

20 October 2022
Babies A & B

CONTENTS

MISS MELANIE TAYLOR (continued)
Cross-examination by MR MYERS (continued)
Re-examination by MR DRIVER

DR DAVID HARKNESS (affirmed)
Examination-in-chief by MR DRIVER
Cross-examination by MR MYERS
Re-examination by MR DRIVER

Witness statement of DR CHRISTOPHER MARK WOOD (read)

Witness statement of LISA WALKER (read)

Witness statement of LAURA EAGLES (read)

Witness statement of ELIZABETH MARSHALL (read)

Witness statement of MINNA LAPPALAINEN (read)

Witness statement of JOANNE WILLIAMS (read)

Witness statement of [Mother of non-indictment baby] (read)

Witness statement of KATHRYN PERCIVAL-WARD (read)

Witness statement of AILSA SIMPSON (read)

Housekeeping

Thursday, 20 October 2022
(10.30 am)

(In the presence of the jury)

MISS MELANIE TAYLOR (continued)

Cross-examination by MR MYERS (continued)

MR JUSTICE GOSS: Yes, Mr Myers.

MR MYERS: Thank you very much.

Miss Taylor, I'm going to carry on with the questions from yesterday. Just so we can keep track of one item that we saw, you'll recall I showed you some photographs and asked you to have a look at them and relate them to the map. Do you remember

that? Just so we can all keep this in mind, the photos that I showed you, I don't expect you to know this, this is just so we can keep track of it, were taken on 6 October 2017 at 6.30 in the morning.

My Lord, that's in the statements at page 304. It's a police officer, Andrew Whittingham, who took those photographs.

MR JUSTICE GOSS: That can become an agreed fact. Don't worry about it, you'll get it in writing. It was important. I raised the issue of when these various photographs were taken, when the recordings were made. We needed to know when in relation to the events with which we are concerned, 2015 and 2016.

MR MYERS: In fact, they're not all taken on the same occasion, so we shall establish the dates. But that's when those ones were taken.

In fact, just dealing with that, the incubators or cots that we saw in nursery 1, they're not fixed in the positions that they're drawn on the plan, are they?

TAYLOR: The incubators are movable, yes, on wheels.

MYERS: So they can be moved around sometimes, from time to time, for whatever reason?

TAYLOR: Yes, they tend to be -- there are designated spaces but they can move, yes.

MYERS: When you began your shift on 8 June at 7.30 in the morning, at that time of the two twins, the concerns were that [Baby B] was the weaker of the two; isn't that correct?

TAYLOR: To be honest, I can't remember the details.

MYERS: You have given us a description of how [Baby A] was when you began your shift. Your view is he was in a stable condition?

TAYLOR: Yes.

MYERS: That's right, isn't it?

TAYLOR: Yes.

MYERS: When you began your shift, he was receiving respiratory support by way of CPAP; is that correct?

TAYLOR: Yes.

MYERS: Right. He had a cannula in position to assist with fluids?

TAYLOR: Yes.

MYERS: And the cannula, where would that have been fitted?

TAYLOR: I don't know in this case. It can be fitted in a variety of places, so it could be in the back of the hand, in the arm, in the feet. But I don't know specifically where his cannula was.

MYERS: We may see a reference to that later.

And of course, there were standard issues like he was receiving fluids and antibiotics?

TAYLOR: Yes.

MYERS: Just to assist the jury with a little more detail on this, however stable a baby like [Baby A] is, there has to be fairly constant observation and monitoring of them, doesn't there?

TAYLOR: Yes.

MYERS: We know [Baby A] was born at 31 weeks' gestation, approximately. So that would put him in the category of what would be called very preterm, wouldn't it?

TAYLOR: Yes.

MYERS: And with preterm babies, however stable they are, there are a number of conditions you have to keep a close eye open for, aren't there?

TAYLOR: Yes.

MYERS: I'm not going to go through all of them, but they include things like potential problems with breathing?

TAYLOR: Yes.

MYERS: And as we've heard, and as I'm sure we'll hear in more detail, that's because in a premature baby, or very premature baby, the development of the lungs hasn't yet got to the stage that it would have done in a full term baby?

TAYLOR: Yes.

MYERS: So they may struggle to breathe. There are problems with feeding preterm babies compared to a term baby, aren't there?

TAYLOR: Yes.

MYERS: Because their guts haven't developed yet to the point where they can handle feeds in the way that a term baby could; is that correct?

TAYLOR: Yes.

MYERS: They are susceptible to infection, would you agree with that?

TAYLOR: Yes.

MYERS: Then there are some issues such as their veins, for example, are not as robust as the veins may be in a term baby or indeed an older baby?

TAYLOR: I don't think I could comment whether their veins are more or less robust.

MYERS: All right. In your experience the preterm babies can be very tiny?

TAYLOR: Yes.

MYERS: And they can be prone to collapses, can't they?

TAYLOR: Again, I don't know if I could generalise and agree with that necessarily.

MYERS: I just wonder whether you could be shown a document. It's from your interview with the police. We will see how this works: I'm going to ask you to have a look at page, if Mr Murphy can help with this, K8457.

I can hand a copy of this to the witness, my Lord.

(Handed)

MR JUSTICE GOSS: Thank you. This is the pre-statement interview, is it?

MR MYERS: Yes, it is, my Lord.

MR JUSTICE GOSS: All right. It's a statement being compiled from what was said in the interview.

MR MYERS: Yes, it was, my Lord, thank you. I'm just going to assist my learned friend with the reference if the court would bear with me.

MR JUSTICE GOSS: Yes, certainly.

(Pause)

MR MYERS: We'll find another way of dealing with this in due course, my Lord.

We'll come back to that a different way, Miss Taylor.

In the day shift, we've heard you were allocated [Baby A] and [Baby B]; is that correct?

TAYLOR: Yes.

MYERS: I just want to confirm one matter. I asked you yesterday about intensive care and I'm not going to go through every aspect of how it's categorised, but in fact whether or not a baby is in intensive care is also something that's defined by the BAPM guidelines, isn't it?

TAYLOR: Yes.

MYERS: And can you help us with this? At the time we are talking about, in 2015, and if you can't we can deal with this another way, a baby fitted with a UVC would be considered an intensive care baby?

TAYLOR: Yes.

MYERS: That's right, isn't it?

TAYLOR: Yes.

MYERS: So certainly, by about 1 o'clock of the afternoon that you were there, [Baby A] had become an intensive care baby, hadn't he?

TAYLOR: Yes.

MYERS: Because, as I'll remind everyone, he'd been fitted with a UVC.

And also, is it right that a baby who was on CPAP and receiving parenteral nutrition was also considered intensive care?

TAYLOR: That I'm not so sure. I would have to refer to the guidelines for that possibly.

MYERS: But in any event, during the course of that day, you certainly were in a position where you had at least one intensive care baby and one other baby that required a lot of care?

TAYLOR: Yes.

MYERS: That's correct, isn't it? And it was just you dealing with both of them at that point, in terms of nursing, wasn't there?

TAYLOR: Yes.

MYERS: Which is actually at a point below what the guidelines would say, isn't it?

TAYLOR: Sorry, repeat that again?

MYERS: It's actually below what the guideline quota is, isn't it?

TAYLOR: Yes. And in terms of ITU, you know, some of the BAPM guidelines, technically they are intensive care but they are not always as intensive care -- if it was a baby who was on a ventilator and needing lots and lots of support, they are very -- they need a lot, a lot of care, they are very hands-on and one-to-one is definitely needed. Whereas a baby on CPAP who is stable -- some of the things they do technically become ITU but in terms of care they may be fairly similar to an HDU patient.

MYERS: So it may be, in real terms, possible to manage them, although it may fall outside the guidelines?

TAYLOR: Yes.

MYERS: But do you accept -- I won't ask you to comment on the guidelines, but we have them.

During that day that shift had been very busy, hadn't it?

TAYLOR: Yes.

MYERS: And indeed, do you agree the unit was extremely busy round about this time or so it felt?

TAYLOR: Yes.

MYERS: Just so we can have an understanding, during the course of a day there, are there people moving about constantly across the nurseries and through the unit?

TAYLOR: Yes.

MYERS: And a lot of tasks to be done?

TAYLOR: Yes.

MYERS: And actually, is there quite a lot of background noise with alarms and monitors sounding around the place?

TAYLOR: There can be.

MYERS: Was your impression that over this particular period, so let's say getting into early summer 2015, there did seem to be a lot of poorly babies and the unit was getting very busy indeed?

TAYLOR: I mean, to be honest, I remember that shift was a busy shift and I remember having a lot of busy shifts around that time. I can't comment sort of directly before, exactly around that time. But there were definitely busy shifts and that was a busy shift.

MYERS: Yes. Did you get the impression that that coincided with an increase in the number of poorly babies or babies with higher acuity, to use a technical expression?

TAYLOR: I think inevitably if you've got a higher number of babies there will be a higher number of babies needing HDU/ITU care.

MYERS: That then puts an increasing demand, for example, on the nursing staff who are available to deal with them, doesn't it?

TAYLOR: Yes.

MYERS: Amongst the duties you deal with, we have heard, are the observations that are taken regularly on the babies. I'm going to put up, please, if we could, J1123, which, ladies and gentlemen, if you're using the timeline, is at slide 7. There are two ways of referring to them. The exhibit number is J1123.

We'll try and match it to the screen. Perhaps just broaden it a little bit, if you could, please, Mr Murphy. Thank you.

We're getting familiar with these, Miss Taylor. Can we scroll down, please, just to look at the temperature section? Just enlarge that.

When we look at the chart we'll see when we look at heart rate and respiration that on the hourly checks, invariably there is a mark put in for heart rate and respiration and we can see, looking at temperature, that every now and again it looks like there hasn't been a mark put in for temperature.

TAYLOR: Yes.

MYERS: Can you see that? I'll just ask you why that is. Can you help us why -- is there a reason why, for instance, you won't do temperature every hour in the way that you might do heart rate and respiration every hour?

TAYLOR: Yes. It is standard that we would not necessarily do temperature every hour. To do a temperature we have to put a probe underneath the baby's arms, they often don't like it, whereas respiratory rate and heart rate we don't need to do that. And you can see within the ones where I have not done them hourly, they've been within normal range, so if I'm happy with the temperature I won't check it hourly, whereas the ones that have gone into the yellow, I've checked it the next hour and it has been in a normal range, so I have again not done it for another hour.

MYERS: I am just going to go into that in a little more detail, but I'm grateful for that.

You can tell what the heart rate or what the respiration are from the monitors that are fixed around the cot, can't you?

TAYLOR: Yes.

MYERS: To enter those you simply look at that and then mark it down on the chart. Taking the baby's temperature --

TAYLOR: Sorry, I was just going to say: for respiratory rate we wouldn't read that off the monitor, we would count that ourselves.

MYERS: You'd count it?

TAYLOR: Yes.

MYERS: It doesn't involve touching the baby though, does it?

TAYLOR: No.

MYERS: And that's the point, isn't it, because to take the baby's temperature you have to handle the baby, don't you?

TAYLOR: Yes.

MYERS: And as a general rule, is handling kept to a minimum with neonates like this, so far as you can?

TAYLOR: Yes.

MYERS: It's something that people in neonatal nursing are familiar with, I'm going to suggest, that handling can become a direct source of stress for the little babies that you look after; do you agree?

TAYLOR: Yes.

MYERS: Is it the case some handling is regarded as what you might call positive handling?

TAYLOR: Yes.

MYERS: Could you give an example of positive handling?

TAYLOR: There's positive touch, which is placing a hand or two hands on a baby, such as the stomach and the head, just for containment and making the baby feel secure. We call that positive touch. That can actually reduce heart rate and be positive, as well as skin-to-skin touch is also with the parents. So yes, that's positive touch.

MYERS: But even that in fact has to be controlled to some extent with a vulnerable neonate, doesn't it, the skin-to-skin contact with parents?

TAYLOR: It depends on the baby and it depends on the situation. I think you would judge it on what condition the baby was in to decide that.

MYERS: Is it possible that handling that causes -- handling of a baby may cause an increase in stress which can actually lead to a deterioration in the baby's condition?

TAYLOR: Um... To a certain degree, yes. Yes.

MYERS: So all of that lies behind why it is that, when temperature is already stable, you don't necessarily take another temperature reading?

TAYLOR: Yes.

MYERS: And that's why when we look at this chart, we get the gaps in the temperature that we see?

TAYLOR: Yes.

MYERS: So if we just go down, can we enlarge it to see who's taken the temperatures at this time, Mr Murphy? Thank you.

We can see where you first take observations and I'm going to move the cursor along to the right of the AHs when we come to a little loop and a big loop. Is that your signature?

TAYLOR: Yes.

MYERS: And the cursor is there, thank you.

If we look up, we can see you've taken the temperature at that point, haven't you?

TAYLOR: Yes.

MYERS: But it's within the range, isn't it?

TAYLOR: Yes.

MYERS: So that means you took the decision, not criticising it, not to take the temperature on the next hourly observation?

TAYLOR: Mm-hm.

MYERS: If we go across to the penultimate one, just above the number 74, the page number 74 -- sorry, a little bit further right -- and look at the signatures down there. Thank you.

Is that your -- whose signature is that above the cursor?

TAYLOR: Um... It could be mine.

MYERS: All right.

TAYLOR: Um...

MYERS: If it is you, whoever it is, the temperature has been taken, hasn't it?

TAYLOR: Yes.

MYERS: And it's bang within the acceptable range of temperature, isn't it?

TAYLOR: Yes.

MYERS: And then we can see Ms Letby is doing the observations next?

TAYLOR: Yes.

MYERS: And we'll see there isn't an observation recorded for temperature --

TAYLOR: Yes.

MYERS: -- for the reason we've been discussing?

TAYLOR: Yes.

MYERS: If we look back up, please, and see if the other observations are there, Miss Taylor, for that final column. We can see the observations for heart rate and respiration are there, aren't they?

TAYLOR: Mm-hm.

MYERS: And that's what you'd expect?

TAYLOR: Yes.

MYERS: Thank you.

I'm going to move next just to see if you can help us or how far you can help us with the events during the afternoon. I appreciate you're thinking back over some time. We have various documents that can help but some of the documents we have you didn't create and you weren't involved with, so I'll limit how much I go to anything like that.

Could we start, please -- I'm going to ask to be put up on the screen J1101, which is the nutrition prescription, and it's at slide 11 on the timeline.

We just need to look at the top half of the document if we could, please.

Just looking for day 1 there, Miss Taylor, the prescription for Babiven and lipid was for 60 millilitres per kilogram per day.

TAYLOR: Yes.

MYERS: And then -- I'm sure we're getting familiar with this now -- looking to the right of where it says "total" in the top box there's a figure, 4.15.

TAYLOR: Yes.

MYERS: So that's the hourly rate at which that fluid should be going into [Baby A], 4.1 millilitres?

TAYLOR: Yes.

MYERS: It works out at something like about 100 millilitres a day, isn't it, because of his weight, 1.6 kilos?

TAYLOR: Yes.

MYERS: If we look at, please, T25, which is the nursing notes. That's at exhibit 1078, slide 25.

We're going to enlarge the bottom right, please. This is the same day -- sorry, this is the next day, 8 June, now. We're looking at the entry for 13.08.

If we go up to the 13.08 entry and I'm going to read about six lines down where it says:

"Fluid: 60 millilitres per kg per day."

TAYLOR: Mm-hmm.

MYERS: This repeats now what that fluid prescription was via the cannula and it says:

"Slight oedema in arm around cannula."

So this is a cannula fitted to the arm, one arm or the other; is that correct?

TAYLOR: Yes. It would appear so.

MYERS: At this point, there's some fluid swelling there but the doctor was happy to continue with that line?

TAYLOR: Yes.

MYERS: We know that soon after this begins a process of attempting to fit a UVC to [Baby A], don't we?

TAYLOR: Yes.

MYERS: And the UVC is a line, a catheter, a line that goes into the umbilical area, the belly button?

TAYLOR: Yes.

MYERS: Into a vein there?

TAYLOR: Yes.

MYERS: And that's a way of getting substances into the baby?

TAYLOR: Yes.

MYERS: And I'm not going to go through every aspect of it, but it involves inserting a line that is meant to go up to somewhere close to but not too close to the heart; is that correct?

TAYLOR: I'm not trained to be able to know where they are. That would be a doctor that would confirm that.

MYERS: That's right. Although you deal with many things throughout the course of a day, there are some tasks that are firmly within the province of the doctors to deal with?

TAYLOR: Yes.

MYERS: And they have to deal with things like fitting UVCs and fitting long lines, don't they?

TAYLOR: Yes.

MYERS: In any event, over the course of the next hour or so, do you recall there were two attempts to fit a UVC to [Baby A], weren't there?

TAYLOR: I don't remember it, but reading back from what I've written in my notes, I see that there was.

MYERS: We can see, if we just look down there on what's on the screen at the moment, J1078, if we look at the entry for 19.05 that you put in, Miss Taylor, we can see that by that time it's recorded as:

"UVC in wrong position, reinserted by SHO MacCarrick. Again in the wrong position. Cannula tissue. Doctors busy on ward 30. Aware no fluids running for a couple of hours."

TAYLOR: Yes.

MYERS: "Long line inserted by Registrar Harkness, awaiting X-ray."

TAYLOR: Yes.

MYERS: "Remains settled on N CPAP."

TAYLOR: Yes.

MYERS: "Enteral feeds started at 1ml two-hourly."

I'm going to go through what we have there, please. The note is made at 7.05, but as you've explained, sometimes because events are busy you have to wait until there's a break in events to note up the nursing notes, don't you?

TAYLOR: Yes.

MYERS: So you are dealing with things sometimes retrospectively, you're thinking back?

TAYLOR: Yes.

MYERS: By the time we get to 7.05, you're recording the fact there's been two efforts to insert a UVC, aren't you?

TAYLOR: Mm-hm.

MYERS: And they've both been unsuccessful?

TAYLOR: Yes.

MYERS: We'll see elsewhere, I'm not going to take you through all the documents that are generated by doctors and that you didn't generate, the second of those insertions is round about 8 minutes past 4 o'clock in the afternoon.

TAYLOR: Okay.

MYERS: I'm going to put up the chart, the intensive care chart, 1121 at 2138, just to see what else is happening round about 4 o'clock on the afternoon. If we enlarge it down to where it's 16.00.

We know, by or around about this time, there have been two unsuccessful attempts to put in the UVC and also, by 16.00, the cannula that had been taking fluids to [Baby A] had tissued, which means in effect it's not working and it's just going into the tissue but not into the place it should be going, not into the vessel it should be going; is that correct?

TAYLOR: Yes.

MYERS: And because this is an entry for 16.00, although there isn't a precise timing there, we know that means that by 16.00 this is where we've got to; do you agree?

TAYLOR: Yes.

MYERS: So by this point, [Baby A] is not receiving the fluids that he requires, is he?

TAYLOR: So I would say somewhere -- it's unclear on here, but somewhere between 4 and 5, that cannula's tissued and he's not receiving IV fluids.

MYERS: Just so we can be clear, when you make the entry for 16.00, do you know what time you made that entry?

TAYLOR: It will have been around 16.00.

MYERS: Right. So if the cannula's tissued it must have tissued before then if you're making the entry around 16.00. You can't have said it if it hasn't happened yet.

TAYLOR: Potentially it could have, you're right, I think. But, however, also I may have written that retrospectively, if I have noted it after 4, because I have already written the fluid amount, so there is a potential that it could have happened after and I've written because that was my last fluid entry at that hour that I could have written that retrospectively in that box. So it could be slightly before or slightly after, yes.

MYERS: So we go for around 4 o'clock?

TAYLOR: Yes.

MYERS: Right. So at that point [Baby A] isn't receiving the fluids that he required?

TAYLOR: Yes.

