to know.

22 Q. Would you be content for that to be the starting figure
23 and, if not, what are the implications for you if it is
24 the starting figure?

25 MR RIGG: It would be much higher than I would expect to

1 start. And I would want to know why it was high before
2 we went further, and that may be the stage, if we were
3 content that all the mechanical aspects had been dealt
4 with, that I would want to ask the advice of the
5 paediatric nephrologist. Because I accept that it's not
6 my area of expertise in a young child and, therefore,
7 in that situation I would have asked Dr Savage to come
8 down to add his expertise to the situation.

9 PROFESSOR FORSYTHE: We're speculating, aren't we, but
10 I think in these sort of circumstances that is what
11 I would do as well. There would be concern and you'd
12 want to allay that concern before you would take the
13 next step.

14 Q. Before you actually started the surgery, knife to skin?

15 PROFESSOR FORSYTHE: Correct.

16 Q. Thank you. Just because the assistant to Mr Keane is
17 obviously an experienced surgeon, albeit not
18 a transplant surgeon, his view, which he gave in
19 evidence on 1 May -- I think that's to be found at
20 page 76. Start at line 11. He acknowledges that
21 transplant surgery isn't his field of expertise and that
22 he knows how to read a CVP monitor if it has a number on
23 it.

24 His basic view is it's really not part of what he
25 would be concerned with in other surgery, although he

1 recognises it's a feature of transplant surgery. You
2 both had started as general surgeons before you became
3 transplant surgeons, is that something that you
4 recognise, that CVP is not particularly relevant to
5 general surgery?

6 PROFESSOR FORSYTHE: It is really more a feature of the
7 level of surgery rather than the type or specialisation
8 of surgery. So if you are doing major surgery with the
9 potential of major fluid shifts and blood loss, then
10 a CVP monitor and the use of CVP pressure and the
11 numbers of the CVP become much more important. So it's,
12 if you like, the size of surgery rather than the type of
13 surgery.

14 Q. Thank you.

15 MS WOODS: Sir, if we can just complete on that evidence,
16 Mr Brown was subsequently asked a number of questions
17 about what he would have done if various high CVP
18 figures had been brought to his attention. His evidence
19 was consistently that he would have intervened, he would
20 have wanted something to be done.

21 THE CHAIRMAN: Thank you.

22 MS ANYADIKE-DANES: Thank you.

23 Then can we move on to something that we had started
24 with. I think, Mr Rigg, you had mentioned the intensity
25 of the operation, that you really wanted to concentrate

1 on your surgical things, which is why you would have
2 asked for the nephrologist to become involved if there
3 were issues of fluid management, CVP, matters of that
4 sort so that that debate can be going on between that
5 person and the anaesthetist and allow you to focus on
6 what you're doing. But can I just ask, is it possible
7 that the CVP could reach a level, for whatever reason,
8 where you didn't feel that you could actually continue
9 with the surgery?

10 MR RIGG: I think once you've started the operation, then
11 you have to carry on with the operation. If it had got
12 to a level of, let's say, 30, which is obviously what it
13 did at one stage, I would certainly have been concerned,
14 but having started the operation -- I suppose it depends
15 on what stage --

16 Q. What stage you're at?

17 MR RIGG: There have been situations, again probably it's
18 perhaps not helpful to go in non-paediatric situations,
19 but if, for example, a patient has a heart attack while
20 you're operating in a transplant operation before you
21 get to the stage of putting the kidney in, you may
22 abandon the transplant operation and just close the
23 wound.

24 So there is a point of no return that once you've
25 got the blood vessels open, then I think you -- and

1 you've started to do the anastomosis, then I think you
2 have to complete the anastomosis.

3 Q. That's the very question I was going to ask you. Is
4 there a point of no return where, although it's not
5 satisfactory, it's worse to stop and reverse than it is
6 to go on and complete?

7 PROFESSOR FORSYTHE: I would agree with that and I would add
8 to it the reason that is the case is up until the time
9 that you take the kidney out of ice, it actually could
10 be transplanted to another individual. So the kidney
11 then would not go to waste, as it were. If, on the
12 other hand, you found you were in major difficulties
13 such as the example that Keith Rigg gave or,
14 alternatively, in my own experience, somebody had an
15 allergic reaction to one of the drugs that they had
16 prior to the transplant actually -- sorry, the
17 anastomosis beginning, we stopped the operation at that
18 point because it would have been dangerous, one for the
19 recipient to go ahead, and two, it would have, if you
20 like, wasted the kidney because the patient was so ill
21 by the time the kidney went in, it gave it no chance of
22 success. So it depends which bit of the operation you
23 got to as to whether or not you would stop or curtail
24 the procedure.

25 Q. Is there anything that you can do if you've got as far

1 as the anastomosis? I think Mr Keane -- and we will go
2 to the evidence in a minute -- referred to there being
3 a sort of show-stopper if he had appreciated what the
4 CVP levels were. In fairness to him, he said "I just
5 didn't know that they were are that level, but had I
6 known, as far as I'm concerned, that would have been
7 very serious", and I think he categorised it as
8 a show-stopper. And then as he went on in his evidence,
9 he acknowledged that you could be at a stage where it's
10 actually very difficult to know what you could do at
11 that stage.

12 If you have got as far as anastomosis and you
13 realise that something is very badly wrong, the child's
14 CVP is very, very elevated, there doesn't seem to be any
15 way that it's anything mechanical, the equipment has
16 been re-zeroed and all that sort of thing, and still it
17 remains very, very elevated, what can be done at that
18 stage?

19 PROFESSOR FORSYTHE: A very difficult situation. I would
20 say, as Keith alluded to, that you would try to finish
21 the operation as expediently as possible so that the
22 patient could be transferred to an intensive care unit
23 where they could be stabilised and attempt to overcome
24 any of the problems which are probably non-surgical. So
25 you try to, if you like, get the operation finished as

1 quickly as possible so that the child could be
2 transferred to the place where they could be cared for
3 the easiest.

4 Q. Are there elements of the surgery, which, although in
5 the normal course obviously you would do to say you've
6 got a completed surgery, but in extremis like that you
7 might think: I will do the essential things, I'll get
8 the kidney plumbed in. Are there elements of the
9 surgery you could not complete to try and expedite that
10 process?

11 PROFESSOR FORSYTHE: I guess we're now into pure speculation
12 where I have not done this. You could think about not
13 attaching the ureter into the bladder and simply putting
14 a tube into the ureter and bringing it out through the
15 wound. But I have never done that.

16 THE CHAIRMAN: You could think about not closing the wound,
17 which apparently takes 15 or 20 minutes?

18 PROFESSOR FORSYTHE: You could do that.

19 THE CHAIRMAN: We're getting highly speculative now.

20 PROFESSOR FORSYTHE: We are getting highly speculative.

21 I have avoided closing the wound sometimes when the
22 kidney is too big, so that's entirely reasonable to do.
23 So if you were really in a very urgent situation,
24 absolutely you would do that. Thankfully I have never
25 been in that situation.

1 MS ANYADIKE-DANES: One question I wanted to ask you about
2 the intensity of consideration and concentration.
3 I think it may be that you can't answer this because
4 it's a matter of practice, but at page 87, lines 5 to
5 10, you had been talking about the importance of
6 communication, and I think Professor Koffman does as
7 well, but at lines 5 to 10 you see that Mr Keane is
8 saying:

9 "It's not entirely clear who he means by theatre
10 staff."

11 Whether he means literally everybody in the
12 operating theatre or scrub nurse and so forth, but he
13 says:

14 "I would tell the theatre staff when I'm really
15 concentrating: don't disturb me unless you have to. Ask
16 permission to talk to me. When I'm doing something
17 very delicate and something -- I need my eyes exactly on
18 what I'm doing. I don't want someone to interrupt me."

19 And so on.

20 He talks about the level of intensity. Is that
21 something you recognise?

22 MR RIGG: It is a personal thing and some surgeons do want
23 absolute quiet and want permission before somebody
24 speaks to them. Others are more relaxed. There can be
25 particular times of an operation which are more

1 stressful and particularly the anastomosis of the blood
2 vessels or when you've taken the clamps off and there's
3 bleeding where you do need more intense concentration
4 and for there to be quiet. But I think it is on the
5 whole a very personal experience and if -- yes, it is
6 a personal --

7 Q. I understand. Sorry, there was one point that I should
8 have put to you because I was asked to, and that's the
9 issue of target CVP. You mentioned what yours was. You
10 want anything over 10, I think you said. I think
11 Mr Keane gave his target at 10 to 12, so that's
12 something you would recognise. But he went on, this is
13 on the transcript of the 23rd --

14 PROFESSOR FORSYTHE: I don't want to interrupt, but we said
15 above 10. We said 10 to 12. 12 we would be content
16 with. If it went to 13, for instance, then that would
17 not concern us. So that was slightly different,
18 I guess.

19 Q. Yes. In fact, if one looks at page 123, line 17, he
20 says:

21 "As I start, I would be happy to start within
22 a range of 3 to 7. If it was above 8, I would start to
23 wonder in my own mind, has Adam had too much gastrostomy
24 feed? Anything over 12 in a child like this the alarm
25 bells would go off in my mind."

1 That seems to indicate a different level than
2 you have. In fact, he goes on over the page in
3 fairness --

4 MR MILLAR: [Inaudible: no microphone].

5 MS ANYADIKE-DANES: I thought I had said at the start.

6 MR MILLAR: The target of 10 to 15 is taking off the clamps,
7 it's not the start of the operation.

8 THE CHAIRMAN: The start of the operation, Mr -- I think
9 both have said that the range is above 10 and
10 Professor Forsythe said 12 to 15 at clamp release, and
11 Mr Rigg said "My range is above 10 with no absolute
12 cuff-off". Not happen with 15 at the time of taking the
13 clamps off. You're both different from Mr Keane who's
14 starting from 3 to 7.

15 MR RIGG: I don't think we are different. I think the 3 to
16 7 actually is the normal range. I think what we're
17 saying is we like to get it up to above 10 by the time
18 the clamps come off and we have an hour, hour and a half
19 for that to happen.

20 THE CHAIRMAN: That explains your initial question, what is
21 the CVP? Your answer to that was: it would be lower
22 than the range you're looking for at the start. And
23 that's why you ask about 30 minutes later to confirm
24 it's on an upper trend.

25 MR RIGG: That's correct.

1 THE CHAIRMAN: Okay.

2 MS ANYADIKE-DANES: So if I go back to the question that
3 I wanted you to help us with, which is that at the start
4 anything over 12, there would be alarm bells, and he
5 wouldn't start the operation until he's happy. Are you
6 of the same view as that? Let me just give you the
7 line. It's line 20 at page 123.

8 MR RIGG: It's probably very similar to the answer we gave
9 with a starting one of 17 is that a starting range of 12
10 would be unusual and would make us wonder whether the
11 actual reading was inaccurate because in a child, you
12 know, if the normal range is 3 to 7 and actually the
13 gastrostomy feed or any sort of feed would have been
14 stopped at least two hours before of the operation
15 started, it may even have been six hours beforehand,
16 then you would normally expect the CVP to actually be
17 lower than the normal range. So anything that was
18 higher, you would generally wonder why that was, and
19 it's more likely to be an inaccuracy of the reading
20 rather than the true value for that particular patient.

21 Q. I wonder if we can go on to urinary catheters, which is
22 an issue that's exercised us a little, or me. I think
23 firstly the important thing, to get it straight, is that
24 Mr Keane had every intention and did insert a catheter.
25 He inserted a suprapubic catheter. He also had -- in

1 fact, I'm just trying to think of that diagram that you
2 produced for us, which we will try and get up, because
3 he took issue with that diagram. It's well worth
4 getting for that reason.

5 It's at 203-008-110. Figure 2(b) is the sort of
6 catheter that was actually inserted. It's not -- and
7 I think --

8 MS WOODS: I wonder if that's correct. My understanding is
9 figure 2(b) shows a Foley catheter inserted
10 suprapubically, and in this instance I believe it was
11 a Malecot catheter that was inserted.

12 MS ANYADIKE-DANES: You're quite right. I meant the
13 suprapubic catheter was the form -- but, yes, you're
14 quite right, this is the very issue that I was going to
15 raise with you. What is the difference between those
16 two?

17 MR RIGG: I think my drawing, as you'll have seen from the
18 other evidence, is not that good. These were images
19 I was able to find on Google and it wasn't so much the
20 catheter I was trying to describe but where the catheter
21 went to that was the important issue. I recognise that
22 a Foley and a Malecot are different catheters, but they
23 both go to the same place, through the anterior
24 abdominal wall directly into the bladder. A Malecot
25 catheter has a single lumen it doesn't have a balloon on

1 it, whereas the Foley catheter has an extra channel with
2 a balloon to keep it in place. And different surgeons
3 will use different catheters as a suprapubic catheter.
4 Some will use a Foley, others will use a Malecot-type.

5 Q. What's the significance of that, if any?

6 MR RIGG: I think it's personal preference.

7 Q. When it came to a urethral catheter, I think Mr Keane
8 did have a view about that. Because of Adam's age and,
9 therefore, the size of his urethras, I think he took the
10 view that to insert that kind of catheter wasn't one
11 that he would want to insert into a child of that age
12 and size.

13 MR MILLAR: [Inaudible: no microphone]. That was an
14 additional point. He didn't think it was necessary to
15 have a urethral catheter. And then asked why were there
16 any other contraindications, he mentioned what he
17 regarded as the potential risks of sticking a catheter
18 up a small child's urethra.

19 MS ANYADIKE-DANES: Yes, that's absolutely right, but that
20 wasn't quite the point I was a little bit concerned
21 with. It's clear, and it's clear in all his evidence,
22 and it's clear in his witness statements, that he didn't
23 think it was necessary. In fact he specifically wanted
24 to use the urine to distend the bladder for his own
25 purposes so he did say, though, that had the

1 anaesthetist asked him, he would have put one in. So
2 I'm not really dealing with that issue, I'm dealing with
3 what he -- and he said there were no contraindications.
4 Then when he went on to develop some of the difficulties
5 that he saw, and this is what I seek your guidance on,
6 he said that, firstly, Adam had small urethras, and
7 I think you were specifically asked to address that and
8 you did in a report in the sense that he had small
9 urethras because he was a small child. So there was no
10 evidence that his urethras, and I think this was
11 conceded, were any smaller for him than for any other
12 four-year-old child of his size.

13 Then the second point he made is that that
14 particular kind of urethral catheter, because of it
15 being -- I think this is the Foley-type is it? --
16 that isn't one that he would use with a child of Adam's
17 age and size. And I wonder if you could comment on
18 that, does it have to be a Foley catheter if you're
19 going to have a urethral catheter? Are there sizes that
20 could accommodate more a child of Adam's size and age?

