

22 March 2023

Baby P

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Wednesday, 22 March 2023
(10.30 am)

(Delay in proceedings)

(10.37 am)

(In the presence of the jury)

Housekeeping

MR JUSTICE GOSS: I'm sorry we're a little late starting this morning.

On Friday of this week, as far as you are concerned, you will not be required to be here. All right? I'm telling you that now so that if you want, later on today when you get a break, to make plans for Friday, you won't be required for Friday. There will be another day, almost certainly a week on Monday, when you

won't be required, but I will confirm future days. But just for this week you won't be required.

You will be aware that we're getting close to the end of the prosecution evidence now but there are still pathologists' evidence to be dealt with and some other issues being sorted out and work needs to be done in relation to those which couldn't be done earlier.

It's being done and it will actually save time, so to speak.

So your time will be put to good use and when you are to be free, you will be free. All right? I'll give you, when I can, notice of non-sitting days as far as you're concerned. Thank you very much indeed.

Yes, Mr Driver.

MR DRIVER: May I recall Dr John Gibbs, please.

DR JOHN GIBBS (recalled)

Examination-in-chief by MR DRIVER

MR DRIVER: Dr Gibbs, as always, could you begin by stating your full name for the recording, please?

GIBBS: Dr John Gibbs.

DRIVER: For your information and to remind us all of the evidential context of the evidence that you have been invited to give this morning, last week, when we were focusing upon the evidence in relation to the baby [Baby O] or [Baby O], the jury heard part of a witness statement that you made on 10 September 2018.

Part of that statement was read to the jury, which in terms informed the jury that you were the on-call consultant for the evening night shift of 23 June 2016.

GIBBS: That's correct.

DRIVER: And that as part of your duties on that evening, you attended at the neonatal unit to discover that [Baby O] was extremely ill and receiving cardiorespiratory resuscitation directed by your colleagues, Drs [Dr B] and Brearey?

GIBBS: Yes, that was in progress when I arrived on the unit.

DRIVER: And that you had some, in your words, peripheral involvement in the resuscitation that was already underway and was being led by Drs [Dr B] and Brearey?

GIBBS: That's correct, yes.

DRIVER: And in the circumstances, you deemed that your skills and time were best served directed towards [Baby O]'s triplet siblings, [Baby P] and [Baby R]?

GIBBS: Yes, because many of my colleagues were already helping [Baby O]. But I remember feeling uncomfortable when I arrived on the unit and saw [Baby O] and I thought, "Oh no, not another one", because I had become increasingly concerned, and I know that my consultant colleagues shared this concern, but I'd been increasingly concerned at the accumulating number of unusual, unexpected, inexplicable deaths and collapses that had been happening on the neonatal unit, and the fact that Staff Nurse Letby had been involved in all of them.

DRIVER: What did you do with your time immediately after moving away from [Baby O]'s cot side?

GIBBS: Sadly, it was apparent that the resuscitation was not proving successful in [Baby O], and at the time I assessed [Baby P], [Baby O] had just died. So then I turned my attention to [Baby P] and his brother, [Baby R].

DRIVER: I'm grateful. If we could go, with Mr Murphy's assistance, to our tile 134, which is an event timed at 18.00 hours, on 23 June. If we could go to the underlying material, please, Mr Murphy. We will see a note made by your junior colleague, Dr Cooke, which records a review undertaken by you in her presence; is that correct?

GIBBS: Yes, it is.

DRIVER: What was the purpose of that review?

GIBBS: To assess [Baby P] -- given that his brother had just died, to assess his state of health.

DRIVER: Whilst we are, of course, focusing upon [Baby P] for obvious reasons here this morning, did you, at or about the same time, conduct an identical review of his surviving triplet brother, [Baby R]?

GIBBS: Yes, I did. It was [Baby P] first and then [Baby R] afterwards.

DRIVER: What did you discover upon examination of [Baby P]?

GIBBS: That he appeared very well.

DRIVER: Could you expand upon that, please?

GIBBS: Right. As Dr Cooke has written down there, at the top she is saying his temperature is fine, 36.6. SVIA is spontaneously ventilating in air, he was breathing in air. He was tolerating his nasogastric milk feeds he was receiving, with a normal respiratory rate and heart rate recorded there.

The OE is examination -- the on examination findings. [Baby P] was active when he was examined, the CR is capillary refill, less than 2 seconds, that is indication of normal circulation. He had a normal respiratory pattern, his breath sounds were clear and his abdomen -- that means his chest was clear.