MYERS: We can see on the same chart, we're probably familiar with it now, two entries where it says:

"1 (1) NGT for 16.00 and 1 (2) NGT for 18.00."

TAYLOR: Yes.

MYERS: That reflects the fact that on each of those occasions [Baby A] has been provided with 1ml of expressed breast milk --

TAYLOR: Yes.

MYERS: -- via the NGT. And the reason it says 2, when we look at 18 next to the 1, is that an adding-up total as we go along?

TAYLOR: Yes.

MYERS: So he received 1 then but we're up to 2 and you'd agree that doesn't get anywhere close in fact to what his fluid requirements really are for this period, does it?

TAYLOR: No, they're what we would call trophic feeds.

MYERS: So nobody misunderstands this, this is absolutely no substitute for the fluids he was meant to be receiving, is it?

TAYLOR: No.

MYERS: Now, the reason you're waiting -- or what you're waiting for up to 17.00 is for a long line to be inserted for feeding, isn't it?

TAYLOR: Yes.

MYERS: So nothing at 4 o'clock. Waiting for a doctor to come and insert a long line. And you have to wait because that's one of the tasks that a doctor has to undertake, isn't it?

TAYLOR: Yes.

MYERS: Would the doctor have known he or she was required to come and put a long line in before 7 pm?

TAYLOR: Yes.

MYERS: But you have said it was very busy and that caused a delay, didn't it?

TAYLOR: Yes.

MYERS: We know that the long line is inserted some time -- or it appears to be some time around 7 o'clock, or just after 7 o'clock. We may hear more about that later. I'd like to go back to your notes, please, Miss Taylor, which are at J1078. Again, it's tile T25.

If we could enlarge the entry for 17.08, please, Mr Murphy.

I'm trying to keep things up to speed as we go along. We can look again now at the 19.05 entry knowing what lies behind it. We've looked at the fact the UVC was in the wrong position after two efforts:

"Doctors busy on ward 30."

And we can see by 19.05 the long line has been inserted by Dr Harkness, is that correct, just looking at the third line down?

TAYLOR: Yes.

MYERS: It says "Awaiting X-ray".

TAYLOR: Yes.

MYERS: Can you explain to the jury why it's necessary to wait for an X-ray after the long line has been inserted or why it was necessary on this occasion to wait for an X-ray? Would you explain that, please?

TAYLOR: It's again just to check the position of the line in the same way we would check for UVC but it's obviously looking at a different entry point and exit point but, yes, it's just to check the position of the line before we use it.

MYERS: We'll come in a little bit to how that's put in, but let's just carry on through this sequence first.

It's important, isn't it, to make sure the tip of the long line, the bit through which the fluids, or even medication, will go into the baby's body is in the right place, isn't it?

TAYLOR: Yes.

MYERS: Because if it's in the wrong place that can create problems of their own, can't it?

TAYLOR: Yes.

MYERS: Before I move on from there, I'm going to ask you about how a long line is fitted actually, so far as you can assist us, so we can keep track of where we're up to. The doctor will normally be assisted by at least one nurse; is that correct?

TAYLOR: Yes.

MYERS: It's a sterilised procedure, isn't it?

TAYLOR: Yes.

MYERS: Everyone has to be clean, everything has to be sterilised. The long line, it's very thin?

TAYLOR: Yes.

MYERS: And does the doctor use actually a kind of metal wire? I say a wire, it's not what we might think of as a wire from DIY, but it's a very narrow wire called a trochar, isn't it?

TAYLOR: I think I might know it as a guide wire. Yes. And again, I think there are different brands of long lines. I don't know which one was used and I don't know great detail about them because I don't personally insert them (inaudible) taken out. But yes, there are long lines that have a wire that comes out.

MYERS: I will just ask you about your involvement with it. What you see is the doctor finds a point of access, quite often the inside of the elbow, and using the wire, the line is fed in through the baby's vessels, internally, and the doctor has to gauge that it gets to -- the tip is going to be in the right point near to but not in or touching the heart; is that correct?

TAYLOR: Yes.

MYERS: All right. Once that's done, the guide wire is taken out of the long line? I know you're nodding but the recording won't pick that up. You have to say yes or no.

TAYLOR: Yes.

MYERS: Thank you, Miss Taylor.

Then once it's in position, because it's important to make sure there is no air in the long line, would you agree?

TAYLOR: Yes.

MYERS: And it's important also to make sure that it stays open so it can be used when fluids or medication need to be delivered to the baby?

TAYLOR: Could you repeat that?

MYERS: You have to make sure it stays open, the line stays open, it's running with something through it, so there's no complications when it comes to be used for the baby?

TAYLOR: Yes. The line can almost block if it's left too long without fluids running.

MYERS: You put it better than I do, but that's the point: there's a danger of clotting if the line isn't in use?

TAYLOR: Yes.

MR JUSTICE GOSS: Is it clotting or was it more collapsing?

TAYLOR: To be honest, I don't know the physiology.

MR JUSTICE GOSS: I think we'll leave this to the doctors.

MR MYERS: I will do.

MR JUSTICE GOSS: I don't want to put --

MR MYERS: In any event --

MR JUSTICE GOSS: Your evidence is that -- you can say that it is important to get fluid in, once it has been checked the line is in the right place --

TAYLOR: Yes.

MR MYERS: All right.

MR JUSTICE GOSS: -- for whatever reason?

MR MYERS: Yes, we're going to come to this this morning in any event.

MR JUSTICE GOSS: Exactly. We'll leave it to the doctors.

MR MYERS: The fluid that's put through the line, can you tell us what fluid is that that keeps the line open?

TAYLOR: Um... We can use... If... We can use a heparinised saline to keep a line open. I'm not 100% sure. It's been a while since I've done that, whether that would have been used in a long line. However, we can put 10% dextrose, possibly a small amount.

MYERS: We know approaching -- well, we know at 8.05 that evening, we're going to come to this, 10% dextrose was run through that long line, wasn't it?

TAYLOR: Yes.

MYERS: And was that run through the long line for the purpose of keeping it open whilst Dr Harkness was still waiting to consider the X-ray?

TAYLOR: I don't know the rationale, whether it was that or to make sure he had some fluids, I'm not sure.

MYERS: Do you recall whether [Baby A] actually had anything running through the line before that point?

TAYLOR: No, there wouldn't have been.

MYERS: Would you agree that for the line to be there with nothing running through it, for what must have been at least an hour or longer, is not ideal with a long line, is it?

TAYLOR: To be honest, I -- yes. I would want to say -- I don't know if I can -- I don't really know the timings with that. We would try and get fluids started as soon as possible. Whether an

hour or so would lead to problems, I don't know, I couldn't comment.

MYERS: I'm not going to ask you to comment on medical matters that may go beyond what you deal with, but you deal with assisting in putting up long lines on a fairly regular basis, don't you?

TAYLOR: Yes.

MYERS: And when a long line is put up, the conventional practice is to run fluid through it straightaway isn't it?

TAYLOR: Yes.

MYERS: That's what should happen, isn't it?

TAYLOR: Well, after -- ideally we would want to get an X-ray first before we start any fluids.

MYERS: And normally, that's dealt with, I'm going to come to timings shortly, fairly quickly, isn't it? You get an X-ray, the doctor checks it, and then you can get on with using the long line?

TAYLOR: Yes. Sometimes it may need to be adjusted, so it may be pushed down further or pulled back slightly if they feel like it's not in the right position.

MYERS: There was a delay in Dr Harkness being able to get to the X-ray to look at it to confirm the line was ready for use, wasn't there?

TAYLOR: Yes.

MYERS: And that delay was because he was busy elsewhere dealing with other children, wasn't it?

TAYLOR: Yes, I don't know whether he was on the neonatal unit. From my memory, I want to say that he was in the unit, possibly being scrubbed up with another baby.

MYERS: Do you recall in fact at one point he was fitting a line to [Baby B] in the nursery?

TAYLOR: I don't. I have written in my notes that she's had a line but I can't remember whether that was at that point, whether it was earlier in the day or later.

MYERS: In any event, wherever he was, there was a delay in putting fluids in because the doctor was delayed in looking at the X-ray? Do you agree?

TAYLOR: I think so.

MYERS: Can I just ask this before I move on from that: if there aren't fluids running through the long line, what do you do to make sure the end of it is closed after it has been fitted to the baby?

TAYLOR: It's got a bung on, which keeps it airtight.

MR JUSTICE GOSS: It's got a what on, sorry? Someone coughed and I couldn't hear.

TAYLOR: A bung. We call it a bung.

MR MYERS: Is that a blue cap, in fact, that's screwed on to the end of the line?

TAYLOR: They're now white, but I think at the time they were blue.

MYERS: So the line having been fitted, if it's not going to be fixed up to fluids, then someone has to put that cap on to the end of the long line to keep it sealed; is that correct?

TAYLOR: Yes, or some sort of bung.

MYERS: Some sort of bung. And who does that?

TAYLOR: The doctors.

MYERS: The doctor. I just want to carry on going through the timings, if I could, please, Miss Taylor. If we look to the next entry down on the page that we're on, we see an entry timed at 21.28 by you. We're going to see this is a retrospective entry, you're noting up what has happened, aren't you?

TAYLOR: Yes.

MYERS: And we're going to have a look at what this covers, please. It starts with:

"Observation: stable, pink, well perfused. UVC still in situ but in wrong position. To be used if no other access available."

And then if we could go to J1079, please, so that's the next page:

"Long line inserted by Registrar Harkness, secured, X-rayed, 10% dextrose run through and connected to the long line. Run as per Dr Harkness until line confirmed. Care handed over at 20.00."

We're going to see that in fact the dextrose being run through the line must have happened a little bit after 20.00 because we've seen the records saying 20.05.

TAYLOR: Yes.

MYERS: I'm going to go through it step by step, but this is a retrospective note, and then you go on to say:

"Before leaving, apnoea/heart rate dropped. Cardiac compressions and resus commenced. See documentation by Lucy Letby."

Just dealing with what we have there, please, Miss Taylor. We'd gone to both pages to see the whole of the entry, I'd be grateful if we could go back to 1078, which is the start of the entry. It's the top box, please. It says:

"Observations: stable, pink, well perfused."

That's before things went the way that they did. We can see the order in which you've put these things down in it when we look at both pages. In terms of observations, could we go back, please, to 1123, which is the observations chart we've already looked at? Can we just look at that? In fact, we don't need to enlarge anything at the moment.

We can see, can't we, that in fact if we look at respirations they are elevating during the course of the day, aren't they?

TAYLOR: Slightly, yes, from the morning.

MYERS: Yes. It's the section in the middle. We can see that on the left-hand side of that chart, so on the day before, 7 July, we can see on the left-hand side the respirations are fairly high, they're at the top of the chart, aren't they?

TAYLOR: Yes.

MYERS: And we can see them come down, can't we?

TAYLOR: Yes.

MYERS: Which is what one would hope, if not expect, once [Baby A] is brought into the unit; yes?

TAYLOR: Yes.

MYERS: But actually, although you said stable, if we look at the respirations, they are increasing over time, aren't they, as it happens, when we look at that chart?

TAYLOR: Yes.

MYERS: And although in your notes -- I'm not saying this to be critical, I just want to be clear -- in your notes you refer to respirations being at -- I think we looked at it yesterday -- 60 to 75. If we enlarge this, in fact they're getting above 75 if we take a look towards the end of this period. Can you see that?

TAYLOR: Yes.

MYERS: All right. Also the other reading we've been looking at are the blood gas readings. I just wonder if we could look at J1125, please, which is the blood gas chart. It's also at tile T29.

Lactate should be, as a rule, not higher than 2; is that correct?

TAYLOR: That sounds about right.

MYERS: Yes, about 0.5 to 2, within that range. If we just reduce the chart a little bit so we can see the whole chart, please, Mr Murphy. If we look there for 8 June we can see just after midnight, 00.13, lactate is at 1.6, isn't it?

TAYLOR: Yes.

MYERS: Which is within the range we'd expect. Thank you. By about 6.30 in the morning it's gone up, it seems, to 2.6; is that correct?

TAYLOR: Yes.

MYERS: And that's above the level that's desirable, isn't it?

TAYLOR: Yes.

MYERS: If we look at 14.13 -- I'm not sure if that's 14.13, but it's the last entry -- it's gone up a little bit more to 2.7; do you agree?

TAYLOR: Yes.

MYERS: We don't have blood gas readings after that time, do we?

TAYLOR: No.

MYERS: So in fact it's difficult to say what [Baby A]'s blood gas would have been later on plainly, from this?

TAYLOR: Well, we don't know, yes. It's not there.

MYERS: But we know that the fluids then commenced at 8.05 in the evening. Just to remind ourselves, let's put up J1103, please. Just enlarge this. Thank you.

We can see this is the 10% dextrose that Dr Harkness said should be run through the line; is that correct?

TAYLOR: Yes.

MYERS: In fact, as far as we can tell, if we go right and look under the column "prescribed by", does that say "D Harkness"?

TAYLOR: I'm not sure to be honest. I can't read it.

MYERS: Okay.

MR JUSTICE GOSS: It certainly looks like DH. Maybe if you enlarge it.

MR MYERS: We might be able to check shortly, my Lord.

MR JUSTICE GOSS: Yes.

MR MYERS: It's getting close, perhaps.

MR JUSTICE GOSS: Yes, H-A-R. Not for me, it's for you. You can see what you can see.

MR MYERS: So this is at 8.05 in the evening. Just to keep it in our minds, by this time [Baby A] has been without the fluids that he was prescribed certainly for at least about 4 hours, hasn't he?

TAYLOR: Around that time, yes.

MYERS: Also so far as you can recall, there'd been a delay in the line or the line hadn't been kept open since it had been put in by Dr Harkness up until this, had it?

TAYLOR: Yes. I don't know what time the line was inserted, but...

MYERS: Whatever time it was inserted, although good practice is to have it open subject to getting the X-ray done, this had been open up until this time?

TAYLOR: When you mean open...?

MYERS: With fluids running through it.

TAYLOR: With no fluids running through it?

MYERS: With fluids running through it.

TAYLOR: So that started -- sorry, can you repeat that again, sorry?

MYERS: It's my fault. Good practice is for fluid to run through the line once the line has been put in, isn't it?

TAYLOR: My understanding is ideally you'd want an X-ray before you start the fluids.

MYERS: Once that's been checked then fluid should run through the line, shouldn't it?

TAYLOR: Yes.

MR JUSTICE GOSS: That's the point. The witness is saying ideally you should have an X-ray before you put any fluids through it.

MR MYERS: Yes. I should say you'd want to get the X-ray taken and checked pretty quickly, wouldn't you?

TAYLOR: Yes.

MYERS: That's the point, if I may say, and we'll get down to timings later, but there was a delay in that X-ray being checked, wasn't there?

TAYLOR: Again, this is -- from memory, I can't remember timings, but you know, reading notes, it seems that -- possibly.

MYERS: The deterioration in [Baby A]'s condition began in fact minutes or 15 minutes, within 15 minutes of this happening, didn't it, the line being used with dextrose?

TAYLOR: Again, I don't know exact timings of the deterioration.

MYERS: All right. Just to keep track of what we have from the available records, could we put up J1082, please?

If we look straight down there, this is the entry made, again retrospectively, this time by Lucy Letby, at 7.56 on the morning of 9 June. We can see.

"Glucose commenced via long line with SN Taylor..."

Does that stand for Staff Nurse Taylor?

TAYLOR: Yes.

MYERS: "... as agreed by Registrar Harkness who was present. UVC remained in situ from the day shift. Instructed line not to be used by registrar. [Baby A] noted to be jittery. Was due to have blood gas and blood sugar taken."

Then at 20.20:

"Hands and feet noted to be white."

Do you see that?

TAYLOR: Yes.

MYERS: Before we come to what happened then, I'll just finish what I want to ask you about what had led up to that. The reality is, Miss Taylor, he should have been getting fluids over this period, shouldn't he, over that four-hour period? He should have done?

TAYLOR: Yes.

MYERS: I'm going to ask you what happened when we get to the period we're looking at now here. Lucy Letby came on to the shift round about, I'm not being precise at this point, 19.30. That's when the evening shift began; is that correct?

TAYLOR: Yes.

MYERS: And she was the designated nurse for [Baby A], wasn't she?

TAYLOR: Yes.

MYERS: So as you've described, she will have eventually come over to the cot side where you were for a handover with [Baby A]; is that correct?

TAYLOR: Yes.

MYERS: How well do you recall what happened during that handover process, Miss Taylor?

TAYLOR: I don't remember the handover process.

MYERS: All right. We know that the fluids began at 8.05, we've just seen that, haven't we?

TAYLOR: Yes.

MYERS: So the jury can follow this, before fluids can be given to a baby like this, a number of tasks have to be dealt with so it's sterile and ready to go; is that correct?

TAYLOR: Yes.

MYERS: So we can keep track with it, for example the equipment to be used has to be sterilised, doesn't it?

TAYLOR: It has to be sterilised or come from sterilised packaging (overspeaking) sterile field.

MYERS: So things like gloves?

TAYLOR: Yes.

MYERS: Syringe? The little pot that catches any fluid that is going to be spilled on the floor if you don't have it, that has to be prepared? And in fact the nurse who's going to deal with it will need to make sure that she's gloved up and sterilised ready to go; that's correct isn't it?

TAYLOR: Yes.

MYERS: That will take a little while to get ready, won't it?

TAYLOR: Yes. Personally, I quite like to get things out ready, not to open, but to hand. But to actually open up would take a little bit of time.

MYERS: Yes. So if this happened at 8.05 the thing is you must have been getting ready for this before the formal handover was completed. Do you see what I mean?

TAYLOR: It may be that I had already finished my verbal handover and started to do that after.

MYERS: In other words, I'm going to suggest you had gloved up and got sterilised ready for the procedure.

TAYLOR: I don't know whether it was me that was sterile and drawing it up and administering or whether it was Lucy. I can't remember who it was.

MYERS: The request to do this had come from Dr Harkness, plainly, some time before 8.05, hadn't it?

TAYLOR: I don't know.

MYERS: For you to be ready to do it -- to have been doing it --

TAYLOR: Sorry, yes, he had told me before obviously, yes.

MYERS: And when he told you that, you would have begun to get ready, wouldn't you?

TAYLOR: Yes.

MYERS: The connecting of the bag and putting the fluids down the line has to be done by someone who is sterile, doesn't it, as in they're wearing the gloves, they are wearing the sterilised equipment?

TAYLOR: Yes.

MYERS: So two nurses are involved in this process; is that correct?

TAYLOR: Yes. Usually, yes.

MYERS: And certainly that one, the one who's going to connect the bag and put the fluids down it, has to be operating in sterile conditions?

TAYLOR: Yes.

MYERS: I'm suggesting to you that in fact that would be you because you had got ready for this after Dr Harkness had said this is what needed to be done. Do you agree that's --

TAYLOR: I honestly don't know whether it was me or Lucy.

MYERS: All right. Let me suggest it and you can tell us if you agree or disagree with this. I'm suggesting to you, Miss Taylor, you were in sterile clothing and ready to take the lead with giving the fluids to [Baby A], but you say you can't remember that.

TAYLOR: No.

MYERS: Lucy Letby would be the person who will have assisted you by checking the bag; do you recall that?

TAYLOR: Yes. I think it would be -- I mean, it could be me that was sterile and Lucy was my checker, but I think it could be -- it absolutely could have been the other way round as well.

MYERS: Okay. We looked at the chart with the signature of your name and then Ms Letby's name underneath it.

TAYLOR: Yes.

MYERS: Is it not the case that the person -- the top signature is usually the person connecting and the person below is co-signing and checking the bag?

TAYLOR: Not necessarily, no. Some people may do it that way, I don't personally.

MYERS: You're not aware of any informal practice that that's the way it's normally done?

TAYLOR: Possibly by some people, but by me I'm not aware of that. As far as I can think, I sign generally where there's a space.