21 MR RIGG: There's a whole range of sizes of Foley catheters
22 and they use a French score, which goes from the about
23 the smallest catheter, which is a 6 or 8, and they go up
24 to 20s or 30s in adults. There is no contraindication
25 in my own opinion and it is standard practice at the

1 beginning of a transplant operation to plan to insert
2 a urethral catheter.

3 I recognise that in some situations it may be more
4 appropriate to place a suprapubic catheter later on
5 because you are able to put a larger calibre suprapubic
6 catheter in, as opposed to a urethral catheter, which
7 obviously has to be smaller. So in a child who is going
8 to produce a lot of urine, it can be easier to drain it
9 via a suprapubic catheter rather than the urethral
10 catheter.

11 But in my own opinion, and I have spoken to my
12 paediatric urology colleagues, there is no
13 contraindication to inserting a urethral catheter into
14 a child of Adam's age or even of a child who is younger.
15 And again, as we've seen from the list of the operations
16 that Adam has already had, Mr Brown had in fact inserted
17 catheters, cystoscopies into Adam when he was much
18 younger. So it technically was possible.

19 The reason that I like to put a catheter in at the
20 beginning of the operation is, firstly, to know that the
21 urethra is actually patent. It also gives us the
22 opportunity then to distend the bladder at the time at
23 which we are going to join the ureter, which is the tube
24 that carries the urine, join that to the bladder because
25 it can sometimes be difficult to identify the bladder.

1 In Adam's situation that is different because he did
2 have a good urine output anyway and that may also have
3 been used for the anaesthetist to monitor the output
4 during the operation.

5 Normally, our practice would be to clamp the
6 catheter off having put it in to allow it to gradually
7 distend.

8 Q. Do I understand then that the two of you have different
9 reasons for wanting a catheter in? The anaesthetist has
10 his own reason, and he using that to monitor the urine
11 to factor that into his fluid management, and you want
12 it for your other reasons?

13 MR RIGG: Yes. I think it's fair to say that in most
14 situations patients and children with kidney failure
15 actually have a lower urine output and it's not standard
16 practice to measure the output during the operation
17 because that is usually of no relevance. I accept that
18 in Adam's situation, who was used to a higher urine
19 output, then it may -- it would be one opportunity for
20 the anaesthetist to measure what was coming out as well
21 as what was going in. But the reason that we as
22 surgeons like the catheter in is certainly, during the
23 operation, it gives us the opportunity to know that
24 we have access to the bladder, that we can then distend
25 it. It is also helpful to have that in after the

1 operation so we can measure the amount of urine that is
2 being passed and also so we can keep the bladder
3 reasonably empty to allow the join between the ureter
4 and the bladder to take place.

5 Now, those later functions can be done equally well
6 with a suprapubic catheter as they can with the urethral
7 catheter.

8 Q. Well, just because I'm sure I'll be asked to put it to
9 you. Professor Koffman addresses the issue of catheter
10 at 094-007-035, paragraph 3.8. He starts by saying:

11 "The majority of patients undergoing transplantation
12 do not pass a great deal of urine."

13 So effectively, their bladders are clamped off in
14 order to distend the bladder to facilitate the ureter to
15 the bladder and anastomosis.

16 Then he specifically deals with the kind of patient
17 like Adam:

18 "A minority of patients are polyuric and the bladder
19 may be left on free drainage in these patients.

20 It would not be particularly important to monitor the
21 urine output."

22 That's a different issue because the anaesthetist
23 will address whether it's important for him to have it
24 monitored, but from a surgical point of view, what does
25 he mean by saying that if you've got -- you're in the

1 minority of a patient who is polyuric that the bladder
2 may be left on free drainage? What does that mean?

3 MR RIGG: All that means is that the catheter is actually
4 connected to a collection bag, so it just means that any
5 urine that the patient produces leaves the bladder down
6 the catheter and collects into a bag that's outside. So
7 the bladder is kept empty during the operation.

8 Q. So there is an catheter? Professor Koffman does
9 envisage that there will be a catheter?

10 MR RIGG: Thank you.

11 THE CHAIRMAN: It's 1.05, Ms Anyadike-Danes. Shall we
12 break?

13 MS ANYADIKE-DANES: Of course.

14 THE CHAIRMAN: We'll need to resume at 2 o'clock to ensure
15 that our two witnesses finish this afternoon.

16 (1.05 pm)

17 (The Short Adjournment)

18 (2.00 pm)

19 MS ANYADIKE-DANES: Just before we leave the issue of
20 catheter, actually, even before we get to that, two
21 little housekeeping matters that were raised. I think
22 a query was raised as to whether Professor Koffman was
23 ever asked the question of whether he would have
24 accepted the kidney as opposed to whether the kidney was
25 viable.

1 The short answer is he never was asked that.
2 We have seen the letter of instruction from the PSNI.
3 And, of course, we know what our own note was. So he
4 wasn't asked that, and in fact Professor Forsythe had it
5 about right in relation to what the letter was
6 addressing, which is the letter that was written to the
7 inquiry. Because a specific question that the inquiry
8 asked is if Mr Koffman might elaborate on his belief
9 that the kidney must have been viable at the start of
10 the operation and how this ties in or not with the
11 opinion of the pathologist. So that was one of the
12 queries put to him.

13 Then if I could stay for a little while the issue of
14 the catheter because I'm being asked to raise with you,
15 so that it's clear, the point that you made in your
16 report of 203-004-062. If we could bring that up.
17 Looking at the top paragraph, just before the (v):

18 "In Adam's case a suprapubic catheter was inserted
19 the bladder at the end of the procedure. This can be
20 a useful procedure in small children as it may be more
21 effective in draining the bladder than a small urethral
22 catheter. It is not known if this was the surgeon's
23 practice."

24 And then if we go down to (vi):

25 "Was it reasonable in Adam's case for the urethral

1 catheter not to have been placed at the beginning of the
2 operation if there were no contraindications?"

3 Now, Mr Keane has said there were no
4 contraindications. The answer to that is:

5 "This would not be standard practice, unless it was
6 the intention to insert a suprapubic catheter at the
7 time of surgery. If this were the case, then it was
8 reasonable not to insert a urethral catheter at the
9 beginning of the operation."

10 And I wonder if you can comment on that from
11 a surgical point of view. It may be in fact, I think
12 we have already have had evidence from the anaesthetist
13 as to why they would want a catheter right at the
14 beginning, but from a surgical point of view I wonder if
15 you could comment.

16 MR RIGG: I think from a surgical point of view, it would
17 not -- I mean, I think we would prefer a catheter in for
18 the reasons I explained earlier on, so we can distend
19 the bladder if required. But I think in a small child
20 it may equally be appropriate if you've decided at the
21 beginning that you don't want a urethral catheter in and
22 you're going to put a suprapubic in at the end, then
23 that would be okay.

24 Q. I think the issue is to try and understand why would you
25 decide at the beginning not to have a urethral catheter?

1 MR RIGG: Well, I said it wouldn't be my own practice --

2 Q. No, but you've indicated that it would be reasonable not

3 to.

4 MR RIGG: I think, again from my own experience, that there

5 have been one or two small children who have had passed

6 very large volumes of urine where the urethral catheter

7 doesn't seem able to manage the volume, and in those

8 situations we've perhaps seen a leak of urine and those

9 patients can be better off with a suprapubic catheter.

10 So it's a theoretical thing that we might choose to do.

11 Q. If that was the situation, when does the suprapubic

12 catheter go in then, because it clearly -- can it go in

13 right at the beginning?

14 MR RIGG: It would go in at the end of the operation,

15 usually after the ureter has been joined to the bladder,

16 so it's often the last thing that's done before the

17 wound is closed.

18 Q. How does that help if you have a young child who could

19 be passing large volumes of urine, which is why you

20 don't want to have a urethral catheter in the first

21 place?

22 MR RIGG: It was more if they were passing large volumes of

23 urine after the operation rather than during.

24 Q. If they were the sort of child who might be passing

25 large volumes of urine during the surgery, what

1 consideration do you give, if any, to inserting
2 a urethral catheter right at the outset?

3 MR RIGG: Again from my own personal practice, if the child
4 or the patient is passing a large volume of urine, then
5 that will mean the bladder will fill up during the
6 operation, and certainly if you have a relatively small
7 operative field, then the bladder can actually get
8 in the way and, therefore, it is often helpful to have
9 the bladder empty throughout the operation. At the
10 stage where you want to join the ureter to the bladder,
11 then you then have the opportunity to run fluid back
12 through the catheter to distend the bladder, which makes
13 that easier to identify.

14 PROFESSOR FORSYTHE: I think I would only add to that just
15 to underline the fact that it is really very unusual to
16 have a patient with polyuric renal failure. I think
17 in the vast majority of patients, in the adult side and
18 the adolescent side, reduce their volume of urine
19 actually maybe down to zero, so it is very unusual in
20 this circumstance that we are describing here. I think
21 that's why my preference as well would have been for
22 a urethral catheter because partly so that you can
23 control the situation, so it's not an uncontrolled
24 situation, and the second thing that would be in the
25 back of my mind would be that it would be good for the

1 anaesthetists because they would also be able to know
2 the fluid balance, and it would help them in the
3 management of the fluid balance.

4 Q. Mr Rigg, you perform also adult renal transplants. Is
5 there any difference in how you approach whether you use
6 a urethral catheter or not?

7 MR RIGG: Again, my procedure of choice would always be
8 putting a urethral catheter in unless I couldn't get
9 a urethral catheter in.

10 Q. Yes. Mr Keane has included with his CV a section in
11 a book that he wrote about transplants, renal
12 transplants in Northern Ireland. I believe you have
13 seen that section, it's chapter 13 in a book edited by
14 Mary McGeown. It's literally called "Insertion of the
15 kidney", helpfully.

16 Some of these are part of the papers, and I don't
17 have, unfortunately, a reference for this particular
18 section but I will try and see what I can do. Because
19 part of it is in file 71, I think. And I will try and
20 see what I can do about getting you a proper reference
21 for it.

22 In any event, at page 171, this is Mr Keane in
23 combination with Mr Kernohan. They start off with the
24 general principles and standard kidney transplant
25 operations and so forth. Then they go on, just before

1 they get to variations in technique, at page 171 they
2 say:

3 "The urethral catheter is left to drain the bladder
4 for five days."

5 Which sounds like in that surgery he was
6 anticipating there would be a urethral catheter.

7 He then has a specific section, and in fairness to
8 him it may be that he was looking at that as something
9 that related simply to adults and not to children. But
10 he does have a section which is titled helpfully
11 "Transplantation in children". That starts at page 176.
12 You have seen this, haven't you?

13 MR RIGG: Mm.

14 Q. Since you don't have the benefit of it, I will take you
15 to it as to what he says:

16 "The transplantation in children is more difficult
17 than in adults and this bears a direct relationship to
18 the age of the child. A 15-year-old is technically
19 little different from an adult and presents little
20 difference from an anaesthetic point of view, however
21 a two-year-old child presents more surgical and more
22 anaesthetic problems."

23 He goes on to say that until recently -- this book
24 I think -- I will get the actual date for it. I think
25 my junior is looking for the date when it was published:

1 "Until recently, transplantation in children younger
2 than five years has shown poor results."

3 He goes on to talk about the experience in Guy's
4 hospital. And then he deals specifically with problems
5 in the under 5-age group.

6 He says:

7 "The problems that may be encountered in children
8 under five years are summarised."

9 It helpfully gives a little table. I wonder if
10 I could have your comments on what he says here about
11 it:

12 "Firstly, there will probably be disparity in size
13 between the donor kidney and the recipient vessels and
14 vice versa."

15 Then:

16 "Vascular anastomoses is technically more
17 challenging due to the small vessel size. The kidney
18 cannot usually be placed retroperitoneally in the pelvis
19 due to inadequate space."

20 Fourthly:

21 "Fluid balance particularly during the initial
22 perfusion of the kidney is more critical than in the
23 adult due to the small intravascular volume and limited
24 cardiac output in the small child."

25 "5. Small children pose more difficult anaesthetic

1 problems.

2 "6. Post-operative care is more demanding than in
3 adults.

4 "7. Biopsy of the graft is more hazardous due to
5 the intraperitoneal position of the graft.

6 "8. Immunosuppression in children may lead to
7 a greater incidence of malignancy."

8 "9. Post-transplant hypertension is common."

9 THE CHAIRMAN: Can I stop you there. The reference for
10 Mr Keane's own chapter is 070-023 (i)-254.

11 MS ANYADIKE-DANES: Yes, and I think where I am might be
12 257.

13 THE CHAIRMAN: Yes. Is that section 5.1.2?

14 MS ANYADIKE-DANES: Yes. Just moving on to 5.1.2, actually.
15 This is something that I'm going to ask you about. But
16 since I've got this at the moment, I might as well take
17 you to it. But before I get there, can I ask for your
18 comments on that. You've read it before, what is your
19 view as to how he has characterised the problems?

20 MR RIGG: I would agree with all of that. The only thing
21 that I would have perhaps a slightly differing view was
22 the bit about saying that it's not possible to place the
23 kidney retroperitoneally. There are two approaches to
24 the appropriate area in young children. Some surgeons
25 prefer to do the operation by going into the peritoneal

1 cavity and exposing the vessels by moving the colon
2 to one side.

3 Other surgeons prefer to do a standard approach by
4 making a space between the peritoneum and the muscle
5 layer, as we would do in an adult transplant, and it is
6 equally possible to expose all of the blood vessels
7 including the aorta and vena cava by that approach on
8 the right-hand side.

9 My own personal preference in the young child
10 between 2 and 5 years of age is to still go with the
11 extra peritoneal approach, and I have found generally
12 that that has been perfectly possible. But I recognise
13 that some of my colleagues around the country who deal
14 with very small children prefer the intraperitoneal
15 approach.

16 Q. Yes. Sorry, Professor Forsythe, when you were doing
17 them?

18 PROFESSOR FORSYTHE: Just to say that I would agree with all
19 of these and I would also concur with the remarks from
20 Keith Rigg. I would normally use retroperitoneal
21 approaches as well. But just really to underline that
22 we've already spoken about the disparity in the size of
23 the kidney and vessels and how important that is and
24 that points that up. And we've also spoken about the
25 vessel anastomosis and how difficult they can be in

1 children. So I think they are backing up everything
2 that we have said.

3 Q. The book was published in 1992, so this was written,
4 published out, as part of a text to assist and was,
5 therefore, available for all those who were carrying out
6 renal transplants in Northern Ireland to read and,
7 of course, Mr Keane contributed to it, as did a number
8 of his colleagues.