Abdomen full and mildly distended, but there was no tenderness on palpating his abdomen, there were no masses to feel and his bowel sounds were active.

Now, one finding was that there was mild erythema, reddening or redness, at the base of his umbilicus. At this stage little [Baby P] was just 3 days old, he still had an umbilical stump from where his umbilical cord had been cut, and there was a plastic peg, a plastic clip around the umbilical stump, and it was likely he had a nappy on that was undone to examine his tummy. It's likely that that clip had been rubbing against his tummy and that's why there was a bit of redness there. So Dr Cooke, to be sure there was nothing wrong with the umbilicus, had said there was no swelling nor exudate -- that's on the umbilicus. The femoral pulses were present and heart sounds were normal.

So that was a normal examination apart from the mild reddening below the umbilicus.

DRIVER: And to give context tot that normal examination, [Baby P] was by now in his third day of life?

GIBBS: Yes.

DRIVER: And the clinical backdrop in the days from birth to 18.00 hours on 23 June, were you -- did you satisfy yourself that all appeared well between birth and this juncture?

GIBBS: Yes, remarkably well for a triplet. Very well grown for a triplet. He'd needed a little help with his breathing with CPAP for the first 24 hours, for the next 12 hours the Optiflow, and then for the 12 hours before I saw him on this evening he had needed no help with his breathing at all and he was tolerating

his milk feeds so he was making very good progress, very good weight, excellent for a triplet baby.

DRIVER: I'm grateful. So having identified a single issue of potential concern, that being the umbilicus -- in or around the umbilicus, I should say -- what did you plan in relation to that potential issue?

GIBBS: Well, the plan was modified for [Baby P] to be more cautious than usual given the fact his triplet sibling had just died. So for another baby I would not necessarily have undertaken all these investigations, nor started any additional treatment, but given that [Baby O] had just died, we decided for [Baby P] -- I decided for [Baby P] to do a number of blood tests to look for any possible infections, that's the full blood count, the CRP, the protein that goes high with an infection, to take blood cultures, and a bilirubin level.

Then the second part of the plan was, having taken those bloods, to start antibiotics. Now, [Baby P] had been on antibiotics for the first 36 hours of life because he had some breathing difficulties when he was first born. That rapidly settled and those antibiotics had been stopped. But I decided now to start, even without getting the results of the blood cultures and so on, which take a couple of days to show whether there's infection, to actually start antibiotics, a broad range antibiotic, a wide-ranging antibiotic called cefotaxime.

The flucloxacillin is particularly for skin infections, for example if you've got an infection in the umbilical stump spreading on to the skin, although I thought it was probably just rubbing of the umbilical clamp that had caused the redness.

But if one sibling has suddenly died, a possible cause of sudden death is overwhelming infection and so we're just being extra cautious with [Baby P], and the same later for his brother [Baby R], to cover them for possible infections even though he looked entirely well.

So we started antibiotics on him and decided to do an abdominal X-ray.

DRIVER: Thank you. Taking those in turn, firstly beginning with the taking of the blood and consideration of that sample, could we go, please, Mr Murphy, to tile 145, timed at 18.35. It is in our presentation as the obtaining of the sample, but does this tell us a little more about that sample?

GIBBS: This is the blood culture, sample. So blood that was taken to look for any infection in the blood at that time. And

that just tells us -- this isn't the result, it's just telling us it was taken.

DRIVER: If we scroll down, please, Mr Murphy.

GIBBS: Yes. This is a result from that blood culture. It says at the very top there, underneath [Baby P]'s name and the fact he's a male boy, "Specimen collected on 23/6", at just after 18.30 in the evening. And I'm not quite sure what the recording on the 24th is, but that was in the -- that's the laboratory bit of detail there.

Then the result was authorised 6 days later, on the 29th, by the microbiologists and it's basically showing there was no growth of any bacteria after 5 days. So in retrospect, this shows that on this blood test there was no evidence of infection in [Baby P] from the evening of the 23rd June.

DRIVER: I'm grateful. There's more than one set of blood test results on our presentation, so let's deal with them now at tile 181, please, Mr Murphy.

So this would seem to be -- it says Monday, 22 May 2017. That must have been an administrative process which is results of an analysis of a sample collected on 23 June 2016, received at the laboratory at 20.33. Could you tell us something about those results please?