MYERS: When the fluids were put down the long line, there hadn't been by that point any repositioning of the long line because of the X-ray, had there?

TAYLOR: As far as I'm aware, reading my notes -- obviously I can't remember the details on the day, but from reading my notes it doesn't look like there was any repositioning, no.

MYERS: So where it had been put, it was still in that place, wherever Dr Harkness had put it?

TAYLOR: It appears from my notes that that's what happened.

MYERS: When the deterioration commenced -- perhaps I should say when you became aware of it -- you were at the computer that we've looked at making up your notes; is that correct?

TAYLOR: Yes.

MYERS: And if we just look, please, T177, please. It's J1353.

The notes you were making up were [Baby B]'s notes; is that correct?

TAYLOR: I don't know.

MYERS: Let's have a look.

(Pause)

Enlarge that, please. I'm looking for an entry at 20.14 or thereabouts.

If we just look at the bottom entry there, please, Miss Taylor. Can you see, it says:

"20.18. 08/06."

This is on [Baby B]'s notes. So this would be typed up sitting at the computer that you've already identified on the photographs, wouldn't it?

TAYLOR: That's -- well, yes, I don't know if that was the notes that I was writing at the time of his deterioration, but I was -- I assume that I was at that computer because I remember sitting at that computer.

MYERS: What we can see is you were at that computer certainly at 20.18?

TAYLOR: Yes.

MYERS: So we know that's where you were at that time. Can I check, do you recall whether at this point Dr Harkness was also in that room?

TAYLOR: I don't remember.

MYERS: In any event, whilst you were there, you've described to us you could see over to where [Baby A]'s incubator was.

TAYLOR: Yes.

MYERS: And the alarm sounded; is that correct?

TAYLOR: Yes.

MYERS: Ms Letby was over there?

TAYLOR: Yes.

MYERS: But she was [Baby A]'s designated nurse --

TAYLOR: Yes.

MYERS: -- that's correct, isn't it? And you'd expect a designated nurse coming on to be taking checks and observations and making sure the baby they're looking after is comfortable and in a good condition?

TAYLOR: Yes.

MYERS: When you went over to [Baby A], do you recall whether he was breathing at that point or not?

TAYLOR: I don't recall.

MYERS: Would it be fair to say that what happens next in terms of the events was very difficult to recall the detail of?

TAYLOR: Yes.

MYERS: When a collapse like this happens, would you agree there's a lot of activity around the cot to support the baby?

TAYLOR: Once you realise that more support and help is needed, then yes.

MYERS: Yes. A lot of extra people come as soon as they can get there; is that correct?

TAYLOR: Yes.

MYERS: There's the movement of people working to help the baby?

TAYLOR: Yes.

MYERS: When this procedure developed and the people were there, the family, [Baby A]'s family came, didn't they?

TAYLOR: Yes.

MYERS: Ms Letby went to support the family at one point; do you recall that?

TAYLOR: I don't recall that.

MYERS: Do you agree it's likely as the designated nurse on the night shift that she would have taken the role of supporting the family and caring for [Baby A]?

TAYLOR: It depends at what point you are talking about. If it was during a resuscitation attempt, then if she's supporting the airway or chest compressions then, no, she would be with the baby.

MYERS: She'd be involved with that, but maybe afterwards, dealing with the sad, tragic events afterwards, the designated nurse would often, not always, be the one who would deal with the family?

TAYLOR: Often, yes.

MYERS: It's not set in stone but that's what happens?

TAYLOR: Yes.

MYERS: And we have heard a little bit about the procedure that follows and I am just going to ask you about that if you could help us, Miss Taylor.

TAYLOR: Yes.

MYERS: There is actually a procedure and things that are done to assist the family when there's been a death like this, isn't there?

TAYLOR: Yes.

MYERS: So when we hear about a memory box being prepared, or clippings taken or things like that, hair clippings or photographs, that's something which is designed to be done at this time if the family want?

TAYLOR: Yes, it would have to be with consent.

MYERS: Yes, of course.

TAYLOR: And the photos are not photos that we would keep, they are on a special memory card, so they're not kept on the unit at all after.

MYERS: Do you recall also, after this, that there was some talk about the fluid bag that had been hung up should be kept and checked? Do you recall anything like that?

TAYLOR: I don't recall that. I may not have been there at that point.

MYERS: All right. Just pause there one moment, please, Miss Taylor.

(Pause)

I'm just going to ask -- just one issue I would like to confirm, and it's from the transcript. It's just for -- if it could be shown to Miss Taylor, please. K8457, page 21 of 53.

I'm going to ask if it can be put on the screen. Can you see a piece of the transcript of an interview, Miss Taylor?

TAYLOR: Yes.

MYERS: Can I check, this is something which is shown to the witness to help to assist her recollection. It's not an exhibit in the case.

MR JUSTICE GOSS: It shouldn't be on your screens.

MR MYERS: It's just to assist with that. If we can just get it so it's a little easier to read, Mr Murphy. The bottom part of the page. Thank you.

Just so you're aware, this is an interview that was held on -- I'll just check the date now -- 7 February 2018. It just deals with a general issue about neonates and collapse. Can you just read to yourself what we have on the screen there?

(Pause)

What I was asking you, Miss Taylor, was whether it's the case that with the small premature babies that they can be prone to collapses. And I appreciate you spoke about this some time ago, but having read that can you help us with how prone they can be to collapse?

TAYLOR: Yes, I think -- I have... When I said that, that's what I believed to be true.

MYERS: Yes.

TAYLOR: And whether that was my rational brain doing that and saying that this is what happened to rationalise whatever has happened, whatever happened... Um...

MYERS: So there's no mystery, can I assist? When you were asked about it, you said:

"They do, unfortunately. You know, a lot of them they do have episodes where they collapse or they die and sometimes they don't necessarily have a recognised condition or whatever (inaudible) why they did and it's a shock to us because we have such a low rate."

TAYLOR: Yes. I think I... I did believe that. You know, when I said that, that's what I believed and that was my opinion --

MYERS: All right.

TAYLOR: -- at the time. I think there were -- you know, I tried to rationalise what happened and I think that's, you know... That would be completely understandable to do.

MYERS: Okay.

TAYLOR: Whether that's true, whether -- you know, I can't... I'm not medical, so that was my opinion as a nursing staff at the time.

MR MYERS: Thank you, Miss Taylor, I just wanted to deal with that having raised it.

Re-examination by MR DRIVER

MR DRIVER: My Lord, if that can be left on the screen, please.

Could you firstly confirm, please, Miss Taylor, that the interview that's on the screen that you were being reminded of, that you were informed took place on 7 February 2018, was actually one of a series of interviews, of interactions you had with the police about several babies that were under your care during your service at the Countess of Chester Hospital?

TAYLOR: Yes.

DRIVER: I don't think it's controversial that this interview focused upon the events surrounding the baby, [Baby I], not [Baby A] or [Baby B]. Do you consider yourself qualified to express an opinion as to the cause of death of a neonate?

TAYLOR: No, and I feel like I shouldn't have said that, probably. I think I did try to rationalise what was happening as a nurse. Whatever happened, that is what I have to do, you know, because that's all the information I had at the time.

DRIVER: Thank you. I wonder whether that could be taken from the screen and I wonder whether we could go to slide 141, which my learned friend Mr Myers King's Counsel took you to earlier this morning.

We're talking [Baby A]. It's about 16.00 hours on Monday, 8 June 2015. If we could now go to the underlying document, please. If we go down to the feeding chart at 16.00 and 18.00 hours, which your attention was taken to, and if we could zoom in on that, magnify that, please.

We'll all see that this is a chart divided into two parts, input and output. Now we're looking at the input section. Thank you.

To the left is the input and Mr Myers invited your attention to those two entries that record feed going in through the nasogastric tube.

TAYLOR: Yes.

DRIVER: And two feeds of 1 with a cumulative total of 2. You said that [Baby A] received what you, the nurses, refer to as trophic feeds.

TAYLOR: Yes.

DRIVER: And these represent trophic feeds, do they?

TAYLOR: Yes.

DRIVER: And for the jury's understanding, what do you as a nurse understand by that?

TAYLOR: We start with small amounts of food to get the baby used to having milk in their tummy. So it's not for nutritional support, although there is some nutritional support from expressed breast milk, it's not for fluids, it is for -- in a way, it's to line the stomach to get that stomach used to having a small amount of milk before you would later on start increasing that milk.

DRIVER: Yes. So is it to stimulate the system in effect?

TAYLOR: To a certain extent, yes.

DRIVER: But nonetheless, it is expressed breast milk going into [Baby A] in this example?

TAYLOR: Yes.

DRIVER: Albeit in very small quantities?

TAYLOR: Yes.

DRIVER: If we just stay with that magnified section of the same chart, we can see along the same line at 18.00 hours there's 25ml. If we can just look at what lies behind, it falls -- without moving the screen, I think we can do this by looking at the chart generally and a magnified part of it at the same time.

So we look at output to the right. We did look at this yesterday. One of the columns on output is urine, which we can see there, and you'll know from your familiarity with these documents that that entry of 25ml falls within the urine output column.

TAYLOR: Yes.

DRIVER: As a matter of interest, how does a nurse measure the quantity of urine passed by a baby?

TAYLOR: So we weigh the nappy. So we would weigh a nappy of the same make and same size to know what the weight is without the urine in and then we would weigh it with the urine in, so we'd then subtract that. The grams equates to the millilitres of fluid.

DRIVER: So there's a tried and trusted method by which you assess, not perfectly precisely --

TAYLOR: Yes.

DRIVER: -- but there's a gauge --

TAYLOR: Yes.

DRIVER: -- for the amount of urine passed by a baby such as [Baby A] --

TAYLOR: Yes.

DRIVER: -- in this example? Was that measurement taken at 6 pm?

TAYLOR: It looks like that, yes, it looks like it was around that time, yes.

DRIVER: Does that evidence, does that show, that fluids were passing through [Baby A]?

TAYLOR: He was excreting fluids, yes.

DRIVER: And does it follow or not, correct me if I'm wrong, that what comes out must have gone in?

TAYLOR: So that will have been fluids that he'd had earlier in the day, yes.

DRIVER: Thank you. We can leave that screen now.

My learned friend took you through the detail of many of the observations that you recorded. On some of the examples you confirmed that some of the observations, some of the data, went outside the optimum desired range.

TAYLOR: Yes.

DRIVER: Yesterday, you told the jury that during the period that he was under your care, [Baby A] presented as a stable baby.

TAYLOR: Yes.

DRIVER: Having been reminded of those precise measurements, do you still regard him as having presented as a stable baby or has your view altered?

TAYLOR: Yes. Even though his respiratory rate was raised at times and it had come and slightly increased slightly, there are other things to consider when it comes to assessing a baby's work of breathing than just the respiratory rate as that can go up and down -- and it's not uncommon for a baby to be on CPAP and have a raised respiratory rate. But you're also looking at the work of breathing, so the recession, any other signs such as grunting or nasal flaring, and also blood gases if we have those as well. So it's not a sole indicator that a baby is -- obviously it is an indication of their breathing but we would look at maybe a bigger picture rather than just that one measurement. It's still relevant but -- yes.

DRIVER: Thank you. On a similar note, if we could go to tile 169, please. The description, a summary of your notes, not created by you but created by a third party. You were asked by my learned friend about jitteriness. Do you remember that, about a baby being jittery or, more precisely, whether [Baby A] presented as being jittery?

TAYLOR: I don't remember that he was jittery. I haven't documented it in my notes, so I can't comment. But it would likely be something, if I'd noticed him being jittery earlier in the day or at some point, I would have documented that in my notes.

DRIVER: What is jitteriness indicative of in a premature --

TAYLOR: It could potentially -- there are many things that it could be, but it could be a low blood sugar level.

DRIVER: Is it regarded as a presentation of significance?

TAYLOR: I think it's something that you have to definitely consider, and again, it's a bigger picture, so it's looking at other things in line with that. Some babies can have a jitteriness and that can just settle and doesn't necessarily have a concerning cause. However, it is also a sign that you do need to be aware of and take into consideration with other things going on with that baby as well.

DRIVER: And having reminded yourself of your notes in relation to [Baby A], you've just told us that you have not noted any jitteriness --

TAYLOR: No.

DRIVER: -- on his part. Is it your practice to make such a note where you observe jitteriness?

TAYLOR: Yes, if I'd -- yes, I would have.

MR DRIVER: Thank you.

Does your Lordship have any questions for Miss Taylor?

MR JUSTICE GOSS: No, I don't, thank you very much. No, thank you very much.

Right. That completes your evidence. So you will in a moment be able to leave the courtroom.

Is this witness going to be required again?

MR DRIVER: Yes, in the future.

MR JUSTICE GOSS: You'll be coming back at a later stage during the trial to give evidence. But I'll say this to you now and so that you can hear it and everybody else can hear it: please do not talk to anyone about anything to do with this case, in particular any of the questions you've been asked or the answers you've given. Don't discuss the evidence in relation to any of the babies, anything to do with the case, and when you come back we'll be going through the same process of questioning again and it'll be in relation to another baby. Thank you very much.

We'll have our 10-minute break now so the witness can leave court and the next witness can come into court -- who is going to be?

MR DRIVER: Dr Harkness.

MR JUSTICE GOSS: It may take slightly longer than 10 minutes to do this, but it'll be 10 to 15 minutes.

(In the absence of the jury)

MR JUSTICE GOSS: The defendant can go down at the -- no, sorry, sorry. I beg your pardon.

MR JOHNSON: I think it will have to be done that way but there is a point I'd like to raise before we start again, probably in the absence of this witness.

MR JUSTICE GOSS: In the absence of this witness, but can it be in the presence of the next witness?

MR JOHNSON: No, it shouldn't be.

MR JUSTICE GOSS: Right. You'll understand why I'm asking the question because otherwise the court was simply going to be reconfigured so that when the jury came in, the witness was in place. Does it have to be dealt with before the next witness?

MR DRIVER: My Lord, Dr Harkness does not have special measures.

MR JUSTICE GOSS: Oh, that's fine, good. We'll deal with it then. Thank you very much. Sorry.

I'll rise next and then the witness can leave the court. Thank you very much.

(11.51 am)

(A short break)

(12.02 pm)

MR JOHNSON: My Lord, I think we've sorted out the issue between us. But for your Lordship's information, it related to an objection that was taken in writing before we started by the defence that producing (inaudible) from witnesses who are not qualified to give them and our response was, yes, but it cuts both ways. That is precisely what was just done with this witness. We objected to that and I think Mr Myers understands our objection.

MR JUSTICE GOSS: In the event the witness said she wasn't qualified to comment on it and I shall tell the jury they must be very cautious and this is a case where one doesn't revisit events with the benefit of hindsight and retrospect. So if they are medically qualified and able to answer the specific question, they can. Otherwise they shouldn't be asked the question.

MR JOHNSON: It was more drawing out the "little babies collapse and die for no reason".

MR MYERS: So it's clear, what we wish to establish is what we say is a propensity for small babies to deteriorate. In fact in the passage we put up, she then went on to make broader comments about collapsing and dying and we did put the whole of the passage there. I thought if we didn't there could be criticism, but I am sensitive to the point my learned friend makes and whilst we may ask about deterioration, unless it's an expert who's dealing with the point, we won't be asking a witness to go that far, to the point of collapsing and dying. That wasn't really what we were after, principally.

MR JUSTICE GOSS: That's all right, thank you very much.

(In the presence of the jury)

MR DRIVER: May I call Dr David Harkness, please.

DR DAVID HARKNESS (affirmed)

Examination-in-chief by MR DRIVER

MR DRIVER: Could you state your full name, please?

HARKNESS: It's Dr David Ian Harkness.

DRIVER: Dr Harkness, could you address your answers to the jury and amplify your voice.

HARKNESS: Certainly. Can I take a seat, is that okay?

MR JUSTICE GOSS: You may sit down if you wish, but the important thing is to keep your voice up so that the people over there and all round the courtroom can hear what you're saying. Thank you very much.

MR DRIVER: Could you confirm that in 2015 you were employed as a paediatric registrar based at times at the Countess of Chester Hospital?

HARKNESS: Yes.

DRIVER: And could you also confirm that in the years since then, on occasion, you've been interviewed by officers from the Chester Constabulary, Cheshire Police?

HARKNESS: Yes.

DRIVER: And that you have made witness statements about more than one series of events?

HARKNESS: Yes.

DRIVER: And more than one baby that was, at the relevant time a patient --

HARKNESS: Yes.

DRIVER: -- in the neonatal unit of the Countess of Chester Hospital? And do you appreciate here today I'm going to ask you questions about your involvement in the care of [Baby A] or [Baby A] as he's sometimes referred?

HARKNESS: Yes.

DRIVER: Have you, since June 2015, been given the opportunity to refresh your memory of the events from clinical notes that were compiled in relation to that baby at that time?

HARKNESS: Yes.

DRIVER: Thank you. Can you confirm, please, that as of the 7th and 8 June 2015, you were a registrar, as we've established, under the consultant Dr Saladi --

HARKNESS: Yes.

DRIVER: -- at the Countess of Chester Hospital? And were you on duty in the early evening of Monday, 8 June 2015?

HARKNESS: Yes. And if you look at the screen in front of you, we're going to draw your attention to certain events and certain notes and we're going to begin, Mr Murphy, please, by going to slide 146.

DRIVER: Dr Harkness, just to familiarise you with this, you wouldn't ever have seen the content of this screen before, would you?

HARKNESS: No.

DRIVER: And you can recognise, I'm sure, the tile there, your name, the stage of your training as of 2015; is that accurate?

HARKNESS: Yes.

DRIVER: And we're going to draw your attention to some clinical notes that you helped compile at this time on this date. So Mr Murphy, if we go behind that slide, please. This, doctor, is a summary of the notes you made, compiled -- this summary was compiled by a third party for the benefit of these proceedings. The description being that:

"Upon [your] arrival in the intensive care unit at 17.00, there was a UVC in situ, no definitive access at that point."

If we actually go behind this summary, please, so we can see your note in fairness to you. Slide down, please. I'm not sure that's the right... Is there another slide to go behind that?

(Pause)

Is that your handwriting, Dr Harkness (overspeaking).

HARKNESS: Yes.

DRIVER: "Written in retrospect." Explain that process to the jury, if you would.

HARKNESS: So due to events, it is not always easy to take time to write whilst things are happening. You're often busy resuscitating a child or talking to parents, talking to staff. What that necessitates is after you will sit and take the time to write out your notes following the event. So sadly, in this case, after the deceased has passed away. In other times it will just be once everything is stabilised that you'll get a chance to do it. So in this case, it's 9.30, so shortly after [Baby A] sadly passed away.

DRIVER: Can you remember your initial contact with the baby, [Baby A]?

HARKNESS: Yes.

DRIVER: Can you recall when it was?

HARKNESS: So I think -- obviously this is going back quite a while -- I started my shift -- I was a community paediatrician by day, so looking after children outside of the neonatal unit. Came to the neonatal unit around about 5 pm. So it was around about 5 pm would be when I met him and his sister as well.

DRIVER: What initial interaction did you have with [Baby A] at about 5 pm?

HARKNESS: So initially what I would do is review all the babies and see where -- how they were, where the progress was.

So in [Baby A]'s case the plan was, as I've written there, was looking at the access that he's got, so something to give him fluids and food by -- so that was my first port of call between him and his sister at that point in time. So that was my main reason to see them.

DRIVER: Thank you. If we could just at this stage focus on the paragraph of your notes that begins "UVC". Could you read and elaborate upon that for the benefit of the jury, if you don't mind:

HARKNESS: Certainly:

"UVC in situ on my arrival on neonatal intensive care unit at 17.00. No definitive access at this point in time."

So definitive access -- by this point what we did have was I wasn't happy to use that. I can talk about that more. So it was left in situ:

"... with a plan to remove if long line sited or pulled back to a low position if long line not successful."