9 I'm going to go on to deal with the part where
10 Mr Keane discusses appropriate vascular anastomoses for
11 the small child when you are using an almost adult size
12 or actual adult size kidney and ask you how what he has
13 written here compares with what he actually did do.
14 Because you're aware of both, as it were.

15 What he says at 5.1.2 is:

16 "When an adult kidney is transplanted into a child,
17 vascular anastomoses do not pose any technical
18 difficulties, provided the graft vessels are anastomosed
19 on to suitably sized recipient vessels such as the
20 common iliacs, aorta or vena cava."

21 And then he goes on to talk about interrupting
22 sutures and so forth, but that's really not the issue.

23 If we pause there, how does that compare with what
24 he actually did do for Adam?

25 MR RIGG: I would agree, that's the approach that I would

1 prefer. With Adam, the external iliac artery was used.
2 From my recollection of his oral evidence, he decided
3 not to use the common iliac artery because that was
4 short, and I'm not sure why he decided not to use the
5 aorta, that that wasn't that clear. Although in the
6 live donor setting, he said he would in that situation
7 send the child elsewhere, to Guy's if the aorta was
8 needing to be used. I don't know whether that can be
9 transferred to the deceased or the cadaveric donor
10 setting or not. I think it might be able to.

11 Q. He seemed reluctant to want to engage with the aorta, if
12 I can put it that way, in much the same way as you said
13 that one of your own colleagues wouldn't do that. So
14 that left him with some other options for larger
15 vessels, none of which he took.

16 MR RIGG: I think if you're not going to use the aorta, the
17 only other option is the common iliac artery. Once you
18 get into the external iliac artery, that is a smaller
19 calibre vessel. Our own experience of that vessel in
20 children and in young adults is not only is it smaller,
21 but it also readily goes into spasm when you touch it,
22 which means it becomes even smaller.

23 Q. From a surgical point of view, what might be the reason
24 why he would have selected the vessels that he actually
25 did select?

1 MR RIGG: It's difficult to answer that question. It's
2 certainly the vessel that is easier to get to and to
3 use. It's one that is nearly always used in the adult
4 setting. But it's not one that I would ever use in
5 a young child.

6 Q. And Professor Forsythe?

7 PROFESSOR FORSYTHE: Likewise, I can't see why that would be
8 used. It is, as we've heard, accessible. It is the one
9 that if you are an adult surgeon would be the one you
10 were most familiar to use. I don't agree that the
11 common iliac vessel is a short vessel necessarily.
12 It is one which we use in different types of transplants
13 on numerous occasions, and I think it would still be the
14 vessel of choice in a paediatric transplant such as
15 this.

16 Q. It has come up. Where I would like to move to is the
17 paragraph immediately after that, 5.1.3.

18 THE CHAIRMAN: It's probably page 257/258.

19 MS ANYADIKE-DANES: Let's try that. 257 or 258, sorry.

20 There we are. What I was reading so that people can see
21 was 5.1.2. If we now go to 5.1.3 placement of kidney:

22 "In children, the pelvis is shallow and
23 underdeveloped. This means that generally, even in
24 older children there is insufficient space to place the
25 graft in the usual retroperitoneal position in the iliac

1 fossa and this can result in compression and kinking of
2 the vessels, especially the vein resulting in graft
3 thrombosis. The loss of some kidneys in children in
4 Belfast was thought to be due to this cause. It is
5 therefore advisable to place the kidneys
6 intraperitoneally to avoid this risk."

7 You have said something about how the kidney might
8 be placed, and explained that, but I wonder if I can
9 take you to the concern here that wherever you place it,
10 you're trying not to have a situation where there is
11 compression and potentially kinking of the vessels.

12 Now, am I right in understanding that what that does
13 is it interferes with the blood supply to the kidney?

14 MR RIGG: That's exactly correct. I think it's right that
15 you wouldn't try and put the kidney actually just in the
16 iliac fossa, but you can use the whole of the
17 retroperitoneal space on the right-hand side of the
18 body. So in the approach -- sorry, it's difficult to
19 describe it.

20 I suppose one way of thinking about it is a tyre and
21 an inner tube, as if the inner tube is the peritoneum
22 and the tyre is the muscle wall, there is always
23 a potential space between the two. Now, when the inner
24 tube is inflated it's right up against the muscle wall.
25 So what we're doing is creating a space between the, if

1 you like, peritoneum and the muscle wall, and we can
2 reflect or move that peritoneum, we detach it from the
3 muscle at the back and move it upwards. That's why
4 I described earlier on that sometimes the incision does
5 need to be longer to enable you to do that, to expose
6 the whole of the posterior wall of the abdomen, and that
7 means that you see the aorta and the cava as well as the
8 iliac vessels. So when you're placing the kidney there,
9 it doesn't just sit in the pelvis, it sits in that space
10 on the right-hand side of the abdomen.

11 Q. Well, can I ask you, with a child the size of Adam, how
12 important is it, this question of placing, whether you
13 call it a near adult size kidney or a 16-year-old's
14 kidney? How important is that?

15 MR RIGG: In fact it's important in anyone having
16 a transplant that the vessels lie comfortably. If the
17 vessels are kinked or if they're stretched, then the
18 blood supply -- if the artery -- if that happens to the
19 artery then obviously the blood supply can't get to the
20 kidney. If it happens to the vein, then the blood can't
21 get out of kidney and the effect is the same. The
22 vessels thrombose or block. So it's of crucial
23 importance not just in children but also in adults that
24 the kidney is placed in such a way that those vessels
25 are lying comfortably. Of course, with a larger kidney

1 in a smaller child where there is less space, then the
2 technical challenge of doing that and placing it are
3 more acute and exact.

4 Q. And I think perhaps it is in answer to what the chairman
5 said, you talked about the possibility that you could
6 leave the surgical wound open and that sometimes --
7 I think Professor Forsythe said sometimes he has done
8 that if you have got a larger kidney and you don't sew
9 it up at that point. What I wanted to ask you is, what
10 are the risks in closing, if I can put it that way, to
11 exert some pressure on the kidney or to do something
12 that could affect the blood supply either to or from the
13 donated kidney?

14 MR RIGG: I think it is always a risk in closing the muscle
15 layer over the kidney. We talked before about the
16 potential space that we're creating so actually we're
17 putting something extra into that space. And the danger
18 is that when you try to bring the muscles back together
19 again, that can actually press on the kidney, and when
20 you press the kidney further down, that will then
21 potentially cause kinking of the artery. What we do
22 when we close the muscle layer is we make sure, first of
23 all, that the kidney is in as comfortable a position as
24 possible, and if the muscle will close comfortably over
25 it without placing undue pressure, then we will go ahead

1 and do that, and we will continue to look at the kidney
2 throughout that closure process. So even if we get to
3 the last stitch when we are closing the muscle and we
4 see the kidney has become bluer or purplish, then we
5 would become anxious about that, we would open the wound
6 again so see what was going on.

7 So the option in those situations where you can't
8 actually get the muscle together safely is actually not
9 to close the muscle layer at that stage but instead just
10 to close the skin, and then you would come back, take
11 the child back to theatre, in two or three days time, by
12 which time some of the initial swelling has settled down
13 and at that stage you're then able to close the muscle
14 layer and the skin.

15 Q. Can you help with how many layers there are? I think we
16 heard evidence that there were three layers and there
17 was some evidence as to who might close which and which
18 might be more significant for the very points that
19 you're talking about.

20 MR RIGG: There are a number of layers, but how they are
21 closed is done differently by different surgeons. So
22 when I talked before about there's the peritoneum like
23 the inner tube, then that is generally not opened.
24 There are actually three layers of muscle and then
25 a layer of fat and a layer of skin over that.

1 Some surgeons will close those three layers of
2 muscle in two layers if that makes sense. So the inner
3 layer will be closed with one stitch and then the outer
4 layer of the muscle will be closed. It's a bit like
5 a sandwich in one sense. Some surgeons will then close
6 the fat layer with a separate stitch and then close the
7 skin with an individual stitch.

8 My own preference is to use one stitch to close up
9 the entire muscle layer and then another stitch to close
10 the skin, so that will be in two layers. I think it's
11 fair to say that the crucial bit of the closure is
12 closing the muscle because that's when there is the risk
13 that pressure can be exerted upon the kidney.

14 Q. When you say close the muscle, do you mean the first of
15 those muscle layers or all of them?

16 MR RIGG: It depends on which approach you're using. If
17 you're using two separate stitches to close the muscle
18 layer, then it's probably the inner layer of those
19 that's most important. If you're doing what I do, then
20 it's the whole muscle layer because I'm only using one
21 stitch to close the whole muscle layer. My colleague
22 may well close things differently.

23 PROFESSOR FORSYTHE: I do, I close with two layers of
24 stitching to the three layers of muscle and will then
25 close the skin on top of that. But I would concur

1 absolutely with the importance of attention to the
2 detail of closing over the top of any kidney transplant.
3 And even as a reasonably experienced transplant surgeon,
4 I would still now often look at the kidney towards the
5 end of the closure, say: that doesn't look right, open
6 it up again, and check to make sure that it was as we've
7 just heard, sitting comfortably, the vessels were not
8 kinked, there was good flow into the kidney and it was
9 looking okay.

10 Q. I'm dealing with this slightly out of turn but it's
11 because it was in one place in the book and rather than
12 jumping backwards and forwards through references
13 I thought we'd follow it through. In this instance we
14 know that the -- well, the evidence suggests, and may
15 actually be, that the first layer was closed by
16 Mr Keane. We don't actually know the technique
17 involved. We will check whether he actually said that
18 or whether he thinks that would be his normal practice.
19 We will check in a minute. But in any event, whatever
20 he did or did not do, the rest of it, of the wound, was
21 closed by Mr Brown and Mr Keane left him to do that as
22 he attended a patient in the Belfast City Hospital.

23 If that was going to happen and Mr Brown not being
24 a transplant surgeon, and never having been in that
25 position before, what if any sort of discussion

1 do you have with Mr Brown to alert him to the very
2 things that you've been telling us now, or is that the
3 sort of thing you just don't tell a paediatric surgeon,
4 they just know that?

5 MR RIGG: Well, in that situation, I as the primary surgeon,
6 and I think if that's what Mr Keane has done to actually
7 close the first muscle layer to make sure you've covered
8 the kidney, the kidney is comfortable, actually closing
9 the other layers is something that any trained surgeon
10 is able to do because the crucial bit is to make sure
11 that the kidney is lying comfortably, and generally once
12 you have closed the first muscle layer, then that will
13 have done that part of the procedure.

14 Q. I was particularly struck by the fact that certainly
15 Professor Forsythe was saying even he as an experienced
16 transplant surgeon would be looking right at the end to
17 make sure everything was still as it was supposed to be,
18 but he knows what he's looking for and he know what he's
19 going to do if it's not quite what he expects it to be.
20 So what I was really putting is: is this anything that
21 you discuss with the assistant who's not a transplant
22 surgeon?

23 MR RIGG: Professor Forsythe was actually going to talk
24 about the closure of the inner layer, that once you've
25 closed that you can't see the kidney anymore anyway.

1 PROFESSOR FORSYTHE: I think the key here is, and as you
2 say, looking back at this distance it is quite hard even
3 after having read the evidence and having read the
4 transcript of Mr Keane's evidence, I wasn't exactly sure
5 what had happened.

6 THE CHAIRMAN: Nor was he because my note of what he said
7 was, "I can't actually recall what I left Mr Brown to
8 do". On the other hand, Mr Brown said that he has
9 closed many wounds as a paediatric surgeon and he also
10 discussed the possibility of leaving the wound open and
11 coming back to it in a few days, which you've already
12 indicated is a perfectly acceptable option.

13 PROFESSOR FORSYTHE: That is a perfectly acceptable option.
14 I think if a layer -- if the first layer was closed over
15 the kidney by Mr Keane and that, at the end of that
16 first layer of closure, everything was satisfactory, and
17 Mr Brown was then left to close the rest of the wound,
18 then I have no problem with that at all.

19 If Mr Brown was asked to close the first layer over
20 the top and the kidney would no longer be seen and
21 Mr Keane had left the theatre, I would have concerns
22 about that. That is even though Mr Brown is a very,
23 very experienced paediatric surgeon, I would have
24 concerns that he has not got the experience to realise
25 the importance of that fine attention to detail of

1 closing the layer over the top of the kidney. I suspect
2 that it's going to be very difficult to find out the
3 detail of that, but that would be my view.

4 THE CHAIRMAN: It's particularly difficult because Mr Brown
5 didn't remember closing up at all, and Mr Keane wasn't
6 sure what he closed.

7 PROFESSOR FORSYTHE: I can understand that. It is a long
8 time ago and I can understand that. But I guess that
9 I'm trying to describe the principle rather than
10 necessarily what happened.

11 MS ANYADIKE-DANES: Just so that I understand the potential
12 implications of that, is if there were to have been any
13 kinking, and nobody knows whether there was or there
14 wasn't, all one can tell is that when the kidney was
15 examined at autopsy one could see the cellular change.
16 It has been the subject of reports by two pathologists
17 and both of them have formed the view that the kidney
18 failed in or about the time of the transplant. You may
19 not be able to answer this because it may not be your
20 area, in which case please say, but the sort of cellular
21 change and damage that Professors Berry and Risdon
22 described, do you know if that's consistent with the
23 kind of kinking that you were talking about that could
24 happen?

25 PROFESSOR FORSYTHE: It is consistent with kinking, but it's

1 consistent with a whole load of other things as well.
2 What appears to be very likely is that the kidney
3 infarcted, lost its blood supply some time after the
4 anastomoses were performed. Whether that was because
5 the anastomoses -- there was a problem with the
6 anastomoses, whether it was because there was a small
7 vessel that was used, which had not enough flow in it,
8 whether there was kinking or whether because of Adam's
9 sad crisis problem immediately after surgery there were
10 flow problems to the kidney, I don't think we will ever
11 know the cause.

12 Q. When you say your first possibility of the range of them
13 was that there could have been a problem with the
14 anastomoses, what does that mean and how does that
15 produce this sort of result?

16 PROFESSOR FORSYTHE: In those circumstances, any surgeon,
17 even an expert and experienced surgeon, can during the
18 anastomoses cause a problem, catch a stitch, put
19 a stitch in the wrong place, which means that the
20 anastomosis, rather than being as open as possible, is
21 slightly stenosed, it slightly closed down, and that can
22 happen to any surgeon, and initially you could have flow
23 in the kidney, but thereafter it infarcts because the
24 artery closes off.

25 Q. Thank you.

1 MR MILLAR: Again for the witness' benefit from the autopsy
2 report is that the vascular attachments -- the
3 attachments to the kidney were found all to be intact.
4 So we know that they were in tact. There's no reference
5 to anything being found to be kinked. There no
6 reference to anything found to be malpositioned. We
7 know all of that from the autopsy report.

8 THE CHAIRMAN: From Dr Armour's report, yes.

9 MS ANYADIKE-DANES: Thank you very much. In due course,
10 Dr Armour will give her evidence so she will able to see
11 whether at autopsy you could tell whether anything had
12 been malpositioned.

13 THE CHAIRMAN: That's the point. Mr Millar is right on the
14 evidence on the paper.

15 MS ANYADIKE-DANES: Because we're at this and in fairness to
16 Mr Keane, at paragraph 5.1.4 when he's talking about
17 fluid balance he deals with a number of things in terms
18 of babies and very young child and cross-clamping the
19 abdominal aorta and so forth. I think it's the
20 penultimate sentence, dealing with the possibility of
21 hypertension and falling out put on re-perfusion he
22 said:

23 "This can be counteracted by ensuring that there is
24 adequate fluid replacement as judged by the central
25 venous pressure before the kidney is perfused. If this

1 is neglected, the kidney may initially perfuse but the
2 perfusion may not be maintained, therefore placing the
3 graft at risk of thrombosis."

4 And would you accept that?

5 PROFESSOR FORSYTHE: Yes, indeed. I think we covered that
6 at the time when we were saying that the levels of CVP
7 that we were wanting around the time when the clamps are
8 released -- he's saying the same thing.

9 Q. Thank you. I've just been shown the reference, so far
10 as we have it, as to what Mr Keane says happened.
11 I think it's 26 April, the transcript, starting at
12 page 123. Actually, in fairness, let's start at line 2:

13 "If we go then to your departure, after you've had
14 your discussion with Mr Brown, you're both happy with
15 the perfusion and the colour of the kidney, what if
16 anything do you say to Mr Brown just before you leave?

17 "Answer: Give me an immediate call if anything is
18 happening. If anything happens to Adam, I'll be back
19 here. That's all I would have said."

20 And then I ask:

21 "You left him to sew up?

22 "Answer: Yes.

23 "Question: Is it possible that in sewing up all
24 through the muscle layers which you have said was part
25 of what he would have to do that there could be any

1 pressure on that new kidney that you have just
2 transplanted, which could have affected it or kinked its
3 vessels in any way?

4 "Answer: No.

5 "Question: Absolutely sure about that?

6 "Answer: Well, if I can expand. I said I left --
7 by saying ... That statement is sew the wound. As
8 a matter of courtesy, I don't know whether I did this
9 but as a matter of professional courtesy to Mr Brown
10 because of a surgical issue the first layer of closure
11 of three is more technically difficult. In other words,
12 it's easier if Mr Brown -- if I just wait for him to
13 close the first layer and then he continues the
14 procedure as I'm now gone. So I haven't surgically, if
15 you wish, committed myself."

16 And then further down at line 18:

17 "Can I ask you this: can you actually remember --

18 "Answer: No.

19 "Question: -- precisely what you left him to do?

20 "Answer: No."

21 MS WOODS: Sir, can we look at the section in between that?

22 MS ANYADIKE-DANES: Sorry, yes, of course, I beg your
23 pardon. Pick it up at 6:

24 "I just said wound closure it's staged I'm not sure
25 that ..."

1 Then I say:

2 "I'm sorry, I specifically asked you that. I asked
3 you whether what you meant was -- and we will checking
4 the transcript so I hope I'm not misleading you.
5 I believe I asked whether you meant that he was being
6 left to sew up all through the muscle layers and I think
7 you said yes to that?

8 "Answer: This is something I would -- I would
9 rather explain. Maybe not all of them. There are three
10 layers. Obviously, when you're colleague, the first one
11 is just easier to do. I'm not sure but --"

12 Then I ask him the question, the upshot of the whole
13 thing I think is summarised by the chairman, but
14 nobody's entirely sure what either Mr Keane or Mr Brown
15 did.

16 THE CHAIRMAN: Can I just ask you one thing, which you said
17 to me a few minutes ago when I raised this point,
18 Professor Forsythe? You said you didn't find it
19 surprising that Mr Brown didn't remember closing the
20 wound or to what extent he closed the wound in 1995; is
21 that right?

22 PROFESSOR FORSYTHE: Correct.

23 THE CHAIRMAN: This was the first time he'd been involved in
24 a paediatric renal transplant. To put it bluntly,
25 is that not a big deal? It's his first paediatric renal

1 transplant, he's worked with Mr Keane, he closes the
2 wound apparently, and the child dies. Would you not
3 remember in that scenario --

4 MS WOODS: Sir, with respect, I think that's really taking
5 it a bit too far in terms of speculation, asking
6 Professor Forsythe to comment on whether it's surprising
7 whether Mr Brown can remember something 17 years later.

8 THE CHAIRMAN: You prefer the first answer, which was you're
9 content for Professor Forsythe to say that he's not
10 surprised that he doesn't remember but you prefer me not
11 to explore --

12 MS WOODS: Sir, I am not saying I prefer either. I'm not
13 saying I'm not sure it's appropriate for Professor
14 Forsythe --

15 THE CHAIRMAN: I notice you didn't interject when he gave
16 his first answer that he's not surprised Mr Brown
17 doesn't remember. So when I tried to tease that out
18 a bit you object to me ask is it not surprising? That's
19 a bit inconsistent.

20 MS WOODS: Sir, maybe I should have got on my feet earlier
21 but I just don't think it's appropriate to be
22 speculating in this instance.

23 THE CHAIRMAN: I think we both know why you didn't.

24 If a surgeon was involved for the first time in an
25 operation, in which he played an assistant's role or

1 comparatively minor part which ends a very short time
2 later in effect with the child's death, would one not
3 expect a surgeon to remember that?

4 PROFESSOR FORSYTHE: I see the point the chairman's making.
5 I guess my first answer was based around a senior
6 surgeon remembering an operation from many years back.
7 I think the point that you're making is this wasn't an
8 operation, this was the very first kidney transplant on
9 the child that he'd been involved in and ended up with
10 a tragic outcome.

11 So I can see what you're saying and I can see you
12 might remember what you were doing at the time. But
13 I suspect if you didn't realise the seriousness of that
14 at the time and write something down, chronicle
15 something at the time, then it might be very hard to go
16 back at this remove.

17 THE CHAIRMAN: Yes, but then perhaps it leads on to
18 a slightly different point. It might then depend on
19 when you're first asked in any post-death investigation
20 about your contribution.

21 PROFESSOR FORSYTHE: I think that's correct.

22 THE CHAIRMAN: If you'd been asked over the next couple of
23 days after this disaster, he clearly would have
24 remembered.

25 PROFESSOR FORSYTHE: Yes. I think that's right, and one of

1 the things that we have noted is the relative lack of
2 a formal review of the case afterwards, as far as we can
3 see, and I guess a formal review in terms of mortality
4 and morbidity meeting or some other way in which that
5 whole case was reviewed and lessons tried to be learned
6 does not seem to have happened. And I guess that would
7 have seared it into your mind in much more detail.

8 MS ANYADIKE-DANES: Mr Chairman, I wonder if we might pull
9 up 059-060-146. In keeping with others who have been
10 directly involved, this is Mr Brown was asked to provide
11 some sort of statement about exactly what had happened,
12 and some of those who provided statements went on to
13 provide them as depositions to the coroner. As it
14 happened, Mr Brown wasn't called to give evidence in the
15 inquest, but this was his statement and you see it.
16 It's written on 20 December 1995. So it's quite close.
17 So at that stage, just to follow up with the chairman's
18 comment, there seems to be no reference in there to him
19 closing the wound at all, irrespective of which bit he
20 might have closed.

21 So I suppose it's not a matter of whether you're
22 being asked do you remember it 17 years later, it's
23 actually do you remember it three weeks later?

24 MS WOODS: Sir, given that Mr Keane cannot remember what he
25 did and didn't leave to Mr Brown, a possible explanation

1 for that could be that Mr Brown wasn't left to close any
2 of the wound. We just don't know.

3 THE CHAIRMAN: Well, I mean, part of this comes from the
4 fact that Mr Keane's statement, what became his evidence
5 to the Coroner, was exceptionally short and
6 uninformative. It may, of course, be that in fact
7 Mr Keane did close it, although that seemed to become
8 increasingly unlikely as we got into more and more
9 exploration of Mr Keane's reasons for leaving early and
10 so on. But I accept your general point that there is
11 a lack of certainty and there are a number of possible
12 alternative interpretations about what happened.

13 MS WOODS: Thank you, sir.

14 MS ANYADIKE-DANES: I wonder if we might go on and deal with
15 blood loss.

16 MR MILLAR: Sir, in order to avoid any need for me to come
17 back, which I think will foreshorten matters, I think
18 it's important that both Mr Rigg and Professor Forsythe
19 have an opportunity to just review and help the inquiry
20 in relation to Professor Koffman's evidence on the
21 acceptability of using the external iliac vessel for the
22 anastomosis. I won't have to raise it.

23 MS ANYADIKE-DANES: Of course. I have been slightly
24 deflected from where I wanted to be. Thank you very
25 much indeed.

1 MR MILLAR: 094-007-032.

2 THE CHAIRMAN: Thank you.

3 MS ANYADIKE-DANES: Yes, this is Professor Koffman's report.

4 If we perhaps start with paragraph 3.3 and the second
5 sentence:

6 "The principle of the surgery is the same to both
7 children and adults and the major decision would have
8 been about whether to anastomose the transplant renal
9 vessels (artery and vein) to the iliac vessels as in
10 adults or because of Adam's small size to choose larger
11 blood vessels such as the aorta and vena cava for these
12 anastomoses, which would entail a different approach.
13 In the event they chose to use the iliac vessels and
14 although this is not the approach I would use normally
15 for a four-year-old 20 kilogram child, it is used by
16 some surgeons carrying out paediatric transplants.
17 Therefore I would not criticise the use of this
18 approach."

19 MR MILLAR: On page 039 in the same series just for
20 completeness.

21 MS ANYADIKE-DANES: Sorry, I beg your pardon. This is part
22 of his concluding remarks at 4.7:

23 "The approach to the iliac vessels which was extra
24 peritoneal would not have been my choice of approach,
25 but it is a perfectly acceptable approach used by some

1 of my colleagues in children of this size."

2 So there are two points actually that
3 Professor Koffman is using, which is why I didn't
4 immediately go on to that. The first point is to deal
5 with the anastomosis point, which is which vessels
6 do you choose?

7 The second point is to do with the approach to those
8 vessels, if I can put it that way, and was the point
9 that you, Mr Rigg, were explaining before. But we've
10 got them both now so let's deal with the first.

11 In both cases of course you see that he says,
12 "I wouldn't typically do that", but he acknowledges that
13 there are colleagues of his that would do that.

14 MR RIGG: We probably need some further clarification from
15 Mr Koffman because he talks about iliac vessels but he
16 doesn't specify whether that's the common iliac vessels
17 or the external iliac vessels and there is obviously a
18 clear difference between the two.

19 MR MILLAR: Just to clarify this, we know from his
20 description of the operation at the beginning of his
21 report that he's read the operation note and he knows
22 precisely what Mr Keane did and he knows that he did the
23 anastomosis to the external iliac vessel, and I think
24 his comment about the iliac vessels needs to be seen
25 in that context.

1 If you go to page 030 at paragraph 2.7, he comments
2 in second sentence:

3 "The approach was via the loin to the iliac vessels
4 which were mobilised. The renal vein was anastomosed to
5 external iliac vein, the two common arteries on a common
6 patch were anastomosed to the iliac artery."

7 He knows --

8 THE CHAIRMAN: He's got the detail.

9 PROFESSOR FORSYTHE: We would remain to ask him is he happy
10 with the approach and using of the external iliac in
11 this situation because we understand that you have the
12 opportunity to ask him that question directly.

13 MS ANYADIKE-DANES: You mean why it wouldn't have been his
14 practice?

15 PROFESSOR FORSYTHE: Correct.

16 Q. Thank you.

17 MR HUNTER: I wonder just before we move on if one very
18 quick point could be put to the two surgeons. I wonder
19 if they could be asked if they had closed the wound,
20 would they make a note of it after they'd made closure
21 of the wound or would they make a note of it and then
22 leave the assistant?

23 THE CHAIRMAN: Because Mr Brown -- yes. It's a point that
24 the notes are not signed to indicate who closed the
25 wound. Mr Brown, if my recollection is right, said

1 that if he had closed the wound it would be his normal
2 practice to have made a note to that effect. Is that
3 right?

4 MR HUNTER: Yes. The note was made by Mr Keane and that's
5 the point that --

6 THE CHAIRMAN: The note was made by Mr Keane to the effect
7 that the wound was closed but Mr Keane now says he
8 didn't do it, Mr Brown did it. And Mr Brown said: if
9 I had closed the wound, I would have made or signed the
10 note. If there's this switch from the surgeon to the
11 assistant, would you expect the fact of that switch to
12 be recorded in some way?

13 MR RIGG: I wouldn't in that situation. If I recall at the
14 beginning of the operation, it said it was Mr Keane and
15 Mr Brown who were doing the operation and Mr Keane wrote
16 the operation note. I don't think you would expect
17 someone to specify if they did a particular part of the
18 operation. I think if it had been two separate
19 operations done under the same anaesthetic, by two
20 separate surgeons, then you would expect that to be
21 written down. But not the wound closure.

22 If I could go back to the second point about the
23 intraperitoneal and extra peritoneal --

24 MS ANYADIKE-DANES: If we just stay with that point because
25 we can actually see Mr Keane's note in the records.

1 It's 508-035-134 and if you could put alongside it 135.
2 Thank you very much. You can see the note there. In
3 fact it's signed in two places. And you have commented
4 on the brevity of the note, but in any event there it is
5 as to what he did.

6 And then he signs it, and then you can see:

7 "Kidney perfused reasonably well at end."

8 And he signs that.

9 You'll have read in his evidence the reason for why
10 it appears in that way. The question I was going to ask
11 you is: you have said, well, you wouldn't expect
12 Mr Brown to go and sign like that, if you look at the
13 log, they're both there as a surgeon, he's the assistant
14 surgeon. But would you have expected Mr Keane to have
15 made that note?

16 MR RIGG: About the wound closure? I would, yes. I think
17 it's all part of the same operation and you'd expect the
18 same person to be doing that.

19 Q. Thank you very much. You were going to go on to the
20 second point, I do beg your pardon.

21 MR RIGG: It was just about the -- I think I explained
22 before about the difference between the intraperitoneal
23 approach and the extra peritoneal approach. As I
24 understand, Mr Koffman tends to advocate the
25 intraperitoneal approach in young children, whereas my

1 practice is to do the extra peritoneal approach. And if
2 you were to ask a group of surgeons round the country
3 who did a lot of paediatric transplants it will be
4 roughly half and half. So each approach is equally
5 appropriate.