DRIVER: Can you break that down for us and elaborate?

HARKNESS: UVC is an umbilical venous catheter, so it's a tube that goes into the blood vessels of the umbilicus, the belly button. That's a nice thick tube that we can give fluids or medication or feed through. So that's what we tend to do to start with because it tends to be easier to put in. However, once it's gone through the umbilicus, it can either go up towards the heart, through the vena cava or it can veer off to the right and go off towards the liver instead, which is completely unavoidable, but we prefer it to be going into the IVC, the vena cava, which is the main blood vessel. So when we get an X-ray to look for the position, if it's not in the IVC, we tend to try and have something that is in a better position. However, what we can do otherwise is pull the line lower so it -- before it would go in towards the liver and we can use it in what we call a low position. So we tend to only use that for the short-term to make sure we're giving fluids whilst we look for a long line, but it's a safe way that we will use things until we have something better in place.

So that was -- my initial position at that point in time would be that -- my hope would be to remove that once I had the line, the long line, which is a line that is much thinner and smaller, that goes in either an arm or a leg typically, and that will go up a vein from the leg or the arm. Smaller veins -- so because there's a smaller vein there, they're not as central to the heart and you try and put it up through the arm or through the leg and you want it, if it's in the arm, to sit about the mid-point of the chest.

So that was my plan at that point in time. Do you want me to carry on reading?

DRIVER: Pause there and we'll break that down briefly, so we're sure we follow. A UVC was in place?

HARKNESS: Mm-hm.

DRIVER: So the sequence is, a medic inserts the UVC, an X-ray is taken to check where it's lying within the baby before it is used for the purpose --

HARKNESS: Yes.

DRIVER: -- of the introduction of the fluids. If it's in an optimum position, fine, we move on to the next step?

HARKNESS: Yes.

DRIVER: If it's imperfect, if it's sub-optimal, then you have two choices: withdraw it and go again, or adjust it?

HARKNESS: Yes.

DRIVER: And if you take the latter course, you adjust it, it's fit for purpose, but on a short-term basis only?

HARKNESS: Yes.

DRIVER: Thank you. If we could come out of here, we'll probably go back to these notes in a moment and we can go back to our tile -- go to, I should say, our tile 154.

You'll see a brief description of the notes we are about to focus upon timed at 19.00 hours:

"Long line inserted at the first attempt. Left ACF. Sterile technique to 12 centimetres."

Let's look at the original underlying note. So there, at 8/6/15 at 19.00 hours, we see your name. Could you decode all of that for us?

HARKNESS: Under my name the first thing you have there is two stickers and they come on the packaging for the long line so that allows us to trace back if there are any suspected faults with lines, which we didn't have in this case, but we always stick them in the notes just for posterity.

What I've written there is:

"Long line inserted on first attempt."

We always document how many attempts we have, just so we can have an impression of how difficult things can be for the baby:

"Left ACF."

Which is the antecubital fossa:

"Using a sterile technique to 12 cm."

The antecubital fossa is the front of the elbow here (indicating) and that tends to be the main place. We either do

it there or we tend to try and do it in an ankle. This line will have been 20 centimetres long and what we do prior is measure from where we're putting it into the middle of the chest and base our measurement on that so that would have been 12 centimetres and I would have then inserted that 12 centimetres, to aim for that position, and then what I have done there is again, as with the UVCs, we always X-ray to see where they are. We then have an X-ray review sticker which is timed at 7.09. And I have put:

"UVC in liver."

Then:

"Long line in the superior vena cava."

So the vena cava is the big vein that comes down from your head into the right side of your heart. So what happens is the blood vessel the line was in came up the arm, came across, and sat just above the heart, essentially:

"The NGT tube is in the fundus of the stomach. "

So right in the middle of the stomach, which is where you want it. And at this point in time I was junior and my initial impression was maybe I want to pull this back slightly, to have it further away from the heart. Actually, the position was perfectly fine and exactly where we wanted it but that was my initial impression when I filled out that form.

DRIVER: Thank you. We'll come back to that in a moment. Just take a step back.

You came on duty within the unit at about 5 pm.

[Baby A]'s care was transferred to you by colleagues. At which point, does it follow from these notes, that you became aware that a UVC or UVCs plural had been inserted into [Baby A] and you were assessing how well positioned or otherwise the current UVC was?

HARKNESS: Mm-hm.

DRIVER: And then over the next couple of hours, taking us to 7 pm, 19.00 hours, you then successfully, at the first attempt, inserted the long line, which was the preferred --

HARKNESS: Yes.

DRIVER: -- route for providing fluids to the baby? Let's get context: all of this took place, did it, in nursery 1?

HARKNESS: Yes.

DRIVER: And you were responsible for [Baby A] and any other baby --

HARKNESS: Yes.

DRIVER: -- also in that nursery; is that right?

HARKNESS: Yes.

DRIVER: Do you have any recollection as to where in the nursery [Baby A] was placed, in which incubator, where that incubator was?

HARKNESS: Yes. With it being quite a traumatic experience, my memory was actually quite fresh. Coming into the nursery -- I've got a map here, the maps -- essentially, you come into the nursery. On my right-hand side was [Baby A]'s sister in an incubator. And then at 90 degrees to her, straight ahead of me through the door, was [Baby A]. Then 90 degrees to him was another baby who I can't remember the name of, but there were three babies in that room (inaudible) spread out throughout the room.

DRIVER: What we'll do now, Dr Harkness, for our benefit as for yours, we'll replay a short video recording taken after the events, obviously while incubators were in situ within that nursery (overspeaking) and you can help as to your recollection as to (overspeaking).

(Video played to the court)

If Mr Murphy could play that again and while it's playing if you could identify for our benefit, to your recollection, where the babies were.

HARKNESS: So looking through this door here, straight ahead from the two cubicles, the one that's to the right-hand side there, the one that you can just see to the right, would be where [Baby A] was.

DRIVER: The one nearest the camera now?

HARKNESS: No, the one on the right-hand side now. This one there (indicating). So he would have been there (indicating), slightly positioned over, I think, from my recollection. His sister was then 90 degrees into this incubator here. So they were both on that side. And then the third baby was back on the other side of

the room, heading this way now, so where that incubator (indicating) is now.

DRIVER: Thank you.

MR JUSTICE GOSS: There were just the three incubators in the room or were there four where they are now, but the one in between [Baby A] and the other baby was not occupied?

HARKNESS: I can't remember, your Honour. What tended to happen is you would only keep the incubators with the babies in it and the others would be kept outside the room. So from what I remember there was just the three there, but I can't be 100% sure.

MR JUSTICE GOSS: Anyway, you know where [Baby A] was and you know where [Baby B] was?

MR DRIVER: To complete this, Dr Harkness, I think at an earlier stage you made a sketch to assist and inform the police as to your recollection. If we could get that up. It is the exhibit at J888, please.

We haven't got that. We will have later.

MR JUSTICE GOSS: Do we need it?

MR DRIVER: Perhaps not. We'll retrieve it in case we do.

Right. Let's return then, please, to the chronology of your care for these babies. If we could go to our slide 154, please.

154. We've looked at these events at 19.00 hours. We'll just remind ourselves of the sequence of events.

Now go to 156. So you, having placed the long line as described, at 156 do we see, as per the procedure that you've already alluded to, a line having been introduced into a baby, next step X-ray it, check that it's where we want it to be? Is that right? So the X-ray, please. 156, Mr Murphy.

MR JUSTICE GOSS: I think that's the wrong slide.

MR DRIVER: So you placed the line, your radiology colleague takes the X-ray. She and later you check the X-ray to see whether you're satisfied as to the position?

HARKNESS: The radiologist will report this a day or two later, so any decisions are made ourselves at that point in time. So there's no additional support from them. Typically in hours, the next day or the day after.

DRIVER: So the image is taken there and then?

HARKNESS: Yes.

DRIVER: You make your assessment of the contents of the image and then, later, the radiologist provides their assessment?

HARKNESS: Yes.

DRIVER: Thank you. So if we go to slide 176, please, we'll see the record of Dr Harkness considering the image taken at this point in time. Can we slide down, please?

Go back to the summary, please. Go back a page.

So the X-ray was available for review at 20.10. So long line inserted at 19.00. X-ray taken then made available to you at 20.10, at which point were in a position to review the X-ray?

HARKNESS: So what I put there is I was scrubbed, so like you see on the telly in surgery, big gowns, hat, gloves. So I can look at things, but I can't touch anything. So from where I was at this point with that baby, the closest screen for me to look at the X-ray was about 90 degrees to my right. So I had an SHO who was able to get the X-ray image up on the screen for me, so they could get it up and manipulate it and I could look at the pictures but couldn't touch anything or make any changes.

DRIVER: So the X-ray was taken, you were -- does it flow from what you've explained to us -- busy within that room --

HARKNESS: Yes.

DRIVER: -- attending to another baby? From memory can you remember which baby?

HARKNESS: This was the baby that wasn't one of the twins, so the third baby along.

DRIVER: And can you remember what procedure you were performing or undertaking with that baby or not?

HARKNESS: So this was another of the same long lines, so this was my third in a row of these.

DRIVER: Let's consider that then. So three babies in that room, all three required the insertion of a long line. The twins first. Can you remember in which order you did --

HARKNESS: It was [Baby B] first, then it was [Baby A], and then it was this baby. It was prioritised based on the fact that [Baby B] didn't have -- and I've written it in my notes -- she did not have any access at all for any fluids. We normally, as a short-term, use a cannula, so in the back of the hand or a foot, to give just some salt water. But if we think they are going to need it for a long time, we go for the long line. So because she had nothing she was my priority and then I moved through the room from that point on.

DRIVER: Thank you. So whilst you were performing that procedure on the third baby, the image was shown to you, albeit from a distance, because priorities say get the long line in baby number 3, and you told us about 5 minutes or so ago that your opinion at the time was that the line's position was less than perfect but you've since reviewed that opinion; is that right?

HARKNESS: Yes. That's what I wrote in the notes then. Literally from the following day after the events, reviewing it with my consultant colleagues and with the guidance, the national guidance, the positioning was actually exactly where it needed to be. So that was -- so actually, what I documented at the time was my reaction at that point in time, but since literally from the next day onwards I was happy that the position was correct.

DRIVER: But your conclusion at the time was that it was imperfect but good enough to use?

HARKNESS: Good enough to use, yes.

DRIVER: And did you authorise its use --

HARKNESS: Yes.

DRIVER: -- at that point?

HARKNESS: Yes.

DRIVER: If we could go to slide, first, 185, please. So slide 185, written after the event, intended to record an event at 20.26. What is your recollection of this development, Dr Harkness?

HARKNESS: So I think at this point in time, as I documented and is in my statement, I was just about finishing what I was doing with the third baby. In that case the long line was unsuccessful. So I tried to put it into the arms, and potentially the legs -- again, I can't remember without seeing those clinical notes. But what tends to happen is either the cannula isn't successful or when you're trying to feed this little line through, which is about a millimetre thick, it

doesn't feed all the way through to where you want it. So if it's not going as far as you think it needs to go, then you tend to abandon the procedure. It still takes a good hour to sit and go through the procedure, try before you abandon it. So at this point in time from my documentation I've stopped what I was doing and was just starting to prepare -- well, to go back to review at that point in time.

And then what I've put here is "bagging", which is -- essentially what you have is -- we call it bagging because it used to use a bag that you squeeze, but in this case it's a little T-shaped piece that you use your thumb on and what that does is that will deliver oxygen. So rather than doing mouth-to-mouth you can use this little device to push air and help to inflate the chest.

So what I've put is he was apnoeic. Apnoea basically means you stop breathing. So he has had periods where he had stopped breathing that were too long to be a normal part of the breathing and he needed that help to breathe.

What I then put is:

"Good chest movement seen."

So we know that if there's a blockage of the airway, when you try and push any air through it's not going to go through, so you're not going to inflate the lungs, so you don't see the chest move. So the fact that the chest is moving means that the air that I am delivering is helping inflate the chest.

Saturations is the amount of oxygen in the blood. It should be in the high 90s. We would like it to be at least kind of 92 typically. In this case it was in the 70 to 80 per cents. However, when a child is unwell, the -- you have probably have seen the little things that you put on a finger or the little red lights and it's a little red light that goes on a hand that picks up and detects how much oxygen is there. If there's not very much blood supply getting to your hands and feet it doesn't record as well, so it can be unreliable.

His heart rate was 90 to 110 beats per minute. Typically for a baby you want it over 100, 100 to 130. So that's slightly on the lower side.

"OI" I think is meant to be "on auscultation". It's greater than 100. So that's the heart rate, so I've confirmed -- looking at the monitor is coming up as 90 to 110 and when I have listened, for 30 seconds or so, it works out as being just over 100 and not -- over 100 it becomes too difficult to accurately put a number on things by ear.

DRIVER: Thank you. So you have plainly been assisted by the data in terms of the detail of your recollection, but do you actually remember this turn of events?

HARKNESS: Yes.

DRIVER: So you have told the jury that you had at least attempted to put a long line into the third baby. What was it from your recollection that drew your attention then away from the third baby towards [Baby A]?

HARKNESS: So I was called by nursing staff to see him because he was having these pauses in his breathing. So I was asked to go and see him based on that happening.

DRIVER: If we could go back to slide 183, please. Click on there, please.

That records, in the summarised description, that the patient arrested within 1 to 2 minutes of you starting a procedure on another patient. Would that be the third baby, baby 3 as we have been calling --

HARKNESS: I'm not sure that's accurate.

DRIVER: Let's go to the underlying note. That is a third party summary, so let's look at what you have recorded.

Dr Wood is a junior colleague of yours; is that right?

HARKNESS: Yes.

DRIVER: And is the procedure, the protocol in an emergency situation for the most junior doctor present to act as what you call the scribe?

HARKNESS: Either a junior doctor or someone who is free, who is not actively participating in the resuscitation. So it could be a doctor, could be a nurse. But at this point in time the junior doctor was the most appropriate person to do it at that point in time.

DRIVER: So Dr Wood took on the responsibility of making a contemporaneous at-the time record of event upon event upon event?

HARKNESS: Yes.

DRIVER: And is it through Dr Wood's note-taking that you are assisted with regards to the precise detail of the attempts?

HARKNESS: Yes. So again when you're writing in retrospect if you've got a chronology and someone is writing and scribing as you go along, it makes it much easier then to put time frames, because everything goes so fast when it's happening, to help you put things in order and to document it clearly.

DRIVER: So looking at your notes and gaining what assistance you can from them, written in retrospect for reasons we all understand and, you have already explained, timings from the record of Dr Wood, so you would have remembered the event, but for the precise time of each stage of the efforts --

HARKNESS: Yes.

DRIVER: -- you rely upon Dr Wood's contemporaneous note.

You noted that you were called to patient at 20.26. Is that the event -- is that the nurses calling your attention that you've already described to us?

HARKNESS: Yes.

DRIVER: You've assisted already with regards to:

"Bagging starting via Neopuff immediately."

Does that mean you started the bagging via Neopuff or it had already started or you can't remember?

HARKNESS: I can't remember clearly. Most likely nursing staff as they called me but I can't be 100% certain on that.

DRIVER: Understood:

"Good chest movement seen."

You have already described that and the significance of it to the jury. It tends to inform you that there isn't a blockage between the air going in and reaching the lungs?

HARKNESS: Yes.

DRIVER: Next entry, please, Dr Harkness, "Saturations".

HARKNESS: So as I mentioned before:

"Saturations: poor trace, 70 to 80%."

So as on the previous page, that was the oxygen levels being 70 to 80% rather than the 90 per cents that I would like:

"Heart rate on monitor 90-110."

So, again, as I have mentioned before, roughly speaking where you'd want it -- you'd want it over 100. So when I've listened it's over 100 and I've put:

"Impression at the time: was this the second to long line? Long line removed 20.27. Help called at 20.27."

So at this point in time I wasn't sure -- the long line for me was one of the last things that I put in so I decided to think whether or not that was an issue so I removed it at that point in time to be certain and called for help.

I then intubated:

"First attempt size 3, 7cm at lips at 20.28."

So intubation is essentially where you put a tube that goes down into the windpipe and means that you've got a definitive way of giving oxygen into the lungs and inflating the lungs. So the Neopuff works quite well but it requires someone to hold it with two hands for a long time, so what you can do is when you ventilate a baby you can put the tube down and do that --

DRIVER: Pausing there, Dr Harkness, I am just going to over it a little more slowly.

The monitor informed you as to the heart rate. You then listened in the traditional stethoscope way?

HARKNESS: Yes.

DRIVER: That's auscultation?

HARKNESS: Yes.

DRIVER: Once you get to 100 in a minute it's difficult to keep count --

HARKNESS: Yes.

DRIVER: -- of so many beats in such a short time so you approximate that?

HARKNESS: Yes.

MR JUSTICE GOSS: I think it says "on auscultation".

HARKNESS: Yes, it does.

MR JUSTICE GOSS: It's not "OI", your writing's just been misread.

HARKNESS: It's just bad doctor's handwriting.

MR DRIVER: Is what you have just told us, because this event was relatively soon after the introduction of the long line, training, experience, caused you to question whether the long line was indeed the cause --

HARKNESS: So that was my immediate thought. Again, in hindsight, looking through things, there was no possible way that there was a link. Again, in my statement I explain it more, but essentially where it sat is a safe place for it to sit. If it has a wire running through it, which is what we use when we put it in, the wire, if left long enough, can poke a hole into the heart. The wire was gone and there was no chance that could happen and the post-mortem confirmed that hadn't happened.

When it comes to the other risks that can happen, that's if it goes all the way into the heart, which we know it didn't, then it can tickle the pacemaker of the heart and make your heart goes faster. If that had happened, his heart rate would have been over 200 as opposed to 100.

So for me at the time this was a knee-jerk reaction because in my mind this is the last thing that has changed and therefore should be the first thing to go, but there was no actual evidence since at the time or since that has supported that being any cause.

DRIVER: Within the crisis of the moment --

HARKNESS: Yes.

DRIVER: -- you wished to eliminate a potential cause?

HARKNESS: Yes.

DRIVER: "Help called at 20.27."

Expand upon that for the jury.

HARKNESS: That would have been a neonatal arrest call. Typically we were all there anyway, so that would be nurses doctors and it would also go through to my consultant. So in hours that will go to a consultant bleep system, out of hours it will be a phone call to the consultant on call to come and help us.

DRIVER: Thank you.

HARKNESS: Also it would have been the immediate area as well if we needed more nursing staff, more nursing staff would come.

DRIVER: Thank you.

[Baby A] was intubated at the first attempt by you. It's obvious to you, but just remind us why there was an urgent need to intubate the baby in these circumstances?

HARKNESS: With these pauses in breathing that weren't changing -- as I've mentioned with the Neopuff, there's only so long that someone can sit there and breathe for him, so by putting him on to the ventilator we can do all the breathing for him and leave him be for some rest, so it's the safest and most secure way to make sure we can support him with his breathing long term. And at this point in time was the ideal point to do it because at this point he was otherwise stable, his observations were fine, and so it was the perfect opportunity. Where things were as under control as they could be for a baby that's having these pauses in breathing, it was the ideal time to do it.

DRIVER: So it was a successful intubation at the first attempt, the note tells us, it then tells us the size of the tube used.

HARKNESS: Yes.

DRIVER: Which is selected to be appropriate (overspeaking) --

HARKNESS: Yes. We select the size of the tube and how far it needs to go in based on either how much they weigh or by gestation of the baby, so how many weeks old they are. So that will give us an idea of how big and how far to do it.

I've also put then:

"Visualised passing cords."

So to ensure you're going into the right place you look at the vocal cords and if you can see that the tube goes clearly through the vocal cords you know you have gone into the right place. The risk is if you haven't seen it, it could have gone into the stomach instead and you're not helping inflate the lungs. That's why we comment on that one.