6 Q. So for you that's not really the issue. The issue is
7 what vessels are anastomosed which donor vessels?

8 MR RIGG: Which recipient vessels --

9 Q. Are anastomosed to which donor vessels. That's the
10 issue for you.

11 MR RIGG: It's the recipient vessel that's the key thing for
12 me, yes.

13 Q. Thank you. Blood loss.

14 PROFESSOR FORSYTHE: Mr Chairman, just before that operation
15 note goes away, just for clarity, obviously the closure
16 of the operation is noted on the operation note.
17 Is that being made clear, the closure is noted? So it
18 says, "Closure", and then it gives the different layers
19 of closure. But it simply says that closure was done.
20 It obviously doesn't tell us who did it.

21 THE CHAIRMAN: And then signed by Mr Keane.

22 MR HUNTER: The point is that if Mr Keane had left and had
23 left Mr Brown to close up, would it be normal for
24 Mr Keane or for a surgeon to make the note about the
25 closure of the wound before he leaves and then leave his

1 assistant to close the wound? That's the point.

2 PROFESSOR FORSYTHE: No. I -- it's very hard to say.

3 It would not be usual for a surgeon who simply does the

4 closure to do that, a separate operation note for that.

5 MS ANYADIKE-DANES: Can I ask you this: I can't actually

6 precisely decipher exactly what is written there in

7 terms of closure, but is that necessarily how the wound

8 would have been closed or were there options?

9 MR RIGG: There are always options. I think what that's

10 meaning is vicryl, which is the first thing, is probably

11 for the inner muscle layer. Catgut for the second

12 muscle layer. Vicryl for another layer, whether that's

13 the third layer of muscle or the fat layer is difficult

14 to say. And PDS for the skin.

15 Q. And are there options?

16 MR RIGG: Yes. There's a whole range of suture materials

17 that could be used. They wouldn't be my preferred

18 suture materials, but equally other people would use

19 them.

20 Q. I think the point that's probably being got at is if

21 there were options, and we won't know what suture

22 materials were available, but we can know, we can check

23 what suture materials are available in the operating

24 theatre, but I think the point that was being made is if

25 there was a choice, is this Mr Keane being proscriptive

1 as to what Mr Brown should use because he's written in
2 the note as he's left before the event has happened, or
3 I think what they're getting at is might it indicate the
4 fact that Mr Brown had actually completed the closure
5 but that's a level of speculation?

6 MR RIGG: It's speculation.

7 Q. But I think that's what he's indicating.

8 MR RIGG: It would be speculation.

9 Q. Thank you.

10 THE CHAIRMAN: Blood loss?

11 MS ANYADIKE-DANES: Yes, thank you.

12 If one looks at 058-003-003, you can see the low
13 haemoglobin that was received there at 9.30 or 9.32.
14 You have looked at the records of the surgery,
15 do you have a view as to whether, leaving aside whether
16 it was a lot of blood loss for a transplant surgery,
17 do you have a view of whether there was significant
18 blood loss for Adam?

19 MR RIGG: I think if we look at the volume of blood taking
20 the conservative amount, which I think was 468 ml, and
21 if we use 20 per cent of the blood volume as being major
22 blood loss, then there was major blood loss throughout
23 the length of the operation. But I think it's also fair
24 to say that the blood pressure and the pulse remained
25 relatively constant throughout the operation which would

1 infer that there wasn't any sudden periods of blood loss
2 but it was a gradual loss throughout.

3 What we do know is with any re-operative surgery,
4 you know, because a surgeon had been in that place
5 before, is that there are always more adhesions and,
6 therefore, there is always the possibility for more
7 blood loss. But I think it's been a constant, perhaps
8 an ooze rather than sudden bursts of bleeding.

9 Q. So although there might have been a significant amount
10 of blood lost over the course of the surgery, was it the
11 kind of blood loss that would have caused you any
12 concern in view of the other results that are being
13 achieved for his blood pressure and so forth?

14 MR RIGG: I think it's within the spectrum of what you might
15 expect after reoperative and the fact that the blood
16 pressure and the pulse rate remain constant would
17 certainly mean I have no anxiety that it was recognised
18 and dealt with appropriately.

19 Q. I wonder if I can put to you something that I put to the
20 expert anaesthetist. 058-007-021. That is, so far as
21 they have it for the surgery, a running total of the
22 swabs.

23 THE CHAIRMAN: I take it you have seen this document and
24 you've been able to see the discussions about it over
25 the last number of days of evidence?

1 PROFESSOR FORSYTHE: We haven't seen the last number of days
2 of evidence.

3 THE CHAIRMAN: You haven't seen Dr Haynes then?

4 PROFESSOR FORSYTHE: No.

5 MS ANYADIKE-DANES: Can we go with the fifth or sixth line
6 down on the blood loss, 67. There's a series of figures
7 and then you get to 67, and you can see what the level
8 of those figures were. You had just said that you
9 thought because the blood pressure had remained where it
10 was that that indicated that it might just have been
11 a gradual or steady ooze as opposed to a sudden loss.
12 Does this help you as to whether the might have been
13 a moment when there was a more significant loss of blood
14 than any other?

15 MR RIGG: Can I just clarify, is this blood loss as weighed
16 by the swabs?

17 Q. Yes. There's a cumulative total on the right-hand side,
18 so this is each swab, as I have understood it.

19 MR RIGG: What that may -- again, it's speculation. There
20 are different size swabs that can be used during an
21 operation. So this may be a larger swab, or it could
22 equally mean that one swab has just been left there for
23 a longer period of time and, therefore, it's accumulated
24 more blood. It doesn't necessarily mean you've had
25 a lot of blood all at once, it's just it's been there

1 for a longer period of time.

2 What does happen sometimes is that there are the
3 swabs you use on the outside to dab where it's bleeding,
4 but sometimes you may put a swab inside the wound and
5 that can stay in for a period of time. But when you
6 remove it, it's fully soaked because it's been
7 accumulating things over a period of time. So it could
8 be any of those things, and again it's speculation. But
9 that doesn't necessarily mean there's been a sudden
10 amount of bleeding.

11 Q. Could it mean that, though, that there had been a sudden
12 amount?

13 MR RIGG: Well, it could do, but equally it may not do.

14 Q. I understand. If we go further down, you'll see
15 a series of figures which are struck through and
16 a lighter series of figures next to them, starting with
17 398 and ending with 27.9. The evidence from Staff Nurse
18 Mathewson, who's the person recording this, is those
19 swabs were also used to -- were soaked and used to cool
20 the kidney and, therefore, the calculation that she's
21 made on the right-hand side is to attribute half of that
22 weight to blood loss. That's how they end up with their
23 running total, if I can put it that way.

24 Is that something that would be familiar to you,
25 that way of cooling the kidney and trying to determine

1 how much of the weight of the swabs might be blood and
2 might be the solution?

3 MR RIGG: Yes, it would. I think in children, blood loss is
4 vitally more important to measure than perhaps in adults
5 so whereas in adults we wouldn't necessarily go into
6 this length of detail, but in children we always would.
7 Therefore there are the fluids that can be accumulated.
8 So there are the fluids that may be used in the swabs
9 that are wrapped round the kidney. There may be urine
10 that's in the bladder, and all those things do need to
11 be recorded separately as far as is possible. Obviously
12 if you have a swab that is soaked with both iced saline
13 or whatever, as well as blood, it can be difficult to
14 determine how much of each is there, so it does have to
15 be guesswork but, yes, familiar with those concepts.

16 Q. Thank you. I wonder if I can move to removing the
17 kidney from ice. You have helped us with the cold
18 ischaemic time. We're moving on to an issue that arose
19 in relation to the warm ischaemic time. The first
20 question I would like to ask you, if we pull up
21 058-009-027, this is the kidney transplant form. The
22 first part of it obviously is filled in at the donor end
23 and we have section 2, which is going to be the
24 recipient's details if I can put it that way.

25 You can see that block:

1 "Section 2 to be completed the recipient surgeon."

2 In fact, we know that it was completed or signed for
3 by the transplant coordinator.

4 THE CHAIRMAN: Which she said was normal in Belfast at the
5 time. It's not what the form says but that's what
6 normally happened at the time.

7 PROFESSOR FORSYTHE: Quite often it happens elsewhere in the
8 country. It's the transplant surgeon's duty and
9 responsibility but it can be delegated and often is
10 delegated.

11 MS ANYADIKE-DANES: That was exactly the question I was
12 going to ask you. The responsibility for ensuring that
13 the information on it is accurate is the transplant
14 surgeon's?

15 PROFESSOR FORSYTHE: Correct.

16 Q. If we go to 26 April, that transcript, page 49. What
17 I want to ask you is about the recording of times so
18 that one can get an accurate picture of what that warm
19 ischaemic time might be. Mr Keane has talked about two
20 occasions in his evidence when he took out the kidney to
21 deal with it. The first occasion was, I think it might
22 have been referred to as a rough trim, or something of
23 that sort, an inspection, rough trim. And then he did
24 more bench work on it at a second time. The point
25 I want to ask you is should the times when the kidney is

1 actually taken out of whatever is cooling be actually
2 recorded?

3 PROFESSOR FORSYTHE: No, because the times to which you
4 refer, it shouldn't be taken out of ice. If I may
5 explain, in our report we said that the kidney is
6 transported to, let's say, Belfast in an insulated box.
7 It is then removed from that box and all of the back
8 table work, the preparation, the preparatory work for
9 the transplantation is then carried out, still in ice.
10 The kidney is taken to a bowl which has slushed saline
11 within it. So the trimming work, if that's what to
12 refer it to, is for us both and widespread, is done with
13 the kidney still in ice. And that's obviously to avoid
14 any warming up, which could potentially damage the
15 kidney.

16 Now, I wasn't completely clear from Mr Keane's
17 evidence whether he was carrying out the preparatory
18 work on ice or whether he was doing it out of ice. If
19 you were taking the kidney out of ice, that would be
20 unusual but if you were taking the kidney out of ice,
21 then you should record that time because the kidney is
22 beginning to warm up during that period.

23 If on the other hand you were leaving it in ice,
24 then it's remaining cold so it's still the cold
25 ischaemic time and so you do not need to record it.

1 Q. In fairness, I think Mr Keane says at line 14 of
2 page 49:

3 "There's a confusion about this. Kidneys can be
4 taken out of ice for 2, 3 seconds and put back. That
5 doesn't mean they're going to get very warm. And
6 there's one additional procedure in a child transplant
7 operation which is not standard in adult that's the
8 position of the size of this adolescent kidney
9 in relation to Adam."

10 And then when he's asked about the relevance of that
11 for taking it out of the ice, he says he does that:

12 "... trying to fix in my mind where this is going
13 on, how it's going to fit. Have I got enough space to
14 put this kidney. And I'm visualising and so forth."

15 So he seems to have a time when it does come out of
16 ice, albeit briefly.

17 PROFESSOR FORSYTHE: Okay, we're now moving on to something
18 that's different. I hope I've tried to get that over.
19 So now we're talking about for me a relatively momentary
20 removal from ice, simply to -- a very physical thing of
21 will the kidney fit there? Or does it look okay? Are
22 the vessels lying nicely? And then putting it back into
23 ice again. That's a matter of seconds and the kidney
24 will not warm up appreciably in that time, and so that
25 would not be recorded. But the previous thing that

1 I referred to was the preparatory work, which takes
2 significantly more than seconds, and if you're doing it
3 properly and you're doing it particularly when there are
4 complex vessels, as we have described here, then that
5 certainly should still be on ice and that should be done
6 with -- as we described in our report, that would be
7 normally done in a separate room in the theatre, sitting
8 down with a the ability to concentrate to give the job
9 the concentration it requires.

10 Q. And you wouldn't record the time when you started to do
11 that?

12 PROFESSOR FORSYTHE: No, you wouldn't record that time
13 because the kidney is still cold.

14 Q. I think there's a reference to Mr Keane saying something
15 quite like that at page 52, line 6. When he's defining
16 the taking the kidney out of ice:

17 "Is that time when you take the kidney out with the
18 intent to start the anastomosis, although you may, in my
19 individual practice have perhaps the final trimming to
20 do. I would never put it back into the ice as soon as
21 I had taken out to start this procedure."

22 But in any event, what he's trying to suggest is
23 that he considered taking out of ice the time when you
24 take it out to anastomose. Does that accord with what
25 you would say?

1 PROFESSOR FORSYTHE: Absolutely.

2 Q. If we can deal then with his definition of warm
3 ischaemic time. One finds that at 54, line 13 to 17.
4 He says:

5 "Most urologists, as I practised in transplantation,
6 warm ischaemia time defined blood in the kidney not, you
7 see, up to the point when I released the clamp."

8 It got a bit confusing after that. But in any
9 event, I think that's his definition there.

10 PROFESSOR FORSYTHE: Like you, I was a little confused in
11 terms of the oral evidence. But this is not
12 a definition that either of us recognise, nor is it
13 a definition that I've ever seen before. The second
14 warm ischaemic time is the time when the kidney is
15 removed from the ice with the intention of starting the
16 anastomosis, and it is the time that it takes you to do
17 the arterial and venous anastomosis and the clamps are
18 released and the kidney is then perfused with blood. So
19 the second warm ischaemic time is a well-defined time as
20 I have just described. I do not recognise this
21 definition.

22 Q. He does take issue with yours. If we go over the page
23 to 55, line 16, he says:

24 "As I understand it, the definition of the term
25 kidney out of ice is what my definition."

1 And that's one of the things you have to record on
2 the form:

3 "My definition of what the transplant surgeons are
4 saying is the second warming up time. My definition of
5 kidney out of ice, warm ischaemia to a urologist
6 implies -- implicit in it is the presence of blood back
7 in the kidney. By definition therefore I've had to
8 release one of the clamps. The reason for that is
9 whereas the second warming up time the kidney out of ice
10 time is controllable once you start putting blood --
11 let's say Adam's, which it didn't, started ..."

12 I'm not sure it goes on in a way that's particularly
13 helpful. But in any event he has taken issue --

14 THE CHAIRMAN: It's line 6. Go to the next page again.

15 MS ANYADIKE-DANES: Yes:

16 "Kidney out of ice equals their definition of second
17 warming up. But as I practised it and defined it, the
18 critical thing, the actual area where you damage it if
19 you release the clamp and had to put it back on again
20 and that's how urologists define warm ischaemia."

21 PROFESSOR FORSYTHE: I disagree.

22 MS ANYADIKE-DANES: Are you aware of the fact that
23 urologists define warm ischaemic time differently to
24 transplant surgeons?

25 PROFESSOR FORSYTHE: No.

1 Q. Thank you. Just while we're in this period of potential
2 warming up of kidneys, Mr Keane went on to explain how
3 he would have tried to keep the kidney cool. It starts
4 at page 59 at line 25, I think. I had put to him some
5 photographs, which I think you've already seen, of
6 a surgeon working on the kidney and then also putting --
7 just to be fair to you let's pull up the photograph that
8 I did show him. 300-045-063.

9 There we are. There is a surgeon working on the
10 kidney. I showed him that picture and he thought that
11 that was the final trim for that particular surgeon.
12 I was putting to him that in that position, that that
13 kidney is exposed, exposed to the atmosphere, to the
14 lights in the operating theatre and so on. He went on
15 to say that he actually wouldn't do it like that. This
16 is at line 25:

17 "We were trained in the Hammersmith to wrap the
18 kidney as if it's in a duvet, nothing showing. The
19 urethra would be flicked up and the only thing that
20 would be coming out that's in contact with warm air or
21 cold are the vessels. And you see that kidney is
22 completely exposed to warm air [the one that I had shown
23 him]. I was trained completely differently. I was
24 trained to soak or swab, just have the vessels coming
25 out and the kidney's now wrapped in an ice soaked swab

1 with the ureter flicked up on to it so that no part of
2 the kidney ever saw warm air. That is how I did my 250
3 transplant procedures."

4 Do you have an observation to make about that?

5 PROFESSOR FORSYTHE: Could we go back to the photograph,
6 please?

7 Q. Yes, of course. 300-045-063?

8 PROFESSOR FORSYTHE: For me, this is not a picture of the
9 second warm ischaemic time, because that is the kidney
10 actually being sown in, in place. This is a picture of
11 what I was calling the back table surgery. Almost
12 certainly underneath that white swab that you see
13 there is ice, almost certainly fluid underneath that as
14 well. So I would normally have the kidney actually
15 floating in ice, in slushed ice, but almost certainly
16 that will still be cold, and I suspect what you see
17 there -- I don't think this was a photograph that we
18 provided. I think you provided it.

19 Q. Yes.

20 PROFESSOR FORSYTHE: I think what they're doing there is
21 they're joining two arteries. You can see there is
22 a catheter going in, just where the forceps are there.
23 They're joining two arteries together. So that is the
24 back table preparatory work prior to the second warm
25 ischaemic time before the kidney is actually taken to

1 the anastomosis.

2 Q. I wonder if we could pull up 300-052-070. There we are.

3 This was another photograph that was shown to show the
4 two surgeons working and putting the kidney in.

5 Mr Keane was critical --

6 MR MILLAR: That's actually the photograph that Mr Keane was
7 commenting on as not recognising the technique. I think
8 this photograph is the important one for the bit of
9 evidence that's just read out.

10 MS ANYADIKE-DANES: Thank you very much indeed. He was
11 critical of that. Firstly, he said he would have
12 wrapped the kidney up in a different way. And secondly,
13 he said that they would never have had a situation where
14 the hand of the surgeon could come in contact with the
15 kidney in that way. So his view was that even when you
16 were working on the kidney in that way, nonetheless it
17 was completely enveloped in something that was keeping
18 it cool all the time, and I think that was part of the
19 reason why he doesn't accept that there is the extent of
20 warm ischaemic time that was being suggested to him.

21 PROFESSOR FORSYTHE: I would agree with Mr Keane that this
22 does not look as if the kidney is protected to the level
23 that I would and I suspect Mr Rigg would either.
24 We would normally have, as Mr Keane described, the
25 kidney wrapped up to as great an extent as possible in

1 a cooled swab. Everything that you're doing is to try
2 and keep the kidney cold until such time as the blood is
3 released into the kidney. So I would agree with
4 Mr Keane that this isn't a good photograph of
5 demonstrating what the two of us would do or indeed what
6 he describes doing.

7 However, where I depart from him is that across the
8 world, it is known that, as you are performing this,
9 even with no direct contact between the fingers, the
10 gloved fingers of the surgeon and the kidney, even with
11 it wrapped up in this cold manner, even with fluid, cold
12 fluid being put on to it, the kidney is warming up.
13 I have read the transcript and the evidence that I think
14 you put to Mr Keane about the research that I did many
15 years ago, way prior to 1995, but that research was done
16 with a swab around the kidney in exactly the manner
17 described. So we know that during the -- at least 20/30
18 minutes it takes to do the anastomosis, we know the
19 kidney is warming up.

20 The kidney is warming up because of direct contact
21 with the patient, who's warm. Also, with contact with
22 the surgeon's hand. We were, I was going to say,
23 inaccurate or at least we weren't clever enough with the
24 language we used in our report. We said, "Direct
25 contact with the surgeon's hand". Clearly it's not

1 direct, there's the surgeon's finger, then there's the
2 glove, then the swab, then there's the kidney. So it's
3 not direct but there will still be some heat
4 transference.

5 So even with that and also with the light, the light
6 produces a huge amount of energy, very powerful lights,
7 they produce heat as well. So we know that after 20
8 minutes or so the kidney will have warmed up to about
9 10 degrees, and thereafter it warms up really quite
10 quickly. And that almost certainly, as it is warming
11 up, the cells begin to turn over more quickly in terms
12 of energy and, therefore, damage begins to occur. So we
13 do everything to try and keep the kidney cold during
14 that period and I agree with Mr Keane that we all do
15 everything to try to keep the kidney cold. However,
16 it is warming up, it is ischaemic, it doesn't have
17 a blood supply, so it is a warm ischaemic time.

18 Q. Can you help with this, is that period of time when the
19 kidney is likely to be warming something that should be
20 noted anywhere?

21 PROFESSOR FORSYTHE: It should be noted and we thought it
22 was noted on the kidney form. The second warm ischaemic
23 time. This was the thing that confused us in our
24 report. We said that the second warm ischaemic time
25 appeared to be kidney out of ice, 8.30. If I remember

1 correctly.

2 Q. Yes.

3 PROFESSOR FORSYTHE: Then re-perfused with blood at 10.30.

4 That would be two hours. Now, clearly, there is major
5 confusion as to definition of times and, therefore, it
6 is most likely that that timing is recorded incorrectly.
7 But if it had been recorded correctly, if it had taken
8 two hours to sew in a kidney, that would cause us major
9 worry. It should not take as long as that. We would
10 normally say that it should take 30 to 40 minutes. If
11 it has taken as long as an hour, then we're getting very
12 worried about it. So as I'm saying to you, the kidney
13 will be damaged by the increased temperature and the
14 fact it hasn't got a blood supply.

15 THE CHAIRMAN: Whatever else happened, there's all sorts of
16 uncertainties about the operation, there doesn't really
17 seem to be any line of evidence to suggest it took two
18 hours to sew in the kidney.

19 PROFESSOR FORSYTHE: That's correct, sir. So I think on
20 that form where it said that it was two hours, there's
21 no other evidence to back up that it took two hours, so
22 I suspect, as you're implying, I think, that that must
23 be inaccurately recorded.

24 THE CHAIRMAN: If knife to skin was at about 8 o'clock, you
25 would never have started at 8.30?

1 PROFESSOR FORSYTHE: Correct.

2 THE CHAIRMAN: Right. So actually the confusion comes from
3 the way in which the form has been completed, it's
4 completed by Mrs Boyce on information which she has
5 gathered, although we're a bit uncertain about how
6 exactly that information has been gathered.

7 PROFESSOR FORSYTHE: And there appears to be quite a lot of
8 confusion about the definition of times.

9 MR RIGG: I think that was one reason why we said the
10 operation note was brief. What would normally be
11 expected is that those times would be included within
12 the operation note and that means it's easier to have
13 a record of what those times were so that can then be
14 transcribed on to the UKTS form, which goes back to
15 UK Transplant to help with their long-term data records.

16 MS ANYADIKE-DANES: That's what I'm going to ask you.
17 I wonder if we could pull that operation note up again.
18 058-035-134. I think there's a -- it goes on to 135.
19 Yes. If we can put up 135 next to it. Thank you.

20 Now that we have this here and we're talking about
21 the note, I think in your report you said that the basic
22 elements of the surgical note were there but I think you
23 also indicated some other matters that might helpfully
24 have been recorded in it to make it an appropriate note.
25 Can you indicate here whether there are any times or

1 anything else of that nature that you think ought

2 properly to have been in a note like this?

3 MR RIGG: I think there's always been a differing view on
4 how the anastomosis time is recorded. Somebody, not
5 Mr Keane, has written vascular anastomosis at around
6 10.30 am. But that doesn't tell you -- I mean, I think
7 we can -- we don't know whether it's the time it started
8 or the time it finished.

9 Q. That's the nephrologist, Dr O'Connor, apparently who's
10 written that in.

11 MR RIGG: Right. Again, I would expect that to be something
12 that the surgeon put in with when the anastomosis
13 started and when the anastomosis finished. But we've
14 heard that Mr Keane perhaps has a different way of
15 defining that, which might be why it's not as we would
16 expect.

17 Q. But what's the information that is important to record?
18 If you accept that you maybe have different definitions
19 of some of these things, what are you actually trying to
20 get at that it's important people know?

21 MR RIGG: I think you want to know how long the anastomosis
22 has taken because that gives an indication as to what
23 might happen afterwards. We've already said that you
24 would expect the anastomosis to take between 30 and 45
25 minutes. If it was going to take longer than that, that

1 would again increase the risk both of delayed graft
2 function, it would also infer that the anastomosis was
3 more difficult and that might infer that the risk of
4 thrombosis of the vessels again was more likely.

5 The other reason for recording the information is
6 because that then goes back to the national transplant
7 register through UK Transplant, and that's where we're
8 able to glean the evidence of what impact all these
9 factors have. And that's why we were able to report
10 that paper later on from 2002, which actually shows what
11 the outcomes of transplantation in children were. It's
12 by having this sort of information in as accurate way as
13 possible that enables us to make those decisions.

14 Q. I presume if it's for that sort of purpose it's
15 important that there is consistency in the terms that
16 are being used or how they are interpreted?

17 MR RIGG: Exactly, although we know that not every unit has
18 100 per cent compliance.

19 THE CHAIRMAN: So I understand this clearly, before
20 Mr Keane's evidence about warm ischaemic time, were you
21 aware of any different interpretations or understandings
22 among people involved in transplant surgery about what
23 warm ischaemic time is?

24 MR RIGG: I think in terms of warm ischaemia, that's
25 standard. The first warm ischaemic time, which is the

1 time in the donor when the heart stops to when the
2 kidney's cooled and that's usually recorded as zero
3 time. The second warm ischaemic time is uniformly
4 recognised as the time in which it takes to do the
5 anastomosis time.

6 THE CHAIRMAN: Uniformly referred to?

7 MR RIGG: Mm.

8 THE CHAIRMAN: Thank you.

9 MS ANYADIKE-DANES: Thank you.

10 THE CHAIRMAN: How close are you to ...

11 MS ANYADIKE-DANES: We're okay. Maybe if we take a break.

12 THE CHAIRMAN: Because we're okay, you mean?

13 MS ANYADIKE-DANES: Well, I'm okay.

14 THE CHAIRMAN: I don't want to rush this evidence, but
15 we are near the end of it. It's not likely to finish in
16 the next five or ten minutes. If we're going to have
17 a break now, it'll have to be a fairly tight one. Our
18 two witnesses, who have been kind enough to come over
19 for the last two days, have commitments back home which
20 they have to get back to. So we will stop until 3.35
21 with the aspiration of being finished by about
22 4 o'clock.

23 (3.24 pm)

24 (A short break)

25 (3.35 pm)

1 MS ANYADIKE-DANES: Just quickly, because I am being asked
2 to put the things in Professor Koffman's report, and
3 he's going to come and give evidence. If we could go to
4 094-007-032. Paragraph 3.4:

5 "In dealing with the two surgeons working as
6 a team."

7 And then if you go to the last sentence on that
8 page.

9 "The assistant may help [which would be Mr Brown]
10 with technical aspects of the operation as well as in
11 decision-making. I could see no report on the record
12 from Dr Brown and such a report would be helpful to
13 confirm Dr Keane's findings."

14 When I had asked earlier about what actually
15 Mr Brown might have done, I rather took the impression
16 from what you said that he wouldn't be involved in
17 decision-making, that he was simply there to hold the
18 retractor and do what he was told, effectively, with no
19 disrespect to him. But Mr Koffman seems to envisage,
20 not necessarily was the case, I'm sure it could change,
21 that an assistant surgeon might be involved in
22 decision-making. Would you disagree with that?

23 PROFESSOR FORSYTHE: It would depend on the procedure and
24 it would depend on the assistant. Without knowing the
25 context precisely of what Geoff Koffman is talking

1 about, it's difficult to be certain. But if you are at
2 a particularly difficult procedure and you had a very
3 experienced assistant, it would be absolutely
4 appropriate, as Keith Rigg mentioned a little while ago,
5 to ask for part of the technical bit of the operation to
6 be done by the assistant. And in addition, if you came
7 to a particularly difficult part of the operation, it
8 may be reasonable to share the decision-making, to talk
9 back and forth and decide what to do.

10 But in the case that we're discussing, Mr Brown did
11 not have experience in paediatric kidney transplantation
12 and, in those circumstances, I would speculate that he
13 probably would not have much to do other than be an
14 assistant in the way that was described.

15 Q. What he did have is knowledge of Adam's anatomy, and so
16 when it came to issues of what level of adhesions there
17 might be or what approach you might take or where you
18 might place, it was he who had performed the surgery
19 that had routed the ureters in the particular way that
20 they were configured, and that's what he knew and may
21 have been one of the very reasons he was part of the
22 transplant team.

23 PROFESSOR FORSYTHE: In fairness, I'd forgotten about that
24 and you're right, that would help in perhaps some of the
25 decision-making process, but other than that, I think he

1 would act mainly as an assistant.

2 THE CHAIRMAN: There's nothing much in Mr Keane's evidence
3 which would lead us to believe that he regarded Mr Brown
4 as being important for decision-making. He very much
5 said, "It was me".

6 PROFESSOR FORSYTHE: And I think given Mr Brown's lack of
7 experience in this particular area, that's an
8 appropriate stance to take.

9 MS ANYADIKE-DANES: Where Professor Koffman goes on to say:
10 "I could see no report on the record from Dr Brown."
11 Obviously we're going to ask him about it, but that
12 rather indicates that he might have expected that there
13 would be one. Are you able to help in the circumstances
14 in which the assistant might have put a note on the
15 record on, a report on the record?

16 MR MILLAR: I suspect that's a reference to he doesn't have
17 a police statement or statement from Mr Brown. That's
18 my reading of that. I don't know whether that's your
19 reading too.