DRIVER: So size of tube, 3. How far, 7 centimetres.

HARKNESS: And that's at the lips, so all the measurements are from the baby's lips.

DRIVER: And you would have estimated 7 centimetres was the desired --

HARKNESS: Yes.

DRIVER: And you don't merely rely on measurement, you actually looked, checked (overspeaking) right place?

HARKNESS: We look to make sure it's in right place and then what you would do afterwards, if the baby was stable, would be to get a chest X-ray and that will tell you it's exactly -- the exact position. Obviously in this case this wasn't appropriate at that point in time.

DRIVER: You said you would look to see the exact position of?

HARKNESS: Of the tube, where that is in relation to the windpipe, and that would be based on the X-ray. And you will know by the fact that the chest is moving and the oxygen levels have come up that you're in the right place. The risk with a tube is, if it's too low, it can slip further down and only inflate one lung. If it's too high there's a risk it could be pulled out. So although you know it's in the lungs and in the windpipe you sometimes want to make some finer adjustments to make sure it's in the perfect position. But we were completely happy that it was doing what it needed to do at that point in time and working as it needed too.

DRIVER: You have recorded, relying on Dr Wood's contemporaneous chronology, that that event took place at 20.28; is that right?

HARKNESS: Yes.

DRIVER: Next line:

"HR dropped to 60-70 at 20.28."

HARKNESS: That's his heart rate that's dropped. So our heart rate, we like it to be over 100. We are very concerned if it drops below 60. Below 60 you start to do CPR and you start to do chest compressions. So that was a deterioration that had started to happen after that point in time. So then what I've written is:

"Chest compressions started at 20.28 [as well]."

So the heart rate has dropped to round about the 60 mark, this is where we're not happy, this is where we started to do the chest compressions. Different to adults because obviously children are a lot smaller but you're pushing on the chest to

try and help push the blood around the body and get the heart started again.

Then we've given 10ml per kilo of normal saline. So we give salt water as an injection and what happens is that salt water helps to push that blood a bit further round the heart and it means there's more fluid there to be pumped around so that's one of the first things that we tend to do.

We've also then at 20.23 given adrenaline, so adrenaline makes the heart pump. So what we try and do is do the chest compressions to help push the blood and you give the medications to try and help it to pump as well. So between the two ideally it starts the heart back pumping again.

DRIVER: It may have been a slip of the tongue there. Saline given at 20.31 and the adrenaline given at 20.33. You said 23.

HARKNESS: Sorry.

MR JUSTICE GOSS: It was a slip of the tongue. It was obviously a slip of the tongue.

MR DRIVER: Thank you.

MR JUSTICE GOSS: Unless you can remember it was 10 minutes earlier than shown!

HARKNESS: No.

MR DRIVER: Thank you.

So then it's recorded that Dr Ravi Jayaram, who was the on-call consultant, is that right?

HARKNESS: Yes.

DRIVER: Arrived at the incubator side at 20.33.

HARKNESS: Yes.

DRIVER: Patient reviewed?

HARKNESS: Patient reviewed with Dr Jayaram, yes.

DRIVER: What about the next entries are they --

HARKNESS: So the UVC that I've alluded to before was still in the place and, like I initially mentioned, is that -- if we are not in the ideal position in the vena cava we pull it back to a lower position and new use -- so the decision between myself and

Dr Jayaram was that that would be what we would do because we didn't have that long line in place, so the best thing to do was to pull that back and start to use that --

DRIVER: Pausing there. That takes us where we started really, doesn't it? There was always a UVC in place?

HARKNESS: Yes.

DRIVER: It was fit to be used in the short term. You decided it would have been -- a long line would be preferable, so you inserted the long line, but when this collapse happened, just in case, you removed --

HARKNESS: Yes.

DRIVER: -- the long line? So that is back to plan A, as it were --

HARKNESS: Yes.

DRIVER: -- and the (overspeaking) UVC?

HARKNESS: Which is exactly why. It's that kind of eventuality that means that you want to keep something in place.

DRIVER: Thank you. Next line.

HARKNESS: So we then summarised what was happening at the time, so:

"Continued good chest movement and air entry."

So what I'm saying there is that he's being ventilated now with the tube into his windpipe and the chest is still moving, and I can hear the air going into his lung with the stethoscope, so know that the air is getting into the lungs and everything between the ventilator and the lungs is working as it should be.

We then listen in for the heart rate. At this point, unfortunately, when I'm listening with my stethoscope there's no heart rate at all.

I've put:

"Electrical activity noted on monitor, small complexes."

So what happens is even when your heart stops the ECG, which is the kind of wiggly line you see at the beginning of Casualty and hospital programmes, will still show potentially what looks like

your heart is still working, but that can still happen despite your heart not beating.

So there are other types of problems that you can get when your heart stops that will show you different patterns, so this was just commenting on that pattern at that time. But essentially his heart at this point has stopped and isn't pumping at all.

DRIVER: Pausing there: so notwithstanding the markers on the monitor, you would rely upon the stethoscope, the information --

HARKNESS: Yes.

DRIVER: -- received down the stethoscope?

HARKNESS: Yes. So what I can hear and what I can see with baby -- we would also check the pulses in the groin. That will trump what the monitor is showing me at that point in time. But it's useful to know and record both.

DRIVER: So CPR was continued?

HARKNESS: Yes. We carried on giving the chest compressions and carried on giving the breathing with ventilation.

I then essentially have listed the other -- what we do is we'll give the adrenaline, we will check for the heart rate. If it's not there, we'll carry on giving chest compressions. We then give another dose of adrenaline, check for the heart rate, and carry on. This is -- what I've then documented is the various medications being given and being checked over the space of the next 10 to 15 minutes.

DRIVER: Thank you. So second adrenaline given at 20.35. Sadly, still no heart rate detected? Third given at 20.37. Again, sadly, no heart rate detected. And then next line?

HARKNESS: Second -- that's a bolus of 0.9 saline, so salt water that we have given before. Still no heart rate heard. Fourth dose of adrenaline given at 20.41 and again still no heart rate. So we're not making any difference, unfortunately, at this point this time.

We have then moved on to give sodium bicarbonate, which helps with acid that builds up in the blood. If you have got acids in your blood, which is part of being very tired out, this can help get rid of some of those acids and can help the heart as well. So we have given that at 20.43 and still no change.

And then we've given a further dose of adrenaline at 20.45 and we've gone on and on at this point.

Then we've given some sugar at 20.48. If your blood sugar is very low it can cause you to -- your heart to stop beating so we have given some sugar as well. We have given more adrenaline at 20.49.

We then noticed a heart rate at 20.50. So we've heard a slight heart rate -- again 60 is where we would start the chest compressions below, so we have heard it, but because it's still less than 60, we've carried on giving the chest compressions and the CPR in the next review at 20.57.

Unfortunately, at 20.57, Dr Jayaram has then reviewed and we have not had a heart rate again and we stopped resuscitation at 20.58.

So, sadly, when you're going on for this period of time, even though you hear a heart rate, the heart rate was never high enough that he would have lived and had enough blood going round his body to survive. So at this point it was felt the kindest thing to do was to stop resuscitation.

DRIVER: Thank you, doctor. Could you confirm that the process that you've just taken us through minute by minute is the prescribed --

HARKNESS: Yes.

DRIVER: -- response to these circumstances?

HARKNESS: Yes. This follows a national APLS, which is a Resus Council national guideline that everywhere in the UK will follow. That's a neonatal life support guideline which everywhere in the UK will follow the same guideline, so it's standardised care.

DRIVER: We've focused in detail on the minute-by-minute events as recorded by you, with the assistance of Dr Wood, but taking a step back from the note and going back to the incubator side, is there anything you want to inform the jury about how [Baby A] presented when you went to the incubator and when you did all you could to save him?

HARKNESS: It was incredibly unexpected. This was a completely stable, well baby who had no reason to suddenly deteriorate, so I was very surprised to be called back and to need to do any of this at the time. Something that I've documented later on as well is there was very unusual patchiness of his skin, which I'd never seen before, and I have only seen in cases since within the Countess of Chester and nothing other than that.

So that was -- I was faced with a baby that was unexpectedly deteriorating with no clear reason and a baby that had an unusual skin colour and skin change, which again I'd never seen. So it was a very unusual and unexpected situation.

DRIVER: Pausing there, you've referred to this unusual skin colour or discolour. Could you describe it? Can you remember it? Could you describe it in detail to the jury?

HARKNESS: Yes. So it was very -- I've only ever seen it in [Baby A] and I can only recollect one other baby that's part of the trial.

DRIVER: Pausing there, can you remember the name of that baby?

HARKNESS: Yes. It was one of the [Surname of Babies E & F] twins.

DRIVER: Thank you. We'll come back to that. Let's keep our focus on [Baby A]'s discolouration. Can you describe it?

HARKNESS: There were patches of kind of blue/purple colour, there were patches of bright red colour, there were white patches, and they didn't fit with something that you would find on a baby that's not pumping any blood around their body. That can look purple and can be pale, but it doesn't look anything like this patchy pattern that this baby had. It's very difficult to describe other than that. Ideally, you would want a photo of it -- because, as I said, I've never seen it before or since -- to have a comparison.

DRIVER: Was it constant?

HARKNESS: It was there from shortly after the event started and then -- it -- it wasn't constant in the fact that as he then deteriorated and stopped, his heart stopped beating, he then went pale and purple, which is what you'd expect from a baby whose heart is not beating. So that would be then it changed, but it didn't come and go, from my recollection, it came, was there, he had a cardiac arrest.

DRIVER: Whilst it was there, was it consistent in appearance or did the appearance alter?

HARKNESS: I can't remember the exact -- at this point in time I'm busy trying to save his life, so I wasn't paying close attention to that pattern, but it was unusual enough for me to take note of it and document it.

DRIVER: You replied a moment ago that a baby going through a deterioration like this would inevitably change colour. But is the event that you're describing different to that process?

HARKNESS: Yes.

DRIVER: How?

HARKNESS: The patches -- I could only really show it in photos. The way that a dead or dying person looks is their colour will drain, they will initially go a very dusky purple and white. This was patches that didn't fit with -- you tend to go purple and white, it tends to be your arms and legs first, so you become paler at the outside and it tends to then be more purple towards the middle. This had bright red patches, which doesn't fit because red patches means you've got blood going round your body. It had purple patches, it had white patches, and there was no pattern that would fit with what I would expect. And unfortunately, I've seen lots of babies and children who have had the pattern that fits with death or dying and I've not seen these. So if I had photos I could show you the difference, but without that I can't be any clearer, but it was certainly abnormal.

DRIVER: During your description of these abnormal patches, you've made some hand gestures. Could you tell us where the patches were as best you can recall?

HARKNESS: All over the body.

DRIVER: Does that include the limbs or --

HARKNESS: Yes, so the whole body was different patches.

DRIVER: Thank you.

MR JUSTICE GOSS: That would be a good moment if you're going to go on to the later part of the note, which I anticipated you would be.

We conventionally, as you may or may not know, break off around 1 o'clock for a lunch break, but you obviously haven't finished your evidence yet, you have to answer more questions and indeed questions on behalf of the defence. Could you be ready, please, doctor, to continue at 2.10? Don't talk to anyone about your evidence between now and then, and indeed, when you've completed your evidence in relation to [Baby A] and you will be leaving us for a period and then coming back again, I will give you another direction that you mustn't talk about anything to do with this case at all to anyone. All right? Thank you very much.

So 2.10 then, please, ladies and gentlemen.

(1.01 pm)

(The short adjournment)

(2.10 pm)

(In the absence of the jury)

MR ASTBURY: My Lord, just before the jury come back in (inaudible: distorted) I know we have not been in the practice of having breaks in the afternoon, but the next witness in line, Nurse Bennion, has asked whether an application could be made for screens on her behalf this afternoon. The defence wish to see a statement in advance before the application is made, so I'm asking if we could have a break at the conclusion of this particular witness, please.

MR JUSTICE GOSS: Yes.

MR MYERS: We don't ask to be awkward, because we know that the position is, given where we are, that the likelihood is the application will be granted, but if it is to be dealt with properly --

MR JUSTICE GOSS: You want the evidence, yes.

MR MYERS: We have to in the position we're in so that's the reason, my Lord.

MR JUSTICE GOSS: Of course and I would want one anyway. I'm not just going to rubber stamp it because it has been made.

MR MYERS: It is not to be difficult; it is just a matter of the correct process.

MR JUSTICE GOSS: Absolutely right, Mr Myers. It would be wrong of you not to.

MR MYERS: I'm grateful, my Lord.

MR JUSTICE GOSS: Jury in, please.

(In the presence of the jury)

MR DRIVER: My Lord, members of the jury, Dr Harkness, if we can just take a step back from your originating notes and go -- Mr Murphy will take us to the summary that we looked at earlier and you questioned the accuracy. If we could go back, please, Mr Murphy, one step.

In the description of your notes, part of your notes, the third party analyst has recorded as:

"Patient arrested within 1 to 2 minutes of starting procedure on other patient."

When shown that earlier, you raised an eyebrow --

HARKNESS: Yes.

DRIVER: -- and you were right to do so. Let's look at your note. Go down to the bottom of the page.

You have made two entries. The second entry we are now focusing upon is at 21.30 on 8 June, written in retrospect, and herein you're summarising events prior to arrest, I think that word is.

HARKNESS: Mm-hm.

DRIVER: And if we go to the bottom right, where the page stamp has been superimposed on to your notes, I think it reads:

"Patient arrest [or arrested] within 1 to 2 minutes of..."

Is that finishing?

HARKNESS: "Finishing procedure."

DRIVER: "... on other patient."

That's the third baby that you've referred to. Does that accurately --

HARKNESS: Yes.

DRIVER: -- reflect the chronology of events?

HARKNESS: Mm-hm.

DRIVER: Pausing there then, this procedure on that third baby, how long would that have -- how long did it take?

HARKNESS: So I can only go off of what -- the timings from the notes, really. Like I'd said before, typically you're spending somewhere between 30 minutes and an hour per baby and I would imagine it would have been somewhere in that region, particularly -- I would have had multiple attempts, failed attempts, to try and do it. So I would have been busy for -- I don't think I stopped between doing the three. I literally went one baby to the next to the next. So for the time I've

documented for [Baby A], in between that time and this, which I think is probably between 30 minutes and an hour.

DRIVER: Right. That's for the three babies?

HARKNESS: So that was for this baby and 30 minutes to an hour.

DRIVER: (Overspeaking).

HARKNESS: I think otherwise with twins, I think it would be somewhere -- again, between 30 minutes and an hour per baby which would fit between 5 o'clock and 8.30.

DRIVER: Thank you. So it's a protracted procedure?

HARKNESS: Yes.

DRIVER: And you've described it in general terms, what it involves. So for that period when you were focusing your attention on baby 3, were you doing anything else at that time or were you fully immersed in that task?

HARKNESS: (Overspeaking) like I said before as well, I'd scrubbed, so I'm in sterile equipment, so I can't touch anything or move away from where I am. It takes a great deal of concentration to do it. I've got to try and put a tiny, tiny tube, which is about a millimetre wide, through a tube that's slightly bigger than a millimetre wide into a tiny vein of the same size. So it takes a lot of concentration and focus. So when you're doing it, it's very difficult to be distracted by anything and typically you're left to your own devices as well and only interrupted for something that's urgent.

DRIVER: And it was shortly after the conclusion of that that your attention was drawn to the urgent requirement for you to attend --

HARKNESS: Yes.

DRIVER: -- on [Baby A]?

MR JUSTICE GOSS: Just before we leave that, you have realised now that there were two parts, one very minor and another quite significant difference between the typed summary of the actual notes and the actual notes themselves. A cautionary tale therefore: don't necessarily rely on the typed summary, it could be inaccurate, rely on the original document. I'd spotted that, actually, and once the witness queried it I checked it.

MR DRIVER: Thank you. Apologies to you for --

HARKNESS: That's okay.

DRIVER: -- (overspeaking) that error. Let's go back to the main pages, please, the carousel, as you call it, Mr Murphy. We'll just complete the process with this, doctor.

If we go to tile 189. We've already looked at it, we won't dwell on it. So 189, your notes written at 21.20, which we've already been through in great detail, with the assistance of Dr Wood, that detailed chronology. So back to the carousel, please, at 193.

Again, another feature of that same chronology, the successful intubation.

At 195, again the important efforts that you have given us details about.

At 221 and 223, I'm just setting the chronology if I may. 221 and 223. Click on there for a moment, please. It's the same underlying page(?), so come out of there and go to 225, please, Mr Murphy.

Click on the underlying page and I think this completes Dr Harkness' notes about these sad events.

The same replicated. So Dr Harkness, did that narrative of events you kindly gave us before lunch -- was that the extent of your involvement with the [Surname of Babies A & B] twins?

HARKNESS: Yes.

MR DRIVER: Thank you. Could you remain there and answer any further questions?

Cross-examination by MR MYERS

MR MYERS: Dr Harkness, I'm going to ask you some questions on behalf of Ms Letby.

What you've described to us, and it hardly requires me to say it, is a tragic event, isn't it?

HARKNESS: Yes.

MYERS: I see you nodding. It's important you either say yes or no or whatever your answer is. The system won't pick up a nod.

HARKNESS: Yes.

MYERS: A tragic event but for you, Dr Harkness, it was a piece of personal medical history what you witnessed, wasn't it?

HARKNESS: Yes.

MYERS: Because you have given us a description of skin colour that was very unusual, at least in your experience at the Countess of Chester?

HARKNESS: Yes.

MYERS: Something you'd never seen before?

HARKNESS: No.

MYERS: Unexpected?

HARKNESS: Yes.

MYERS: And you've given us a description of the patches of blue, purple and red and white patches. That's the description, isn't it?

HARKNESS: Yes.

MYERS: Something which was personally striking to you?

HARKNESS: Yes.

MYERS: Seemed to be linked to this, as you put it, unexpected deterioration?

HARKNESS: Yes.

MYERS: Would you agree exactly the sort of detail that would be relevant in any notes you are making for what you've seen at the time?

HARKNESS: Certainly in the notes I've made, I mention that kind of pattern at the point, not knowing the significance of which way we go forward is certainly something I have documented and in future notes from other babies is something I've also documented as well.

MYERS: Something as striking as that is an important part of what you witness when it takes place, isn't it?

HARKNESS: It is, but I'm also not looking at this as a point of a forensic doctor at the time.

MYERS: No, but you're including relevant details that are significant to what you saw happen as a doctor?

HARKNESS: Yes.

MYERS: And this is something which struck you as personally quite extraordinary?

HARKNESS: Yes.

MYERS: Can we just go to page 1065, which is slide 183, I think -- 185, sorry. We're going to read down through this to see what detail you did put in, Dr Harkness. We've got:

"21.20. Written in retrospect."

So this is written after you've had time at least to reflect on what you saw?

HARKNESS: Yes.

MYERS: "Timings from record by Dr C Wood. Called to patient at 20.26 as apnoeic. Bagging started via Neopuff."

Then you describe the chest movement. You have put in details there for the saturations and the like.

Under "auscultation", you have put:

"Impression at time was this seemed 2 long line. Long line removed, 20.27."

Correct?

HARKNESS: Yes.

MR JUSTICE GOSS: Is it "seemed"?

HARKNESS: "Second".

MR MYERS: Sorry, "second to long line". That means appeared to be caused by, doesn't it?

HARKNESS: That was what I thought at the time, yes.

MYERS: That's what you put in these notes. We are going to go down but are we going to see the reference to extraordinary patches of a purple/blue colour, patches of a red colour, white patches? Will that be included in these notes?

HARKNESS: I'm not sure.

MYERS: Let's have a look. Carrying on:

"Intubated first attempt."

Some statistics:

"HR dropped to 60 to 70."

That's heart rate:

"Chest compressions given..."

And it's got the bolus that's given of saline. It gives the adrenaline bolus. It says that Ravi Jayaram had arrived.