20 THE CHAIRMAN: Yes.

21 MS ANYADIKE-DANES: If we go over the page to 034, paragraph
22 3.7, this is following on from your discussion about the
23 records that were made:

24 "There is no record in the operation note of further
25 exploration of the anastomosis or any analysis on

1 whether this was an arterial or venous problem."

2 Is that something that you'd have expected to have
3 been included in the note?

4 MR RIGG: I think not necessarily. It's part of the
5 operation that you look at things. If you end up having
6 to do something different like redo the anastomosis,
7 then I think you would record that. But if you were
8 simply going to reinspect, then probably not. If you
9 had to go to some lengths to reposition the kidney,
10 I think he may well mention that. It would partly
11 depend on the degree -- I think there is a ... I think
12 it's unclear about the colours of the kidney from the
13 various reports we've read and from the evidence that's
14 been presented.

15 It's clear that when a kidney is re-perfused it does
16 become pink, and in all of our experience it can become
17 less pink as the operation goes on. That doesn't
18 necessarily mean that anything has gone wrong with it,
19 it's just the way things are. If the kidney becomes
20 blueish, then that obviously is of more concern.

21 Q. That actually is recorded, as you know, in the medical
22 notes and records, we'll come to in that a minute,
23 because that's in the next section we are going to deal
24 with, which is the colour of the kidney.

25 If I can take you finally to one paragraph and then

1 we close off with what Professor Koffman has to say
2 about note taking. It's at 035. 3.9:

3 "Conventionally, the surgeon would record the time
4 that the donor kidney was removed from the donor and
5 perfused with cold preservation fluid. He would also
6 record the time that the kidney was removed from the ice
7 and the approximate time to perform the anastomosis."

8 The first was done. We know there's a time of that.

9 In relation to the other two, record the time the
10 kidney was removed from ice, well, there is a time
11 recorded for when it was removed from ice, and the
12 approximate time to perform the anastomosis. That seems
13 to be the bit that's missing.

14 PROFESSOR FORSYTHE: Yes. He would also record the time the
15 kidney was removed from ice, although there is dubiety
16 about exactly what time that was.

17 Q. There is a record of when it was removed from ice. It
18 said it was removed from ice I think at 8.30. But that
19 what that means ...

20 PROFESSOR FORSYTHE: We've established that we don't know
21 what that means, because there is so much confusion in
22 terms of timing. As the chairman commented, if the
23 operation started at 8 o'clock and we were removing the
24 kidney at 8.30, that doesn't quite fit. So I worry
25 about that as the time when the kidney was actually

1 removed from ice.

2 Q. What I'm saying is in terms of good record keeping,
3 would you accept what Professor Koffman is saying that
4 you would want to know that time?

5 PROFESSOR FORSYTHE: Yes.

6 Q. Would you also want to know the approximate time to
7 perform the anastomosis?

8 PROFESSOR FORSYTHE: Which is the second warm ischaemic
9 time.

10 Q. You would want to know that?

11 PROFESSOR FORSYTHE: Yes.

12 Q. Well, not just you --

13 PROFESSOR FORSYTHE: For the reasons you said.

14 Q. If we go directly on to where we were leading to, which
15 is that the colour of the kidney and the infarction of
16 the kidney ... I think in your report of 203-002-039,
17 you posit some reasons for possible discolouration of
18 the transplant kidney. One of them is whether there was
19 a surgical error in the performance of the arterial or
20 venous anastomosis and/or the position of the kidney
21 before closure.

22 You say that it may have been relatively benign as
23 is sometimes seen in a short time after perfusion, on
24 the other hand, it may have been indicated an evolving
25 ischaemia of the kidney either for positional reasons or

1 due to reduced flow in the renal artery, particularly as
2 a smaller external iliac artery was used."

3 In the normal course of surgery, if there is such
4 a thing when you're dealing with transplant surgery, are
5 you able to -- and you see a change in the colour of the
6 kidney, are you able as a surgeon to at that stage
7 identify what might be causing that?

8 MR RIGG: It would prompt you to actually look at the
9 anastomosis and look at the renal artery and the renal
10 vein all the way up to where it goes into the kidney.
11 So it gives us the opportunity to feel the pulse in the
12 renal artery, so that we know if there is blood getting
13 into the kidney. We can also palpate the renal vein to
14 see if it feels soft or hard, and that enables us to
15 know if blood is getting out of the kidney. So those
16 are the things we can control for.

17 What we can't tell is what's going on inside the
18 kidney itself. But in general, if blood is getting in
19 and blood is getting out, that would infer to us that
20 actually blood is also getting through the kidney.

21 Q. Can we go and perhaps you can clarify something in your
22 report, 203-004-077. It's the answer to question 13.
23 Here we are:

24 "If Mr Brown had seen, during the course of wound
25 closure, that the appearance of the kidney had changed

1 and that it was now looking at if its perfusion was
2 inadequate, in those circumstances, what should he have
3 done?"

4 And I wonder if you could clarify that. This is
5 Mr Keane at the time -- well, depending on what the
6 evidence ultimately is and what the chairman rules is
7 the evidence, but if Mr Keane has left and Mr Brown is
8 in that position, so he doesn't have the assistance of
9 Mr Keane as the experienced transplant surgeon, what
10 does he do on his own first, what's his priority?

11 MR RIGG: I think we were describing a hypothetical
12 situation that obviously informing Mr Keane is his first
13 priority. And one would hope that this would be the
14 advice that Mr Keane gave to him in the meantime. These
15 were things that Mr Brown would be able to do, to check
16 the blood pressure and central venous pressure to ensure
17 that there was a good blood pressure because if the
18 blood pressure had gone down or the CVP had gone down,
19 then, you know, more fluids might have needed to have
20 been given.

21 If those were all okay, then Mr Brown would have
22 been able to re-open the layers of the wound that were
23 described as being closed earlier on to at least take
24 any possible pressure off the kidney and he would also
25 be able to deliver the kidney gently out of the wound so

1 that the vessels were no longer potentially kinked.

2 So those things could all have been done by someone
3 who didn't have experience, but being guided to do so.
4 And hopefully in that time, then the operating surgeon
5 would have returned to actually look at things further.
6 So this is perhaps like the first aid measures that can
7 be put in place whilst they're waiting for the expert to
8 arrive.

9 Q. Would he have any discussion with the anaesthetist?

10 MR RIGG: Well, thinking about the blood pressure and the
11 central venous pressure would be things that he would
12 discuss with the anaesthetist.

13 Q. If this happened and it's all hypothetical, and there's
14 an extent to which this is a useful exercise, are you
15 suggesting there would be some discussion between not
16 just Mr Brown and Mr Keane to get his surgical input as
17 to what he should do and what the reasons might be but
18 also the anaesthetist to assist with what was happening
19 with Adam to try and see if that shed any light on the
20 problem?

21 MR RIGG: The anaesthetist would need to be aware for two
22 reasons. Firstly, to check those parameters that
23 we have described, but also that the operation is now
24 going to take a bit longer to do. Often by this stage,
25 towards the time that the wound is being closed, the

1 anaesthetic agents are beginning to be run down so the
2 patient can be woken up in five or ten minutes time. If
3 you're now thinking that the patient's going to need to
4 stay asleep for longer, then the anaesthetist very much
5 needs to be aware of that so they can give extra
6 anaesthetic agents if they are required.

7 Q. Thank you. This is something I have been asked to put
8 to you to get some clarification on it. It's a very
9 simple question, which is: is it possible for an
10 infarcted donor kidney to seem to perfuse after the
11 clamps are taken off, for any reason to seem to be
12 perfused?

13 MR RIGG: I think again if you can feel that blood is going
14 into the kidney and you can often get certainly a feel
15 that blood is getting out of the kidney because you can
16 do various manoeuvres with the vein to show it's coming
17 out, then that will generally tell you that the kidney
18 is not totally infarcted because blood is getting in and
19 out. If the kidney itself is infarcted, then blood
20 might be able to in for a while but it couldn't get out.

21 Q. Is it possible to mistake anything else for what you
22 think is pulsatile flow?

23 MR RIGG: No. If you can feel a pulse in the renal artery,
24 then that means it has to be patent. But obviously the
25 only place you can feel the renal artery is from where

1 you've joined it to the recipient artery to where it
2 goes into the kidney. You obviously can't feel the
3 artery inside the kidney. But, again, if you can feel
4 it throughout that length, that would infer that blood
5 is getting into the kidney.

6 PROFESSOR FORSYTHE: Can I maybe just differ from Keith Rigg
7 for the first time, I think, in our evidence. Just to
8 say that I am concerned sometimes I guess, within my
9 field of doing liver transplantation, I am aware that
10 sometimes when you feel the equivalent artery in a liver
11 transplant, you can be aware of the fact that there is
12 a pulse apparently there, but in fact when you measure
13 flow, what you're getting is a pulse wave transmitted
14 rather than necessarily flow. And on those occasions,
15 then clearly the presence of a pulse does not
16 necessarily equal flow. So I think you have to be
17 careful sometimes that just feeling the pulse alone is
18 not enough.

19 Q. Yes. And I think that has already been commented on.
20 It may have been Dr Coulthard who said is in his report
21 that that's exactly what you could be feeling.

22 PROFESSOR FORSYTHE: I'm impressed that Dr Coulthard,
23 a nephrologist, is telling us what to do in the
24 operating theatre. That's only because I know him well.

25 Q. In terms of producing drops of urine, is it possible to

1 mistake the early production of urine for any urine that
2 could already be in the kidney that could be -- I don't
3 want to use the word "squeezed out", but just by
4 handling the kidney it could be produced, is that
5 possible?

6 MR RIGG: I think there may be small amounts of fluid that
7 come from the ureter after you've done the operation,
8 and purely by looking at it, it's not possible to say
9 whether that is urine or anything else.

10 Q. It's not possible to say that?

11 MR RIGG: Not purely by looking at it. Often fluid that
12 comes out of the kidney can be discoloured.

13 Q. Yes. The reason I've asked you that is because I think
14 if you recall from Mr Keane's evidence, he felt that he
15 would be able to detect the difference between that and
16 I think the clear fluid that he distinguished the urine
17 from. We'll try and find the reference. I presume
18 you have read that?

19 MR RIGG: I have read that. That's why I said -- I think if
20 you are getting large volumes then that is far more
21 likely to be urine.

22 Q. No, that was never his evidence.

23 MR RIGG: Exactly. But if you're getting small drops, it's
24 impossible to say what that fluid is.

25 Q. Thank you.

1 PROFESSOR FORSYTHE: I would agree with that. I think
2 sometimes the small drops of fluid have a little bit of
3 red cells in them, so it really doesn't mean an awful
4 lot.

5 THE CHAIRMAN: He was asked was he certain that it had
6 produced urine and he said:
7 "I may have been wrong but it's highly unlikely it
8 was not urine."

9 PROFESSOR FORSYTHE: I think he may have been wrong.

10 MS ANYADIKE-DANES: Thank you. I wonder if I could also ask
11 you this question. Dr Taylor gave two boluses of fluid
12 at 9.30 and dopamine. Do you have any comment to make
13 about why he would be giving dopamine?

14 MR RIGG: There's a theoretical benefit in giving dopamine
15 to improve the blood flow in the kidney. I'm not aware
16 of actually any evidence to -- published evidence to
17 show that really does work, but it is something that
18 many units do do to try and encourage blood flow in the
19 kidney, particularly in children that is something that
20 people do do.

21 Q. It's not entirely clear why Mr Keane left when he did
22 leave. There are a number of possibilities. At one
23 stage I think --

24 THE CHAIRMAN: I don't think we need to go through them all.
25 There's a degree of inconsistency on it.

1 MS ANYADIKE-DANES: There is. Thank you very much,
2 Mr Chairman.

3 Then the point that I would put to you is: if
4 you are going to leave -- well, how important was it
5 that Mr Keane should have stayed and completed this
6 surgery, and by completed I mean including the wound
7 closure?

8 MR RIGG: In ideal circumstances, I as a transplant surgeon
9 would want to ensure that the wound was closed. I would
10 also want to be sure that he had connected the catheter
11 up, whichever way you put the catheter in, but connected
12 that to a bag. I'd have wanted to see the patient
13 settled in either the recovery ward or intensive care
14 and I'd have gone to speak to the child's family. That
15 would be what I would regard as the end of the
16 operation.

17 I realise that there are sometimes situations where
18 you do have to go off and deal with other more pressing
19 things, and I think in those situations, accepting that
20 I couldn't do what I would like to do, then I would
21 discuss things with the nephrologist so that they in
22 turn could have that conversation with the parents.

23 Q. I think Mr Keane's evidence was that it would -- in
24 fairness to him -- be his practice to go and see the
25 mother. In fact I think he said that after he heard

1 what had happened to Adam, he had attempted to do that
2 but she was dealing with issues to do with donation and
3 he really didn't think that was an appropriate thing to
4 be doing, and in any event maybe he thought or knew that
5 Professor Savage, who knew her better, would be doing
6 that. But before we got to that stage, he said that he
7 assumed that Dr Brown would go and see Adam's mother
8 after the surgery. I think he doesn't say he told
9 Mr Brown to do that, he just assumed he would. Can you
10 comment on that?

11 MR RIGG: I don't think you can assume that your assistant
12 is going to do anything unless you have actually asked
13 them to do that. I think if you're the operating
14 surgeon, then that's your responsibility. But as the
15 assistant, someone who you've just asked to help with
16 this particular operation, I don't think they can be
17 assumed to take on that responsibility.

18 Q. Thank you very much. If I might take you back to one
19 thing that I was asked to pick up. I wonder if we could
20 pull up 011-028-132. At the bottom, you have seen this
21 before, of course, this is the compressed trace to show
22 the values throughout the surgery. So 7 through to 12.
23 And if you see along the bottom, by 8 o'clock, just
24 before 9, what looks like 9.15 and what looks like 10,
25 they are what appear to be -- well, the value goes down

1 to zero. That would seem to be consistent with
2 Dr Taylor's evidence, which is that he did re-zero the
3 machine from time to time just to see what would happen
4 with the recordings that he was getting.

5 The question for you is: is that something that the
6 surgeon would necessarily be aware of?

7 MR RIGG: Not necessarily. I mean -- well, except that if
8 you were asking to know what the CVP reading was on
9 a regular basis then you would get that. So at
10 8 o'clock at the beginning you would be told that it
11 was -- well, we know it was 17 from before. It's
12 difficult to tell from that scale. If we then asked at
13 8.30 to be told that it was 30 --

14 Q. No, no, I'm sorry, that's not the issue. The issue is,
15 would you necessarily expect to know that whatever is
16 happening with that monitor is requiring the
17 anaesthetist to re-zero it in that way, in order to try
18 and achieve accurate levels? Would you necessarily know
19 that?