Just pausing there you were able to include step-by-step detail of what is taking place, aren't you, Dr Harkness?

HARKNESS: This is going from a chronology, yes.

MYERS: Yes, but you could put in whatever you want as you're writing these retrospectively, couldn't you? Couldn't you?

HARKNESS: I could do but also the emotional situation of a baby that's passed away does colour things slightly.

MYERS: You have put down all sorts of details here, haven't you? I am looking for the detail you gave us.

HARKNESS: Yes.

MYERS: "Patient reviewed by Dr Jayaram. UVC in situ, pulled back."

Is that 3 or 5 millimetres? It may not matter but is that a figure in millimetres?

HARKNESS: Where am I looking, sorry?

MYERS: "UVC in situ, pulled back."

HARKNESS: 5 millimetres.

MYERS: Right:

"Continued good chest movement and air entry. No heart rate detected. Electrical activity noted on monitor. CPR continued."

So you're describing physical signs and treatment, aren't you?

HARKNESS: Yes.

MYERS: Go through -- is that second adrenaline given?

HARKNESS: Yes.

MYERS: "No heart rate. Third adrenaline. No heart rate. Second bolus of saline, no heart rate."

Let's go over the page, it continues with what was given, over the page to page 183 on -- slide 183, which is 1066.

MR JUSTICE GOSS: Could you raise your voice, please, for the stenographer?

MR MYERS: Thank you, my Lord.

I'll read on. This is on to the second page of the notes now, Dr Harkness. The fifth adrenaline bolus and then you go through further medication or treatment that is given -- I'm not going to read all of them out, we can see them there -- through to the end where you talk about the end of resuscitations. But then you didn't leave it at that, did you, you then added a further note, didn't you?

If we carry on scrolling down, please. That note was at 21.20. Then you take time to add other matters in retrospect, don't you?

HARKNESS: Yes.

MYERS: "Events prior to arrest. UVC..."

We've just read through these now so perhaps it doesn't require me to read all of this. But you take time there to add further detail for what took place, don't you?

HARKNESS: Yes.

MYERS: And nowhere in the notes that you made at the time do you make any reference to the unusual skin colour, unexpected, anything like that, do you?

HARKNESS: No, so the -- as I mentioned earlier on, this was only on noticing this in further babies that I noticed that -- and that's why it's in my statement. This is something that -- and also if you look at my statement there was a discussion on the following day regarding this discolouration, which was noticed on a twin, so my recollection of the events and my subsequent notice of the significance came on those documentation and from those further incidents, sadly.

At the time, like I said, it was a very emotional time and this is something I only picked up on after the events.

MYERS: Well, we'll go through what you have said there. To be quite clear, you have said right away this was striking, you'd never seen anything like it before?

HARKNESS: Yes.

MYERS: It's precisely the sort of detail that is relevant for clinical notes you make at the time, isn't it?

HARKNESS: Yes.

MYERS: It's right that after the event, there was conversation about colour changes seen in the skin of children, wasn't there?

HARKNESS: Yes.

MYERS: Certainly by the time you came to make your police -- the statement you'd been looking at principally today in July 2018, you talk about the colour changes then.

HARKNESS: Yes.

MYERS: What I'm going to suggest to you is that whatever took place that night, you did -- you have been influenced in that recollection by conversations that have taken place about skin colouring and that has led you to apply that to what you describe with [Baby A].

HARKNESS: No.

MYERS: So you say -- so I can be quite clear, the only reason -- you only decided it was worth mentioning after the conversations that took place after this event?

HARKNESS: No, this was worth mentioning because it was a pattern recognition in that this is something that -- and this is common in medicine, something in isolation of unknown significance might make you think briefly. When this happens again it starts to become a pattern and it was the conversations following the arrest the following night of the other twin that sparked this interest in discolouration, which me and my colleagues had not previously seen.

MYERS: You didn't think at the time it was worth putting it down?

HARKNESS: At the time it was something that -- this was one of my first neonatal deaths that I'd had to deal with as a registrar, it was incredibly upsetting for me, I was in tears, I required time off work with mental health problems, so at that point in time I was emotional and not in the frame of mind that I can say that my documentation would be 100% as I would have put it in retrospect. That would be my reason for it.

MYERS: Let's move forwards. In October 2016, there was an inquest into [Baby A]'s death, wasn't there?

HARKNESS: Yes.

MYERS: Held by the coroner. You provided a statement for that inquest, didn't you?

HARKNESS: Yes.

MYERS: And that statement is dated 11 July 2016. I'm going to ask that that be put up on the screen so that you can see it. It's not -- it's a statement for you to look at and his Lordship and the barristers. It's not being rude, ladies and gentlemen, it's just the procedure is the witness sees it and can then be asked questions about it.

If his Lordship will allow me to say this, it's what the witness say that is evidence, not what is in there. That's why it is done in this way (overspeaking) my Lord.

MR JUSTICE GOSS: That's absolutely right, yes. It's not evidence in itself, it is a matter about which you wish to ask the witness some questions, and his answers to the questions form the evidence in the case.

MR MYERS: Thank you, my Lord.

Let's enlarge this if we may, Mr Murphy. We can have a look at this -- the date comes at the end of the evidence, Dr Harkness. It's headed "Reference to [Baby A]" and in this -- I'm not going to go through all of it, but it's there for you to see or anyone to go to who wants to ask you.

You identify yourself don't you and then you say that you're providing this statement giving -- detailing involvement in the care of [Baby A].

HARKNESS: Yes.

MYERS: And you refer to having accessed your clinical records.

HARKNESS: Yes.

MYERS: By this time, July 2016, this is well past the date of your reference to the [Surname of Babies E & F] twins and what happens concerning them, isn't it?

HARKNESS: Yes.

MYERS: It's well past the date of the time that you were with your colleagues talking about what had happened with [Babies A & B], isn't it?

HARKNESS: Yes.

MYERS: In fact it's more than a year on from then. On that first page there's reference to the handover and the procedure that was being followed. You say it was a very busy evening in the neonatal unit -- I'm just saying this to deal with the type of thing we have here. You talk about a procedure that had taken place earlier with the UVCs. And then we move on to your involvement.

If we go over the page, please, to page 645, you deal in some detail with the siting of the long line, don't you?

HARKNESS: Yes.

MYERS: There's about half a page of close type on that.

I am going to move down to the centre of the page, the section below what we're looking at here. It's the same page but the lower half of that page, please. If you have a look and just read to yourself the paragraph that begins at 20.26. Have you read that?

HARKNESS: Yes.

MYERS: This is written for an inquest in front of the coroner, isn't it?

HARKNESS: Yes.

MYERS: Over a year after the events we're dealing with right now. We'll come to what it says in a moment but do you say anything there that says that you saw discolouration that was extraordinary and something you had not seen before?

HARKNESS: No.

MYERS: Do you refer to see something that was very unusual?

HARKNESS: No.

MYERS: Or in any way striking?

HARKNESS: No.

MYERS: Do you give a description in terms of blue, a kind of blue-purple colour, patches of red, white patches that didn't fit with anything you would find on a baby?

HARKNESS: No.

MYERS: No. What you say is, "He appeared pale with poor peripheral perfusion", don't you?

HARKNESS: Yes.

MYERS: Nothing approaching the description you give us, is it?

HARKNESS: No.

MYERS: You've said that the reason you didn't put it in the clinical notes was because at that time you were perhaps upset by what had happened and you hadn't established a link, yes?

HARKNESS: I think I still was upset by things at this point. (Inaudible) only have the over 12 months of period (sic) where I'm looking at a set of notes and not knowing the significance of what I'm looking for, but no, it's not clearly documented.

MYERS: No, do you agree it's a highly relevant detail, isn't it --

HARKNESS: It is.

MYERS: -- the description you give now and it is not in your clinical records at the time, is it?

HARKNESS: No.

MYERS: And it's not in your statement to the coroner over a year later?

HARKNESS: No.

MYERS: But you did actually give a description of skin colour, don't you?

HARKNESS: Yes, I have put "pale and poor peripheral perfusion". Again, this is based on something 12 months later and that's all I can say. It comes down to my recollection at the time.

MYERS: I'm going to suggest to you, Dr Harkness, isn't there a possibility that by the time you came to make your statement to the police, nearly 2 years after this, by that point the discussions that had taken place had set in your mind the impression of this colour when it may not have been there at all?

HARKNESS: No, because, as I've alluded to, it's been referenced to another sets of notes which is what jogged my memory and that was something that was with the [Surname of Babies E & F] twins. The documentation in that set of notes of discolouration is what's brought my significance (sic) to it.

MYERS: Yes.

HARKNESS: But my documentation at this time is not fitting with what I've said.

MYERS: Nothing in the documentation relating to [Baby A] from you makes reference to this, does it?

HARKNESS: No.

MYERS: And nothing in your statement to the coroner over a year later makes reference to it, does it --

HARKNESS: No.

MYERS: -- even though you do put a description of skin colour?

HARKNESS: Yes.

MYERS: Now, what you did note at the time, Dr Harkness, but you say now is irrelevant, is what happened with the long line; that's correct isn't it?

HARKNESS: Yes -- sorry, can you --

MYERS: Yes, I apologise. You noted details related to the long line at the time, didn't you, at the time of [Baby A]'s collapse?

HARKNESS: Yes.

MYERS: But what you say now is that actually, on reflection, the long line is irrelevant, what happened with that?

HARKNESS: Yes.

MYERS: Let's have a look at that. You told the jury in your evidence that we know it didn't go into the heart.

HARKNESS: Yes.

MYERS: What we know about it is from what we have on the X-ray at about 7.09, don't we?

HARKNESS: Yes.

MYERS: And at that time you thought that it was poorly sited and it should be pulled back?

HARKNESS: Yes.

MYERS: We don't know if, for instance, the tip of it migrated anywhere in the period before this collapse, do we?

HARKNESS: As I've mentioned previously there was no guide wire to cause a hole in the heart. There was also no possibility, looking at the monitoring, that this caused the arrhythmia. So there is no evidence. It's also securely fastened, using adhesives, to hold it in place. For it to move and cause that would be a very significant and notable change and would be near impossible to happen.

MYERS: The tip of a long line can in fact migrate, can't it, after it's been sited (overspeaking) and it can migrate even without a guide wire in it, can't it?

HARKNESS: It can but it doesn't cause any damage. This calibre will not cause damage. This has also been proved on the post-mortem.

MYERS: Well, let me ask you about that. How would we know for sure where the tip of that long line ended up? What would be the surefire way of knowing where it was at the time of collapse and, sadly, at the time of death?

HARKNESS: That would be on post-mortem.

MYERS: Yes. And was the long line still in [Baby A] on post-mortem?

HARKNESS: No. But the damage was also not there (overspeaking).

MYERS: We'll come to questions of damage and what can happen with the long line shortly. I'm asking you about the siting of it and where it is.

The way to know where it would be would be at post-mortem or on an X-ray or imaging at post-mortem, wouldn't it?

HARKNESS: Yes.

MYERS: And as it happens, the long line was not in position by that point, was it?

HARKNESS: No.

MYERS: And why wasn't it in position by that point?

HARKNESS: It was not in because it was removed due to a possible concern that was not backed up with any evidence at the time or subsequently.

MYERS: You removed it, didn't you --

HARKNESS: Yes.

MYERS: -- when you were called to attend to [Baby A] --

HARKNESS: Yes.

MYERS: -- didn't you? Just to remind ourselves if we look at page 1065, which is slide 185.

Just go to the central passage just above -- between the two hole punches, please, Mr Murphy.

We can see -- we looked at it earlier:

"Impression at the time: was this second to long line? Long line removed 20.27."

HARKNESS: Yes.

MYERS: So two things from that. First of all, undoubtedly your concern was that the long line, even without a guide wire, was a potential problem at this point?

HARKNESS: This was theoretical based on no evidence at the time. And it was a decision made on -- the last significant change that I was aware of was the line being inserted and therefore in my mind the most logical thing was to remove it. There was no actual evidence at that time. If it was causing an irregular heart rate I would have seen that on the monitor. Did not happen. If it was called tamponade there would be clear evidence on post-mortem of blood causing tamponade, this did not happen.

MYERS: We will go through what did happen, but what I am asking you is your concern at that point was it could have been a cause?

HARKNESS: Could have been a cause.

MYERS: And then, because of that, you removed it?

HARKNESS: Yes.

MYERS: There are dangers associated with a long line being very close to or in contact with the heart, aren't there?

HARKNESS: Yes.

MYERS: You've talked about the possibility for the long line causing damage to the heart?

HARKNESS: Yes.

MYERS: There's also the possibility, isn't there, of a long line triggering arrhythmia of the heart?

HARKNESS: Yes, I mentioned that.

MYERS: And just to assist the members of the jury, if there hasn't been any explanation of arrhythmia before, arrhythmia refers to irregular beating in the heart?

HARKNESS: Yes, which I thought I had mentioned to the jury.

MYERS: Which is why you make reference to the monitor and you didn't see anything on the monitor that showed that? I understand that.

HARKNESS: And also the heart rate on auscultation was between 90 and 100 or dropped below. Arrhythmias are fast, in the region of 200 to 300.

MYERS: I'm also going through the events that took place and what is going through your mind, Dr Harkness, but as a matter of principle there are dangers with a long line too close to the heart, aren't there?

HARKNESS: Yes.

MYERS: At the time we're dealing with here, or at about this time, your concerns were that it was too close to the heart, weren't they?

HARKNESS: That was my concerns at that point in time, which are in fact baseless based on my evidence subsequently.

MYERS: Well, you're making that decision for us when you say that, aren't you?

HARKNESS: From my medical experience and from national guidelines, this is in the correct place and there was no evidence at the time or subsequently that that long line in itself did any damage.

MYERS: If you look at slide 144, please, which is J1064, just to enlarge the bottom half of this, please.

If we look at what was written at the time, we can see at the top left:

"19.00. D Harkness. Long line inserted on first attempt."

What's that, left ACF?

HARKNESS: Mm-hm, sterile technique.

MYERS: Left ACF is the left bend of the elbow in case anyone wonders what that is (overspeaking). So that's where it has gone in?

HARKNESS: Yes.

MYERS: I know that's an abbreviation.

HARKNESS: Yes, I've discussed that previously.

MYERS: All right. The next thing that we see, if we look down at the X-ray review -- that's an X-ray review conducted by you on looking at the X-ray, isn't it, Dr Harkness?

HARKNESS: Yes.

MYERS: Just pausing there, as a matter of information for the court, a doctor who is working in clinical practice dealing with babies will have to make decisions regularly based on what she or he sees on X-rays? That's correct, isn't it?

HARKNESS: Yes.

MYERS: So you have to become experienced in interpreting X-rays and radiographs?

HARKNESS: Yes.

MYERS: When you looked at this, you noted -- is it your handwriting where we see the comments?

HARKNESS: Yes.

MYERS: You refer to the UVC being in the liver; we know about that. The long line position, it says superior vena cava, which is the large vessel coming into the right side of the heart bringing in blood:

"Long line at right subclavian/SVC. To be pulled back."

HARKNESS: Yes.

MYERS: So you're describing a junction of two large vessels there, aren't you?

HARKNESS: Yes.

MYERS: And your view then was it was to be pulled back?

HARKNESS: Yes.

MYERS: And can I check? When was it that you decided it needed to be pulled back? Looking at this, can you help us?

HARKNESS: So the review would have been -- the X-ray was taken at 7.09. The X-ray would have been reviewed at some point during the procedure I was doing -- I have not got any clear documentation of when that was reviewed. It takes 15 to 30 minutes for them to come and do the X-ray.

MYERS: Right. Where we see under where it's got the number 1064 we can see it says "2120" (overspeaking) and it says below that, "Time 20.10"?

HARKNESS: So that must have been the time that I reviewed them based on that.

MYERS: Right. So you reviewed it at 2010. Because of what you saw on the long line -- on the X-ray, your view is it needed to be pulled back?

HARKNESS: That was my view at the time with the experience I had, yes.

MYERS: And in fact if that was a danger then does it not remain the same now?

HARKNESS: That was not a danger then --

MYERS: Okay.

HARKNESS: -- and it is not a danger now because the placement was correct. With my experience at the time and my prior knowledge, that was my assumption at that time.

The national guidelines, the latter experience I've got and the experience of my colleagues does not suggest that that line was in the wrong place.

MYERS: You say it was perfectly fine?

HARKNESS: From my BAPM requirements, yes.

MYERS: All right. If I suggest to you it wasn't ideal, is that right or is that wrong?

HARKNESS: No, it is ideal.

MYERS: All right. It's ideal, you say.

What time had you put the long line in, can you help us with that? Because it says -- the note is 7 o'clock but can you assist us with what time you put the long line in? Do you have any idea?

HARKNESS: Somewhere between 5 o'clock and 7 o'clock. I did one line prior to that, which most likely took me 45 minutes to a hour. So this is most likely between 6 and 7 o'clock.

MYERS: Yes, in one of your statements you say it might have been around 6 o'clock. It's important to make sure the long line is in the right place, isn't it?

HARKNESS: Yes.

MYERS: If it was inserted around about some time between 8 and 7, maybe as early as 8, why did it take --

HARKNESS: 6 and 7.

MYERS: I apologise, 6 and 7, maybe as early as 6, why did it take until 8.10 before you'd reviewed it?

HARKNESS: So I was scrubbed, as alluded to before, so I can't walk away from the computer. The X-ray department take between 15 minutes to 30 minutes, typically, if not longer, to come to the department. The child can't go to X-ray, which is, generally speaking, quite quick. They have to bring a portable X-ray to the unit, which takes a lot of time. So you wouldn't expect to be able to report these within 30 minutes. An hour I would say is not an abnormal amount of time to wait for a review of one of these lines.

MYERS: But surely -- let's say -- if it was positioned in the wrong place, you would want to know that quickly, wouldn't you?

HARKNESS: This is the constraints of the hospital I'm working in.

MYERS: That's what I'm asking you to help us with.

HARKNESS: At that point in time there was also no suggestion from the deterioration that would fit with the complications caused by the long line.

MYERS: We see a note at 21.20 to the left of that. Can you read that to us, please, Dr Harkness? "Scrubbed" it begins.

HARKNESS: "Scrubbed and inserting long line in another patient whilst X-ray reviewed, so unable to action."

MYERS: Had you not been involved in inserting a long line to another patient would you have been able to get on with this more rapidly?

HARKNESS: Yes.

MYERS: Do you agree it's not ideal to leave it as long as you did before checking the X-ray?

HARKNESS: In an ideal world I would have the X-ray then and there within a minute of it happening. In reality, that's impossible.

MYERS: Why did you -- it wouldn't be impossible if, for instance, there were more staff available would it?

HARKNESS: No, but I can't change the state of our NHS, unfortunately.

MYERS: No, I'm not cross-examining you about that.

Why did you say that 10% dextrose should be run through the line?

HARKNESS: 10% dextrose is safe wherever it goes within the body.

TPN, which is the fluids that we use to give babies over a longer period of time can be corrosive. It's got various salts, which can be acidic and cause corrosion. So those you do not want going into the heart, you do not want going into the liver or anywhere that you're not happy with.

So if there are -- if we're not able to confirm then we can start the sugar which will give the baby some sugary water, which will keep them hydrated, it will give them energy, but

doesn't run the risk of causing these burns and damage to the heart.

It's the same reason why we don't use the UVC for TPN unless we're happy it's in the right position because of that.

MYERS: Had anything been running through the long line in the couple of hours it had been sited up to the some time you asked for the 10% dextrose?

HARKNESS: You'd have to check with the notes to see when they were started. I would have asked for them at that point in time. There wouldn't have been anything running prior to this.

MYERS: So the long line was in position with nothing running through it for about up to 2 hours?

HARKNESS: Yes.

MYERS: Ideally, there should be fluid running through a long line, shouldn't there?

HARKNESS: Ideally.