20 MR RIGG: Not unless he's told you that, no.

21 Q. Would you necessarily be able to see or would you even
22 try and look to see the CVP monitor yourself?

23 MR RIGG: It is sometimes possible to see it, but it isn't
24 always possible to make out what's on it. It depends on
25 how big the display is. Some machines, it's big. You

1 can see it. Other times it's not possible. So it's an
2 inconsistent --

3 Q. If you can see it, then do you try and see it and note
4 for yourself what the figure is?

5 MR RIGG: No, it's easier to ask the anaesthetist what it
6 is. They can see it and they know what's been happening
7 with it.

8 PROFESSOR FORSYTHE: And sometimes on the scene it is
9 something subtly different. It may be that it isn't
10 recording in real time in some way and it's also better
11 in terms of the relationship between surgeon and
12 anaesthetist that there is communication. So I think in
13 general terms, we would speak with the anaesthetist
14 rather than just looking at the screen.

15 Q. And then if you had appreciated that the -- or known
16 that the anaesthetist was re-zeroing the machine like
17 that and you knew that, would it have any significance
18 for you at all or would you just get on with your
19 business?

20 MR RIGG: I think if we were aware that the machine was
21 continually being re-zeroed and the CVP levels remained
22 high, I would want to make sure that the consultant
23 nephrologist was down there in theatre, not just coming
24 in and out but actually being there and helping to
25 manage the problem.

1 PROFESSOR FORSYTHE: I guess if you were specific on exactly
2 what you said, simply re-zeroing, because I think
3 Keith Rigg added in zeroing and an increasing CVP,
4 I think purely on zeroing alone I'm not sure that that
5 alone I would notice or would ring alarm bells in any
6 way. If you put together zeroing and rising CVP, then
7 that's different.

8 Q. And would you have the similar response as Mr Rigg did?

9 PROFESSOR FORSYTHE: Yes.

10 THE CHAIRMAN: But it's more than that, isn't it? Because
11 it's a CVP which is at the start way beyond what you
12 expect.

13 PROFESSOR FORSYTHE: Yes.

14 THE CHAIRMAN: It's rising above a dangerous level and there
15 are at least three occasions of zeroing during the
16 operation in the space of about two hours. If there's
17 good communication between the anaesthetist and the
18 surgeon, the surgeon will be made aware of that in some
19 way, won't he? I can't understand -- and maybe you'll
20 explain to me if I'm wrong -- how if there was good
21 communication, Mr Keane would not have been made aware
22 of that unless Dr Taylor withheld the information.

23 PROFESSOR FORSYTHE: I agree. I think we both work in
24 a situation where we're very lucky, we have anaesthetic
25 colleagues that we work with very frequently, and

1 I think there is a very good relationship there, and so
2 there is easy flow of communication back and forward.
3 I think if you were having something like this happening
4 and a surgeon didn't know about that, then that suggests
5 a breakdown in communication.

6 MS ANYADIKE-DANES: Can you ask possibly one last question,
7 and that is when the anaesthetist who had replaced
8 Dr Savage came in, who is Dr O'Connor, she on her
9 evidence had a --

10 MR UBEROI: The nephrologist.

11 MS ANYADIKE-DANES: I'm so sorry, the nephrologist. She had
12 a conversation with Dr Taylor because she had noted the
13 level of the CVP. He explained to her what had
14 happened, that it had started at 17, he felt it was
15 in the wrong place because he'd felt it go up the neck
16 as opposed to down where it should go, as a result of
17 which he was actually using it for relative change and
18 he wasn't taking any notice of what the absolute figure
19 was. If you'd appreciated that, in other words the
20 reality of the situation was that you didn't actually
21 know what the absolute CVP figure was, what would have
22 been your reaction to that?

23 MR RIGG: I suppose what perhaps I didn't emphasise earlier
24 on was that it is not just the CVP reading, it's also
25 the clinical situation of the patient.

1 Q. Yes.

2 MR RIGG: And normally, with the very high CVP, that infers
3 that the patient has too much fluid on board and that
4 often is reflected in the way in which the lungs are
5 working. Therefore, one would have expected the
6 anaesthetist to have noticed problems with how easy it
7 was to ventilate the patient and often you may get pink,
8 frothy sputum appearing as well. So I think those two
9 things need to be taken together.

10 Q. Yes, but if there is a simple exchange, in other words
11 he has the exchange with you, the surgeon, that he had
12 with Dr O'Connor, the nephrologist, and the end position
13 is that you appreciate that from the outset there's been
14 no measurement -- nobody knows what Adam's CVP is and
15 nobody's going to know what Adam's CVP is, it would
16 seem, for the duration of the surgery, what would have
17 been your response to that?

18 PROFESSOR FORSYTHE: I think I would have to ask when during
19 the procedure that that is found out. I think if it
20 were early on in the procedure I would probably want
21 a meeting in theatre of the anaesthetist, nephrologist
22 and surgeon and a plan as what we should do, and I guess
23 the advice taken from the anaesthetist and the
24 nephrologist as to whether or not there should be other
25 attempts at placing a line or what other methods we can

1 do to try and overcome that problem.

2 Q. But would you have regarded it as significant?

3 PROFESSOR FORSYTHE: Yes.

4 Q. The medical note at 058-035-136. I wonder if you just
5 increase the first five lines down to "kidney". This is
6 a note that the nephrologist, Dr O'Connor, puts on
7 Adam's record. And there she's totting up the fluids
8 that happened in theatre, and then she makes this note:

9 "Kidney looked blueish at the end of theatre."

10 She doesn't actually know whether she saw the kidney
11 and that's her note of what she saw or whether she was
12 told that and she has recorded that in his notes as
13 something is a significant thing to record.

14 So on the one hand you have Mr Keane's note of the
15 surgery and at the end he says:

16 "Perfused reasonably well."

17 Then on the other hand you have this note saying:

18 "Looked blueish."

19 If the wound is being closed and the kidney is
20 looking blueish, how significant is that?

21 PROFESSOR FORSYTHE: It would be significant as we've
22 already said. I think the difficulty that we have is
23 we have conflicting evidence and it's very difficult to
24 know what the state of the kidney was at the time of the
25 closure of the wound. I think there has been evidence,

1 I think from Mr Keane, saying that the kidney was
2 perfused well. Dr O'Connor, as you said, with relative
3 to Mr Keane less experience of what a kidney will look
4 like towards the end of a transplant, has obviously made
5 that comment. Whether that is her own finding or
6 whether that is other people saying that to her is also
7 unclear.

8 THE CHAIRMAN: But it doesn't matter very much where it
9 comes from. If somebody has reported that it looks
10 blueish that's a warning flag, isn't it?

11 PROFESSOR FORSYTHE: It is, but we have said that if it were
12 towards the end of the procedure and if a surgeon has
13 gone back -- as we've said, it can be well perfused to
14 begin with and then it can look a little blueish and you
15 can go back and check that everything's okay, if
16 everything's okay and you've done everything and
17 you have satisfied yourself it's fine, then it may just
18 be a relatively benign finding. If, on the other hand,
19 you haven't done any of those things, then it's a very
20 worrisome comment.

21 MS ANYADIKE-DANES: On Mr Keane's evidence, it started off
22 perfusing quite well and then his evidence is it
23 perfused rather less well at the end. So even as he
24 leaves it, either physically leaves it or is the end of
25 the procedure so far as he's aware, it is perfusing less

1 well than it did previously, and I think the issue is to
2 what extent should he have attempted to find out why it
3 was perfusing less well before the wound was closed
4 and/or before he left.

5 PROFESSOR FORSYTHE: As we've said in our report, if it does
6 change in colour, that should prompt you to look at the
7 kidney in detail to look at the anastomoses in detail,
8 to check with the caveats that we've said about the flow
9 in the artery and the vein, and there are a number of
10 different reasons why, in Adam's case, there could have
11 been problems with the kidney having changed colour.

12 MS ANYADIKE-DANES: Thank you. Mr Chairman, I don't have
13 any further questions.

14 THE CHAIRMAN: Thank you.

15 Questions from MR HUNTER

16 MR HUNTER: Just one point of clarification arising out of
17 an answer that Mr Rigg gave to a question put by senior
18 counsel.

19 Senior counsel put the question to the gentlemen
20 that -- she put the proposition that Dr Taylor had given
21 two boluses of fluid at 9.30 and dopamine and
22 asked: do you have any comment about why he would be
23 giving dopamine? And Mr Rigg supplied: there's
24 a theoretical benefit in giving dopamine to improve the
25 blood flow in the kidney.

1 Does that mean then that it's possible that the
2 kidney was plumbed in at 9.30 if dopamine was being
3 given at that time?

4 MR RIGG: Um ... I think I am not sure I could answer that.

5 MR UBEROI: Can I move in at that point then rather than
6 inviting speculation? I am not sure it's not more
7 properly a question for a consultant anaesthetist and
8 I was keen to leave the answer if it he could come, but
9 with that indication having been given, rather than
10 speculate, it may be best for it not to be taken.

11 THE CHAIRMAN: If it is knife to skin at 8 o'clock, with
12 what is a somewhat complex operation, what is the
13 prospect, to use Mr Hunter's term, of the kidney being
14 plumbed in at 9.30?

15 MR RIGG: I think very unlikely, particularly with the 10.30
16 time around which we assume is the end of the
17 anastomosis time.

18 THE CHAIRMAN: Okay.

19 MR RIGG: Even if it was at the beginning of the anastomosis
20 time, it's still sufficiently accident from 9.30.

21 THE CHAIRMAN: Okay. Thank you. Are there any more
22 questions?

23 Questions from MR MILLAR

24 MR MILLAR: Only a very, very brief matter, on this question
25 of the appearance of the kidney. If we could have

1 094-007-036, a little bit from Professor Koffman's
2 report, because he comments on this issue of blueness.
3 Paragraph 3.12.

4 Could you have a look at that paragraph, gentlemen?
5 He makes a remark along the lines of it being quite
6 common for the kidney to behave like this and initially
7 to perfuse well and then become rather blue and floppy.
8 He seems to be saying it's not an unusual thing, and
9 I just have the impression that you chaps were saying
10 something rather different. So I thought I'd given you
11 the opportunity to comment on what he says.

12 MR RIGG: I think the problem is the colour is actually very
13 subjective at this point in time and I suppose it's --
14 if we talk about blue, we will all have a different view
15 of what we mean by blue. I think it often is relative.
16 I think if the kidney, from a surgeon's perspective,
17 looks bluer than you might expect, then that would
18 prompt us to do what we've suggested of actually looking
19 at the blood vessels and looking at all the other
20 things. It's not uncommon for the kidney to be
21 a different colour at the end of the procedure than what
22 it was beforehand. But I think sometimes if it's more
23 blue than you would want, then that would prompt an
24 extra examination of it.

25 Q. If it became royal blue or bright blue?

1 MR RIGG: I think that's exactly right. Some blues are more
2 indicative of thrombosis, another blue just means that
3 the perfusion is not quite as good as it was earlier on.

4 MR MILLAR: Thank you.

5 PROFESSOR FORSYTHE: If I may just come back to you as well,
6 I think if we have given the impression that it doesn't
7 happen quite frequently then I apologise for that,
8 because it does happen quite frequently that the kidney
9 changes colour. But the key I felt, and I need to
10 underline it, is that it should prompt certain action to
11 make sure that it is the benign thing that we have
12 described and Geoff Koffman described, rather than
13 something that is much more worrisome.

14 Q. What Mr Keane described was getting to the end of his
15 part of the procedure, he made his initial note and you
16 may have observed he signs the note twice, actually, and
17 there's a second entry which he signs where he does
18 comment specifically on the perfusion of the kidney, and
19 I think his evidence was that having made the initial
20 note, he remembered or recalled that he hadn't commented
21 on the colour of the kidney?

22 THE CHAIRMAN: Which he should have done, which is why he
23 added that note.

24 MR MILLAR: And went back and had a second look to check
25 that all was well and made his note.

1 Questions from THE CHAIRMAN

2 THE CHAIRMAN: Okay, thank you. I want to ask you
3 a slightly different point. After this was all over and
4 Adam had died, and we know that Mr Keane has indicated
5 he came back the next morning to speak to Adam's mother
6 but because she was in the middle of discussions about
7 donation of organs, he thought it better not to
8 interrupt, which I assume was entirely appropriate. His
9 evidence then broadly was at that point he went over to
10 the City Hospital, which is about a mile away, as you
11 might have picked up. It was then a separate trust,
12 though, since amalgamated into a single Belfast Trust.
13 He effectively waited there to be contacted, expecting
14 there to be some investigation or audit or analysis of
15 what had gone wrong.

16 First of all, was he right to expect that there
17 should have been some investigation in which he would
18 have had some input into what went wrong?

19 PROFESSOR FORSYTHE: Yes, I think we touched on this before.
20 We felt that in the situation of the tragedy that
21 occurred, then we would have expected there to be some
22 formal review of that by the clinicians who were
23 involved. So we would have expected, in 1995, for some
24 sort of review to see why it happened, if we can work
25 out why it happened, and is there anything that we could

1 do differently in the future that might stop it

2 happening to others.

3 THE CHAIRMAN: And I think your evidence yesterday was that

4 you would have expected this to have started within

5 a couple of days?

6 PROFESSOR FORSYTHE: Yes. Either to have started in

7 a couple of days or a plan made within a couple of days

8 for it to be happening in the foreseeable future so that

9 people's minds were fresh.

10 THE CHAIRMAN: If he hadn't heard anything within a few

11 days, would you expect him to lift the phone?

12 PROFESSOR FORSYTHE: I would. I would have felt that if

13 you have been part of a team where something like that

14 has happened, I would want to -- if others aren't going

15 to initiate that, I would want to initiate that. I'd be

16 interested to see what Keith Rigg would say.

17 MR RIGG: I think things are certainly far more formal now

18 than they were then, but even at that stage I would have

19 expected certainly the consultant surgeon and consultant

20 nephrologist to at least have had an initial

21 conversation about what should be the next stage to

22 discuss this. It's difficult to say who should initiate

23 that but I think either party could have initiated it or

24 should have initiated it.

25 THE CHAIRMAN: It's not an occasion to stand on ceremony

1 about who issues the invitation?

2 MR RIGG: No.

3 THE CHAIRMAN: Thank you very much. Thank you for your time
4 and I hope you get your planes on time. Unless there
5 are any other issues we will break and start at
6 10 o'clock on Tuesday morning with Dr Coulthard.

7 (4.17 pm)

8 (The hearing adjourned until 10.00 am on Tuesday 8 May)

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I N D E X

PROFESSOR JOHN FORSYTHE and MR KEITH1
RIGG (continued)

Questions from MS ANYADIKE-DANES1
(continued)

Questions from MR HUNTER204

Questions from MR MILLAR205

Questions from THE CHAIRMAN208