MYERS: And it isn't appropriate practice for it to be left empty, if I use that word, for as long as this was left is it?

HARKNESS: It's not irregular practice, but no, it's not the ideal practice.

MYERS: Leaving a long line in situ without fluid running through it?

HARKNESS: Theoretically a clot. I have never seen it. The line itself is filled with saline already, so there's nowhere for there to be a clot within that line. If a line is in place for a long time, as in we are talking days, then clots can form. But again, if there was a clot there would be evidence on this post-mortem to suggest a clot.

MYERS: I'm interested in what the danger is, and the danger is clotting?

HARKNESS: Potentially.

MYERS: And for that reason, fluid should be run through it as soon as possible?

HARKNESS: Ideally, yes.

MYERS: And the reason we couldn't -- you couldn't get to the point of fluid being run through it sooner than that was because of the time being taken by you dealing with other matters, wasn't it?

HARKNESS: No, this would have been from the X-ray. I had said the -- it was the delay in the X-ray that I reviewed because I was still able -- and as I said before, I was able to review this X-ray whilst I was still doing the next line in the next child, so I was able to review it as soon as the images were made available. So the delay comes from radiology and the X-ray. And the decision was made to start the fluids as soon as I've seen that X-ray regardless on (sic) needing to move that line back.

MYERS: But I've asked you about delay on the X-ray and I am not going to return to that.

HARKNESS: This is not in relation to me being delayed in looking at the X-ray. What I was doing at the time looking -- up to this point, me doing a line in the other child did not affect the time that I reviewed that X-ray.

MYERS: Can I just ask this then so I can understand, and anyone else who wants to know, why did you not arrange for fluids to be run through the line as soon as it was sited, if that's the normal practice?

HARKNESS: Because we like to see the X-ray first to check. Quite often there's reluctance from nursing staff to start fluids without an X-ray. It tends to be an issue (inaudible: coughing) they would like to see the X-ray.

MYERS: Can I just ask: if you were doing this procedure again, would you choose to put a long line ideally in the same position that you put this one?

HARKNESS: Yes.

MYERS: Would you choose to have it empty for up to a couple of hours?

HARKNESS: It's not empty, it has saline in it. At no point is it empty.

MYERS: Would you choose to have no fluids running through it for up to 2 hours?

HARKNESS: Ideally, no.

MYERS: Ideally, would you choose to see what its position was before you instructed anyone to run fluids through it?

HARKNESS: In an ideal world I would get the X-ray done as soon as the line was inserted, make my decision on what I needed to do with the line, and start the fluids. That would be the ideal situation.

The differences in opinion between where we start fluids relating to the X-ray is something that is quite a common debate between medical and nursing staff. Medical staff are much more keen to start the fluids due to, as I mentioned, there not being the risk from the fluids, whereas nursing staff tend to be more reluctant and wanting to see the X-ray.

In my practice what I would ideally do was, like I said, I would put the line in, get an X-ray straightaway and I would start the fluids.

MYERS: Put the line in, X-ray straight away, start the fluids?

HARKNESS: Yes.

MYERS: Not over 2 hours, which is what we have here?

HARKNESS: No.

MYERS: If you were in a position again -- if you read what we've got on that X-ray, if you'd written what's put there, would you, if you had had time, chosen to pull the line back before the collapse happened?

HARKNESS: At that point in time, with my knowledge at the time, I would have done. It still would have been in the safe position, it still would have worked as intended. So that would be what I would have done.

Hindsight is 20/20, but from my current experience using it as it was was completely appropriate.

MR MYERS: I'm not going to repeat what I say about it, ideal or otherwise. Those are the questions I have, Dr Harkness.

MR JUSTICE GOSS: Thank you very much.

Re-examination by MR DRIVER

MR DRIVER: Dr Harkness, did you see unusual, indeed striking, discolouration on the body of the dying [Baby A] or may that image have been set in your mind --

HARKNESS: No --

DRIVER: -- through subsequent discussions?

HARKNESS: Categorically, yes, there was this discolouration.

MR DRIVER: Does your Lordship have any questions for the doctor?

MR JUSTICE GOSS: No, I don't. Thank you very much indeed.

Dr Harkness, that then completes your evidence at this stage. But as you know and we know, you're coming back to give evidence again. But you'll receive plenty of notification as to when that is.

As I said to you before we broke off at lunchtime, please do not discuss this case or anything to do with this case with anyone, in particular any colleagues or anyone at all. All right?

HARKNESS: Yes.

MR JUSTICE GOSS: Thank you very much indeed. That's something that's said to every witness in every case. It's one of the rules.

HARKNESS: Understandable. Thank you.

MR JUSTICE GOSS: Yes, you can understand the reason for it. Good.

(The witness withdrew)

I think we're going to have a short break now because there are some things that have to be dealt with. I know we don't normally have an afternoon break, but we will have a break. Ten minutes? About 10 minutes. So not a long one. So just in the room there. Thank you very much indeed.

(In the absence of the jury)

Just this, Mr Myers -- I didn't want to raise it this front of the jury -- are you advancing a positive case that there was no unusual discolouration in [Baby A]'s case or are you simply putting the prosecution to proof that essentially there was?

MR MYERS: No, we -- so where -- where discolouration is concerned, first of all, where there are accounts of it being the same, we take issue with that. In [Baby A]'s case we certainly take issue with the description of the florid type of discolouration that's been described by this witness. And we say that whatever the situation was with him, that has been

influenced by what witnesses have seen with other children. We don't accept they're all of one thing.

We -- the principal position where [Baby A] is concerned, we maintain he was pale. That's what we see in the notes. There will be skin colour changes with all children, that's recognised. But this description of the very florid rash, migrating and moving around like this, on the basis of the evidence that we see, we do not accept that. So it's a combination of (overspeaking).

MR JUSTICE GOSS: I think I understand what you are saying. You're not positively asserting that there was no discolouration? I don't know, it may be...

MR MYERS: I have to say, we wish to see what the state of the evidence is as we question it so the extent the prosecution are put to proof to show that this is discolouration. What underlies all of this is the argument as to whether there is sufficient evidence from this to draw the conclusion this establishes an air embolus. So looking at the quality of the evidence on discolouration is a key part of what we are doing.

MR JUSTICE GOSS: I see.

MR MYERS: To some extent, I have to say, we shall see where we get to when we get to the end of the evidence on it, but our starting position is that a defining feature of [Baby A] was the pale nature of his skin, notwithstanding whatever other colours there may be in relation to changes on the way, sadly, to death, which this doctor talked about.

So it's difficult to say there is no discolouration because there may well have been. A patient may be cyanosed and there will be colour changes in association with that. But we don't accept what is regarded or presented as a kind of hallmark florid migrating colour around the body. We don't accept the evidence establishes that.

MR JUSTICE GOSS: Thank you. That's much clearer, thank you very much.

Right.

MR ASTBURY: I enthusiastically nodded when you suggested 10 minutes. I haven't yet seen the statement. I've sent an email and haven't had a response.

MR JUSTICE GOSS: I assumed when I looked at you for 10 minutes I assumed you were saying, yes, I've got it and it's --

MR ASTBURY: That's why I thought I had better say (inaudible) plenty of time to take it.

MR JOHNSON: Can I deal with another issue? We're, all the time, trying to keep a sequence that's most intelligible to the jury and cause least inconvenience to the people who can least afford to be inconvenienced.

Tomorrow we have Professor Kinsey and Dr Arthurs. Professor Kinsey has very kindly struck tomorrow out of her diary for our benefit. Dr Arthurs is only available tomorrow for several weeks after today.

MR JUSTICE GOSS: Tomorrow and then not available for several weeks?

MR JOHNSON: Yes, sorry. If we start to call Caroline Bennion now, whenever she is ready, whenever the application has been determined, there is, we believe, a substantial risk that her evidence will cross over into tomorrow by an unquantifiable amount. We don't want to lose the time remaining. We can fill the rest of the day with reading and call Caroline Bennion after the experts tomorrow. That's our preferred approach and we're really looking for your Lordship's approval of that, please.

MR JUSTICE GOSS: Thank you very much. It was a long run up to the ball, but I understand what you're saying.

MR JOHNSON: It's important that everyone understands why we're doing this, though.

MR JUSTICE GOSS: Of course -- well, the jury don't know what's coming next in any event.

MR JOHNSON: Quite.

MR JUSTICE GOSS: So we can simply resume with some reading and occupy time this afternoon --

MR JOHNSON: Correct.

MR JUSTICE GOSS: -- and then presumably then put the witness who was due to give evidence this afternoon back to some time next week.

MR JOHNSON: Or to tomorrow afternoon. See how we go.

MR JUSTICE GOSS: By which time we should have the statement.

MR JOHNSON: Exactly. It has that advantage as well.

MR ASTBURY: The latest bulletin is that it may not be ready. So my blushes may be saved by that course.

MR JUSTICE GOSS: Let's do that then. All right. Do we need a break then?

MR JOHNSON: I don't think so. As soon as the jury are ready, we'll be ready.

MR JUSTICE GOSS: I'll just check.

Ms Letby, do you need a comfort break or are you going to be able to go through the rest of the afternoon? Thank you very much. Everyone else all right?

MR MYERS: My Lord, yes.

MR JUSTICE GOSS: Good.

(Pause)

MR DRIVER: Does your Lordship have the bundle of statements? Page 84 of our pagination. Christopher Wood.

MR JUSTICE GOSS: That's very helpful, thank you.

Jury back in, please.

(In the presence of the jury)

Yes, Mr Driver.

Witness statement of DR CHRISTOPHER MARK WOOD (read)

MR DRIVER: I'm going to read the content of some more statements to you, beginning with a statement made by Dr Christopher Wood, dated 2 May 2018, and you will recall the last witness making reference to Dr Wood, who was his scribe, as he would describe it.

The statement says:

"I am Dr Christopher Mark Wood. I started my general practice training in the North-west Deanery on the Wirral, working between Arrowe Park Hospital, St John's Hospice, two different GP practices, both of which were in Birkenhead, and the Countess of Chester Hospital as one of my placements.

"In the second year of my general practice training, I was given a 4-month paediatrics and neonates placement at the Countess of Chester Hospital between 1 April and 5 August 2015. I have been

asked to provide a statement detailing my involvement in the care of [Baby A].

"The medical notes for each baby are recorded under the mother's name during their admission into hospital. I have been informed the family name given to [Baby A] is [Surname of Babies A & B].

"A copy of the clinical record in the name of [Baby A], date of birth 7 June 2015, has been provided to assist me in recording [perhaps it should be recalling] my involvement in [Baby A]'s care.

"[Baby A] was born on 7 June 2015 at 20.31 hours. I first met [Baby A] the following day on 8 June 2015 at approximately 19.00 whilst on an on-call neonates senior house officer shift.

"I was in company with Dr Harkness, the registrar, when we received a handover around 17.00 hours. From the handover it was identified that there were three babies on the neonatal unit that required reviewing and [Baby A] was one. A UVC, an umbilical venous catheter, had been inserted at 17.00, but further access was required. As the junior doctor, I assisted the registrar, Dr Harkness, as he passed a long line into the ACF [the antecubital fossa]. This was to assist with feeding and providing nutrition.

"This procedure is completely sterile and involves Dr Harkness carrying out the procedure in the confines of the enclosed incubator. To enable Dr Harkness to remain sterile, I assisted by helping him prepare the sterile equipment trolley and passing him the relevant items to maintain his sterility.

"The long line procedure was a relatively new procedure to me and I watched and learned from Dr Harkness."

If we could please, Mr Murphy, go to slide 154 of [Baby A]. There, if we just click on, please, and go down to the notes themselves, you'll see the record of this procedure. So scribed by Dr Harkness, as we've just heard, witnessed by the trainee, Dr Wood:

"Following the insertion of a long line, an X-ray was requested to check the positioning."

You have already seen that request and the consequent X-ray:

"This was a routine procedure, which is carried out to make sure the line is in the correct position before it is used to administer nutrition. The positioning of the long line was reviewed by Dr Harkness at 20.10 hours and I understand it

showed that the line was in the superior vena cava and needed to be pulled back a little way before use.

"I was probably the one who requested the X-ray to be carried out, being the junior doctor. This allowed Dr Harkness, the registrar, to carry on with one of the other patients as there were three babies with lines that required looking at and fitting.

"I would have been the doctor to update [Baby A]'s medical records, requesting the X-ray via the computer system at the nursing station nearby. There is a pro forma sticker, which is also attached to the handwritten note, requesting an X-ray."

And you can see it, I think, on the screen:

"Anything I have requested electronically will have a time and date stamp along with my logging-in details. The X-ray machine is portable equipment that is moved around the unit. The request for X-rays on neonates is normally prioritised.

"I then went into nursery room 2 to review another baby that was within my competency levels.

"Every baby, especially in nursery room 1, is connected up to a monitor that provides live information about their heart rate and oxygen levels. If the monitor notices apnoea, which is a low oxygen level, then an alarm will sound. I recall somebody shouting for assistance. I believe it may have been one of the female nurses, but I cannot be sure.

"All doctors carry a bleep, which is the old-fashioned pager system, and if an assistance call is put out, the crash bleep is a continuous sound and then audible instructions as to where you need to go quickly. I don't remember hearing a crash bleep as we were very close by at the time."

If we go to slide 168, please. We see movements of -- well, at 167, we see Dr Harkness and a minute or two behind we see Dr Wood, who we're focusing upon. If we click behind, there should be a little more information, not much, and that just tells us that Dr Christopher Wood -- at that time, his swipe data suggests entrance from the maternity neonatal entrance doors in:

"From the medical notes at 20.26 hours [Baby A] was noted to be apnoeic according to the monitor and displayed poor respiratory effort. Dr Harkness was nearby and arrived immediately. I was in a different room on the same ward and attended in less than a minute. When I arrived in nursery room 1, I could see Dr Harkness and at least two other members of the nursing staff, but I cannot recall their names. They had already started

assessing [Baby A] and when I arrived, they had started to take apart and dismantle the incubator to allow better access to [Baby A].

"Dr Harkness was providing breaths via a neonatal puff. From memory, I believe there were three, or possibly four cots, in nursery room 1. [Baby A]'s cot was situated on the far wall.

"Respiratory support was immediately started using the Neopuff device. From the medical records, I note that the long line was pulled back in case this was a cause. Again from the medical records, oxygen saturations were between 70 to 90%, with a heart rate of 90 to 110. The on-call consultant, Dr Jayaram, was called and asked to urgently attend. I recall he arrived very quickly.

"As [Baby A]'s oxygen levels began to fall, along with his heart rate, Dr Harkness managed to intubate [Baby A] on the first attempt at 20.27. Following this, [Baby A]'s heart rate dropped even further and chest compressions were commenced immediately. I briefly assisted Dr Harkness with chest compressions whilst the incubator covers were removed to enable better access to [Baby A]. Chest compressions on a baby of [Baby A]'s size are carrying out using one or two fingers only.

"At this point other staff members had arrived to assist and I was probably the least experienced person there in relation to neonatal babies. I took a step back and switched to scribing."

At slide 184, and you've already seen this, we see his contribution in that regard:

"Everything happened very quickly, within minutes, and at 20.28 hours, on 8 June, I took on the role of scribe. All of the timings recorded would have come from a small fob watch that I use, as we are unable to wear a wristwatch and have to be bare from the elbow down. Scribing is an important role whereby a member of staff records all actions and drugs that were given and acts as timekeeper to ensure the correct drugs were administered in a timely fashion with the correct time gap between each administration.

"Dr Harkness was instructing what drugs to be drawn up, the dosage to be used, the preparation and availability of the drugs. I also documented the staff present during the resuscitation. Dr Harkness took the lead role until the consultant, Dr Jayaram, arrived.

"Dr Harkness gave out clear instructions to the staff present of what to do next. I recall a member of the nursing staff was asked to go and get the family, a standard procedure that is

common in these circumstances. It shows the family that we are doing everything we can to save [Baby A] and I recall they arrived very quickly."

He then sets out all the entries, which we've been through more than once and we have them, so we need not read them out.

I am now at page 93 of your Lordship's bundle. He summarises, Dr Wood, by saying:

"Resuscitation attempts carried on for approximately 40 minutes with little improvement to [Baby A]'s condition. Dr Jayaram discussed with the parents the possible outcome and the withdrawal of life support. I continued to scribe throughout the duration of the resuscitation efforts, which ultimately concluded at 20.58. In total, [Baby A] was administered adrenaline seven times, three fluid boluses and one sodium bicarbonate bolus over this period, with ongoing chest compressions and ventilation breaths.

"I cannot remember what member of staff administered what drug. On the medical notes I recorded the following members of staff as being present..."

And he lists them, but we have that information on our data:

"At the conclusion of the resuscitation attempts, I left the room to allow the parents and the senior members of staff some privacy and space with the family. I personally had no involvement with the family. I had no further involvement in the care of [Baby A]. The clinical notes and my entry relating to the scribing during the resuscitation attempt is the only record I would have made to [Baby A]'s medical notes.

"As a doctor it is only natural that you start to question: is there anything else we could have done? I was at the end of a long day shift and [Baby A]'s death came as a shock. This was a child that was considered fairly stable with no major concerns. He wasn't flagged at the beginning of the shift, during the handover, as something significant had happened during the previous shift. There were no concerns around [Baby A]."

And that's the end of the relevant parts of Dr Wood's statement.

MR JUSTICE GOSS: So Dr Wood was in the second year of his GP training. This was a secondment, so he would be classed as a senior house officer then, would he?

MR DRIVER: Yes, in effect.

MR JUSTICE GOSS: With no special training?

MR DRIVER: No.

MR JUSTICE GOSS: Right.

MR DRIVER: This was his special training.

MR JUSTICE GOSS: This was part of his special training, but -- yes. And hence he was being a scribe and observer, that sort of thing, rather than an active clinician?

Witness statement of LISA WALKER (read)

MR DRIVER: Yes.

Members of the jury, I'm going to read some statements from some of the nursing staff who tended to the cares of both [Baby A] and [Baby B] who, as you know, were both in the same room for some of the same time. I'm now going to page 98 of your Lordship's bundle and to the statement of Lisa Walker.

The statement is dated 23 July 2018:

"I am currently employed at the Countess of Chester Hospital as a neonatal nursery assistant within the neonatal unit. I first started work at the Countess of Chester on ward 50 as a healthcare assistant, then in August 2008 I applied for the role of neonatal nursery assistant."

She sets out the shift patterns. Nights at 19.30 through to 8 in the morning, and a day shift, 7.30 in the morning to 8 pm at night. And she says during the period between 2015 and 2016 she believes she was working full-time hours. She says:

"The half-hour overlap between shifts allows time to hand over to the next shift coming on duty. It is during this time when you are allocated the babies for whom you will be responsible during your shift. It was the responsibility of that shift leader to allocate who you would be looking after, depending on each individual's skill base and grading along with the requirements of the unit.

"The system has been changed some time ago and it is now the responsibility of the shift leader from the previous shift who allocates what nurse or nursery assistant is looking after what baby or babies.

"As a nursery assistant we can sometimes have up to four babies depending on how busy the unit is. During the handover you're provided with a brief summary for each baby and their medical needs. As a nursery assistant I have quite a lot" --

MR JUSTICE GOSS: Sorry to be pedantic, but it's "medical history", it says.

MR DRIVER: Thank you:

"During the handover you are provided with a brief summary for each baby and their medical history.

"As a nursery assistant, I have quite a lot of responsibility. We maintain and establish feeding regimes. Some babies may be on a nasal prong oxygen, which I will be responsible for monitoring and will carry out work as directed by the trained staff."

She then applied her mind to [Baby A] and [Baby B]:

"I have had the opportunity to review the nursing notes of the twins, [Baby A] and [Baby B], to refresh my memory and assist with this interview.

"From the notes, I was aware of when they were born and the fact they both went straight to nursery 1, the intensive care unit of the neonatal unit."

She says:

"As a nursing assistant I am not qualified to work with the babies in nursery room 1. This would be left for the band 5 and 6 nurses. As a neonatal nursery nurse I predominantly work within nursery rooms 3 and 4 in the special care baby unit. As the babies progress and become stronger, their needs become less and they require less monitoring. This is when the babies will be moved into room 2, then on to rooms 3 and 4, where they will be discharged from hospital to go home. We commonly refer to rooms 3 and 4 as the growing and feeding rooms.

"On 8 June 2015 I can confirm that I was working the first one of three night shifts, starting on the 8th at 19.30 hours to 08.00 in the morning the next day. I then worked the following two night shifts on the 9th and 10 June.

"In relation to 8 June 2015 I was aware that baby [Baby A] suffered a collapse and sadly died. From the notes, the incident was around 20.26, I can confirm that I was working a night shift on that particular day but I had no involvement with the incident at 20.26 hours. I had no direct dealings whatsoever in the care of [Baby A] and [Baby B] during the three night shifts I carried out on 8, 9 and 10 June."

She lists all the people who were present, which we can show through other means.

She recalls being made aware that [Baby A] had suddenly collapsed on the night shift, but she states she was on duty in nursery rooms 3 and 4, caring for other babies at the time.

She does remember one member of staff involved in the incident asking someone to go and get the parents. She couldn't remember who went to get the parents but she says:

"I don't think it was me, but I cannot be 100% certain."

She confirms again that she had no involvement in the collapse of [Baby A]. She says:

"It is not unusual to be unaware of other incidents occurring on the unit when you are focusing on treating and caring for the babies that you are responsible for. I recall that the unit was particularly busy around this time.

"Some time during the shift I was made aware that [Baby A] had sadly died. I do not remember who or how I was informed but I do recall the sadness in the atmosphere that passed through the unit. It's always sad to be informed that one of the babies in the unit had died and I do recall around this period of time there appeared to be an increase.

"I have worked on the unit for the past 10 years and prior to this period of time I have only experienced a couple of baby deaths on the unit. At the time I remember coming into work to be informed that another baby had died. It was a very sad time on the unit and I remember thinking, what on earth is happening?

"The following night shift, on 9 June 2015, I came to work alongside Cheryl Cuthbertson-Taylor in nursery rooms 3 and 4. I don't remember the exact time. It was the handover and the day staff had left the unit. I was made aware that an assistance call for [Baby B], [Baby A]'s twin sister, had been put out. I don't remember what member of staff asked but I was asked to go and get the family.

"I think I went up to the parents' room and informed the midwife who was dealing with [Mother of Babies A & B], [Baby B]'s mum. Once the family arrived on the unit I left them with the nursing staff in the intensive care unit, nursery room 1. It is common practice that all the trained staff and nurses would remain on the unit assisting with the emergency and the nursery staff would be there to support in any way they can. It could be that we take over the care of all the other babies in nursery rooms 2, 3 and 4, managing their feeds, et cetera.

"I had no further dealings with the family on that evening. They remained in nursery room 1 and another member of staff would have supported them. I do remember the [Surname of Babies A & B] family as I cared for [Baby B] on several occasions when she was moved into nursery rooms 3 and 4 in preparation of going home. This would have been several weeks later when [Baby B] was stronger and she had moved out of the intensive care unit and into the special care baby rooms.

"I remember having a lot of interaction with [Mother of Babies A & B], [Baby B]'s mum, and the family some weeks later, talking about them and trying to support and reassure them. I remember a conversation with [Mother of Babies A & B] when she questioned the reason for [Baby A]'s death, wondering if her blood condition was to blame. She asked to speak with a consultant to try and understand what happened. I don't know if she had those conversations with anybody."

And Lisa Walker does not have any other relevant information with which she could assist.

Witness statement of LAURA EAGLES (read)

MR DRIVER: The next statement is made by Laura Eagles, dated 25 July 2018, stating that she at that point in time was employed at the Countess of Chester Hospital as a band 6 senior neonatal practitioner, having worked in the hospital since 2003:

"I have been asked regarding my knowledge of babies [Baby A] and [Baby B] and in particular the shifts of the 8th, 9th and 10 June 2015. I have had the opportunity to read through the clinical nursing notes to assist with this statement.

"I can confirm that I was working a long day shift on the unit during 8 June 2015 from 07.30 hours to 20.00 hours. I was off duty on 9 June and returned to a long day again on the 10th.

"I believe that I was in charge as shift leader on 8 June 2015. I have looked at the off-duty sheets for this period and the allocated team leader/shift leader would normally appear in blue. Unfortunately, the unit only has a photocopy of this paperwork now. However, my name has been circled for that day, which is another indication I was shift leader for that particular day.

"With regards to 8 June 2015 I have been made aware that baby [Baby A] suffered a collapse at 20.26 hours and sadly died. Then on 10 June, baby [Baby B] also suffered a collapse at 00.30 hours.

"I was not involved with either of the two mentioned incidents. I have no recollection of any dealings with [Baby A]'s resus. I had no direct involvement in his care during the day shift of 8 June.

"On 10 June 2015 I came into work for a long day shift. I was allocated to be the designated nurse for baby [Baby B]. I received a handover at 07.30 hours from [Nurse A], who had been on night duty with [Baby B]. I don't recall the handover. It is only from the nursing records I am able to say it was [Nurse A] who handed over to me. I would have been made aware that [Baby A] had passed away. I don't remember who informed me or exactly when.

"During the handover [Nurse A] would have discussed with me the sudden collapse [Baby B] had around 00.30 hours. A blood sample was taken and tested for clotting. I am aware that another blood sample was taken from [Baby B], which was sent for testing due to the blood disorder mum had.

"There were some concerns [Baby B] may have some form of clotting disorder. The blood samples were to try and establish if the blood condition had anything to do with his sudden collapse and the purple blotches that appeared. The results from the blood samples are received some weeks later and generally dealt with as an outpatient. The nursing staff do not know the results.

"When I took over from [Nurse A] at 08.00 hours on 10 June 2015, [Baby B] was ventilated. She was on normal TPN [total parenteral nutrition] and lipids. She was on morphine and she was on small amounts of feeds. She was stable throughout the day and the only incident of note was at 19.25 hours that evening when I documented that [Baby B] had a blocked tube.

"The alarms on the monitors had activated. I remember the incident because all the doctors at the time were in theatre. I can't be sure but I think they were in theatre for the delivery of twins.

"I informed Chris Booth, who was shift leader. He came to assist me with supporting [Baby B]'s breathing. I asked another member of staff to go into theatre to inform one of the doctors that [Baby B]'s tube was blocked. I don't know who that was. I can't remember.

"Chris and I removed the blocked tube, which is normal practice. We maintained [Baby B]'s airway and assisted her with her breathing, using Neopuff. Dr Brunton, one of the consultants, came out of theatre and on to the unit. He checked if we were okay. I remember him asking if she was breathing, which [Baby B]

was. Her sats readings were good and she was pink. He said, keep her like that until we come through. He then went on to suggest seeing if any other consultants were in the office who were not on call.

"[Baby B] wasn't re-intubated, she was breathing for herself and she was put on to CPAP. She was checked over and she continued to breathe for herself. I think I handed [Baby B] back over to [Nurse A], who was on night duty again.

"[Baby B] remained on the unit for some time until she was ready to be discharged to go home. I do not have any other relevant information in relation to [Baby A] or [Baby B] [she states]."

Witness statement of ELIZABETH MARSHALL (read)

MR DRIVER: Next, a statement from one Elizabeth Marshall, dated 8 April 2019, stating:

"I am a band 4 neonatal assistant within the neonatal unit of the Countess of Chester Hospital. I have been asked by Cheshire Police to provide details of my shift on 8 June 2015 and any involvement of care that I may have provided to [Baby A].

"On this shift I was working on a night shift. My shift will have started at 19.30 on the 8th and finished at 8 am on 9 June 2015. When I came on duty I would have been informed what nursery I was working in and what babies I was caring for. I would have been given a briefing about that baby from a member of the day shift. I cannot recall any personal memories of this shift."

She reviews the rotas, names who was on duty with her. She says:

"Upon reviewing the files I have noted there were 15 babies in total on the unit to be cared for on this shift. As this was a busy shift I may have been allocated to care for more than one baby. I was allocated to work in either nursery 2, 3 or 4. The notes say I looked after a baby whose initials are TB. I have been unable to access the notes to review any of the other babies I may have looked after. I have no memory to assist.

"It is very rare that I would ever work in nursery 1 where [Baby A] was. I did not have any involvement in [Baby A]'s care. I was working for the whole night in other nurseries. The unit is very small and on occasions you are aware of things going on in other nurseries."

But she cannot recall any details of that shift other than the fact that she became aware that [Baby A] passed away.

Witness statement of MINNA LAPPALAINEN (read)

MR DRIVER: Nurse Minna Lappalainen made a statement dated 28 March 2018, stating:

"I have been asked to comment on baby [Baby A] and in particular his care on 8 June 2015."

She could not say with certainty whether she was working on 8 June 2015, but confirms that she was working a day shift on 9 June 2015, when she was allocated the task of completing the bereavement paperwork in relation to [Baby A] who'd passed away during the night. By the time she started her shift, the other staff were no longer on duty and the parents had left the unit.

She was given a handover by Mel Taylor and Lucy Letby, who had been on nights, and completing the bereavement procedure during the night. She can't remember any specifics:

"Mel and Lucy did not remain on duty with me to complete the bereavement pack. To be involved in such an incident involving the death of a patient is emotionally and physically draining. I cannot recall the mental or physical state of Mel or Lucy.

"The bereavement procedure and paperwork is a large folder, which includes lots of forms to complete with people and agencies that need to be contacted and informed of the death, which includes the coroner. It is designed so nothing is missed or overlooked."

She cannot recall exactly what she completed in the bereavement pack, but she would have signed next to all her actions.

Witness statement of JOANNE WILLIAMS (read)

MR DRIVER: Joanne Williams, another nurse within the unit, made a statement on 3 October 2018 stating that she is a band, or was at that point, band 6 neonatal practitioner within the unit. She stated that she'd had the opportunity to read through the clinical and nursing notes and confirmed that she wasn't working on the 7th or 8 June 2015.

She was working a day shift on 9 June and on the 10th and 11 June. She explains the process of the huddle, which we've heard more than once now, and unless otherwise ask to do so, I won't repeat. Then she sets out the staffing levels. She says:

"One member of staff to each baby in the ICU. One member of staff to two babies in the high dependency unit. One member of staff to four babies in the special care unit. These are

guidelines set out by BAPM, the British Association of Perinatal Medicine.

"Once allocated a baby or babies, the staff member will go to the cot side and have a verbal handover with the designated nurse currently looking after that baby. At the end of each cot are the charts for each baby. The charts detail everything that happens with that baby, including fluids, feeds, nappy changes, observations, blood gas charts, apnoea/bradycardia/desaturations, and pain charts. Anyone who has anything to do with that individual baby should endorse the charts.

"The nursing notes are computerised and can be written up at the time or retrospectively at the end of the shift and normally completed by the designated nurse or anyone who's had any direct involvement with that baby or child.

"I was a designated nurse for [Baby B] during the day shift of 9 June 2015. I can't recall who I took over from. How far, I do recall handing over to [Nurse A], who was on night duty. My shift that day began at 7.30 am and finished at 8 pm and I believe [Baby B] was the only baby I was designated to look after. As [Baby B] was in nursery room 1, the ICU/intensive care unit, it is unlikely I would have had any other babies to look after but I cannot say for sure.

"The shift leader, on allocating what baby was to be looked after by what member of staff, would have been very mindful and sensitive to the sad loss of [Baby A], [Baby B]'s sibling, the previous evening. I actually cannot remember who was the shift leader that day.

"[Baby B] remained in the ICU/nursery room 1. Her cot was situated to the right of the door. I don't recall how many babies were on the unit at that time. The shift doesn't stand out in my memory as one that was unusually busy, although we were always busy at that time. I remember that we had the room screens or dividers up to give the family some privacy following the loss of their son the night before.

"The family remained at [Baby B]'s cot side the entire day. The only time the parents left the unit was for mum, [Mother of Babies A & B], to get some rest or something to eat, and she would only leave if the grandparents were present. This was completely understandable with the sudden and unexpected death of [Baby A] the previous evening on 9 June 2015.

"My main aim throughout the shift was to keep things calm and quiet for the family. I assisted mum twice during the day with skin-to-skin contact and taking lots of photos of [Baby B] while

she was out of the incubator. [Baby B] got a little bit tired, so I placed her back on CPAP to assist.

"All of the entries made on the medical or nursing notes are made retrospectively and generally completed towards the end of the shift. The computer system timestamps each entry.

"Throughout the entire shift nothing significant happened. [Baby B] was stable. She was progressing well. She had two periods out of the incubator and off CPAP with skin-to-skin contact with mum. During the time out of the incubator, [Baby B] was breathing for herself. Due to the sad events of the previous evening, [Baby A]'s death, I tried to keep the atmosphere relaxed and calm for the family. Most of the day we had the screen up for the family, providing them with some privacy. I cannot recall if there was another family in the nursery room, nursery room 1, during this shift. Nothing stands out.

"Although I had no direct dealing with [Baby A], his death came as an unexpected shock to the unit. Throughout the shift [Baby B] was progressing well. There was a slight increase in her breathing at one point and she was placed back on CPAP. I put this down to her getting a little tired after being out of the incubator.

"Taking into consideration her size, gestation and antenatal prognosis, she was doing relatively well. She was small and you can never become complacent with neonatal babies. However, there were no obvious signs or events during my shift with [Baby B] on 9 June 2015 that caused me any concern when I went off duty that night.

"I do remember noticing the following morning that [Baby B] had been re-ventilated during the night shift, which came as a bit of a shock as she was doing so well. Nothing really surprises me with neonatal babies anymore as they can deteriorate quickly.

"[Baby B] remained on the unit and progressed well, eventually going home some weeks later."

Witness statement of [Mother of non-indictment baby] (read)

MR DRIVER: [Mother of non-indictment baby] made a statement on 22 December 2021. She was the mother of a baby in the unit at the time. She states that she was in the unit on 8 June 2015. She intended to visit the unit but was prevented from doing so because there was an emergency on the unit:

"At around [this is page 117, my Lord] 19.00 hours a nurse called [Nurse A] came up to my room to let me know that [her] baby was okay and reassured her that [her] baby was doing fine.

[Her] baby was sharing a room with twins [Baby B] and [Baby A], who were born the day before on 7 June."

So her child is the third baby that Dr Harkness made reference to.

The following day on Tuesday 9 June, this witness and her husband went to the unit. She had learned that, sadly, one of the twins had died. She entered nursery 1, she could see screens had been put up that actually divided the room into two halves. Her baby's incubator was positioned to the left side of that room, which is the side nearest to the reception, and the twins would have been to the right side:

"I could not see the right side of the room as they were trying to keep the other half private."

She would describe the screen as a large type of curtain made of coloured fabric on wheels. The curtain was about 2 feet away from the ceiling, so even when standing, we couldn't see over the top. The curtain hung about 10 inches from the floor, the fabric of the curtain was thick, couldn't see through it or make out shadows or anything on the other side. The curtain was pulled across in such a way that there were no gaps on either side. There were two doors that lead into the ICU. You could walk through the door to the left side where [her] baby's incubator was positioned. The second door was towards the right side of the position and closest to where the twins had been:

"The screens were up for a couple of days. I remember the twins' parents, [Mother of Babies A & B] and [Father of Babies A & B], having other relatives visit them. Initially we'd see them outside the nursery but then they would go behind the screens. She and her husband went in the room with the baby on the opposite side."

She says the screens were definitely up for 2 or 3 days but she's unsure whether they were still present on 11 June when her baby was moved to nursery 2.

MR JUSTICE GOSS: May I just say something to members of the media in relation to that witness who's been named in court. There is no power under the law to prohibit the publication of the name of that witness, which would lead to the identification or may lead to the identification of the baby in question, but I would just ask that if any of that part of the evidence is reported that sensitivity is taken in relation to that and simply saying the mother perhaps of the third baby in that nursery, nursery room 1, where the twins were could be used rather than leading to identification.

As I say, I can't do anything by law, but I do ask for some sensitivity in relation to that on behalf of people involved. It has no relevance. That evidence has no relevance to the babies who are the subject of the counts on the indictment.

Witness statement of KATHRYN PERCIVAL-WARD (read)

MR DRIVER: Thank you, my Lord.

Members of the jury, a few more short statements to read to you. One from Kathryn Percival-Ward, dated 22 August 2018. She is a member of staff. She's been asked regarding her knowledge of babies [Baby A] and [Baby B] and in particular their care on the 8th, 9th and 10 June 2015.

She confirms that she worked three consecutive night shifts overnight on each of those occasions and that on 8 June she had been informed that baby [Baby A] suffered a collapse at 20.26 hours and sadly died, although she was not on duty, she thinks, on that occasion.

She was present on 10 June 2015 when [Baby B] also suffered a collapse at 00.30 hours but she was not involved in either of the incidents and had no dealings in any resuscitation of [Baby A] or any care of [Baby A].

She does not recall having direct involvement with [Baby B]. She believes that [Nurse A] was [Baby B]'s designated nurse.

Witness statement of AILSA SIMPSON (read)

MR DRIVER: I am looking at the statement of Ailsa Simpson, and unless I'm specifically asked to read it, I shan't because I think she does little more than confirm that she was on duty but had no direct involvement with either of the [Surname of Babies A & B] twins, all of which is really covered by the neonatal review information --

MR JUSTICE GOSS: Exactly. It'll be, I anticipate, completely neutral, unchallenged evidence. Their names -- they were there, but plainly can give no relevant evidence or do give no relevant evidence.

MR DRIVER: My Lord, the next witnesses to be called to give evidence from the witness box to the jury cannot be here until tomorrow morning.

MR JUSTICE GOSS: No. Well, it's been a fairly long day and that's enough for today.

MR DRIVER: I'm grateful.

MR JUSTICE GOSS: There is one matter that I want to raise about timetabling, but I needn't concern the jury about that.

Tomorrow, please can you be ready to resume as usual at 10.30? It will be -- it's anticipated it'll be a full day.

MR DRIVER: Yes.

MR JUSTICE GOSS: No reason why it shouldn't be a full day, so it will be a full day tomorrow. Remember, no communications by any means, no research. 10.30 tomorrow. Thank you.

(In the absence of the jury)

Housekeeping

MR JUSTICE GOSS: The coughing is starting generally. Quite a lot of coughs going round now. It's that season starting.

It's something perhaps I should have mentioned earlier. Next Friday, a week tomorrow, it will not be possible for the court to sit beyond quarter to 3 in the afternoon. I'm mentioning this because I don't know what witnesses were provisionally scheduled for that day and I hope it won't cause any difficulty. But we can if necessary start at 10 o'clock and sit a shorter lunch break if we need the hours of that day to accommodate witnesses. I won't say anything yet to the jury so I'll leave it, they'll think they're having a full normal day at the moment.

MR JOHNSON: I don't think that'll cause an issue in the sense that there are 1 or 2 days here and there, and perhaps we can liaise with your clerk when these arise, where experts -- the only time they can make it is a specific day. But next Friday is not one of those occasions.

MR JUSTICE GOSS: All right, if you could. There is one other unknown event yet, but there may be a day when I have to attend a family funeral and I don't know when that is yet -- I know that the relative has passed away, but I don't know when the funeral is. As and when we have any information, that can be dealt with informally at this stage.

MR JOHNSON: Thank you.

MR JUSTICE GOSS: Right. Anything else?

MR JOHNSON: No, thank you, my Lord.

MR MYERS: No, thank you.

MR JUSTICE GOSS: Thank you very much indeed.

(3.58 pm)

(The court adjourned until 10.30 am on Friday, 21 October 2022)