GIBBS: Right. Well, in relation to infection, we're looking to see whether the white blood count was abnormally high, suggesting a possible infection. And the first result there, white blood count, 6.9, and you can see if you look over to the right-hand column, that's well within the normal range of between 4 and 11. So a normal white cell count.

The other blood counts there, the platelet count was normal, the haemoglobin was normal. Those are not so important in relation to infection. In this blood test it's the white cell count that's most important.

If we go down a little to towards the bottom four up from the bottom the "neuts" is the neutrophil count and the "lymps" are the lymphocyte count. Those are the two main kinds of white blood cells that are often raised in infection and both those results, 3.6 for neutrophils, 2.1 for lymphocytes -- sorry, the 3.6 for neutrophils is normal, the 2.1 for lymphocytes is a little low, but we're looking for abnormally high while cell counts suggestive of infection and that's not seen in this result for [Baby P].

DRIVER: Putting those various component parts together, what was the inference that would be drawn from these results?

GIBBS: These blood tests do not suggest there was any infection in [Baby P] at the time they were taken, which is consistent with the clinical findings on examining him. There's a CRP level as well. I don't know if we're going to be looking at that. The CRP, which is a protein that goes high with infection, was also normal, again suggesting there was no infection with [Baby P].

DRIVER: Mr Murphy, could we go to the next tile, please, 182.

GIBBS: There it is at the bottom, the CRP result less than 1.

A high level would be over 10 and usually well over 10 in an infection, but the CRP is not elevated in [Baby P], so a further indication there's no infection at that time it was taken.

DRIVER: Just to provide context for this, we can see this was another sample collected on this date, 23 June, received at 20.33, and was ordered by Dr Cooke, who we know had been accompanying you at the 18.00 hours examination when this plan was formulated.

GIBBS: Yes.

DRIVER: So, please, putting the component parts of this septic screen together, what's the fundamental inference to be drawn from this data?

GIBBS: That there's no indication of infection, consistent with the clinical examination of [Baby P], so he was a well baby.

DRIVER: Another aspect of your plan was the ordering of an abdominal X-ray.

GIBBS: Yes.

DRIVER: If we go, please, to tile 173. This is an X-ray, the radiograph for which is timed at 20.09 hours on 23 June.

If we could scroll down to look at Dr Wright's analysis.

Thank you, Mr Murphy. What did the radiograph show?

GIBBS: It just showed that there was a fair amount of gas/air in [Baby P]'s bowel all the way down his bowel. I mentioned that -- it had been mentioned that during examination, his abdomen was mildly distended, that would be consistent with some air being in his bowel, seen on the X-ray. There were no other features to suggest any other more worrying bowel disorder like

the necrotising enterocolitis that was been discussed with other babies previously. He didn't show any signs of that on his X-ray, he didn't show any signs of that on being examined either.

Some babies do swallow a fair amount of air, but we know in [Baby P] for the first 24 hours of life he'd had air under pressure blown in his nose with a CPAP device and for the next 12 hours he'd had a similar support from an Optiflow device, but that had stopped 12 hours before I saw him. It is likely, and I would have assumed, that the air in his bowel, being a little more than you would usually expect to see in a baby, was due to the treatment he'd had to support his breathing in the first 2 days of life. CPAP belly I think it's been called in the court before.

DRIVER: It has. Dr Gibbs, you told us that this formed part of your plan because of the reddening around the umbilicus and we can see, as an indication, the reason why the X-ray was ordered:

"Mild abdo distension and peri-umbilical flare."

Was there anything within the radiograph that were signs consistent with infection or inflammation?

GIBBS: No.

DRIVER: Did you have any further direct involvement in the care or treatment of [Baby P]?

GIBBS: No.

DRIVER: Did you discover that his condition suddenly deteriorated on 24 June, leading to his death?

GIBBS: I was extremely concerned to learn that later on, yes.

I would not have expected that at all.

MR DRIVER: Could you remain there and answer any questions asked of you, please?

Cross-examination by MR MYERS

MR MYERS: Dr Gibbs, you made a statement to the police, didn't you, at the start of your part in this investigation, on 20 November 2017?

GIBBS: Yes.

MYERS: The copy I have goes to 41 pages and 123 paragraphs; does that sound about right?

GIBBS: Was this on [Baby P]?

MYERS: No, this is a general statement.

GIBBS: Oh, this wasn't [Baby P]'s statement?

MYERS: No, not specifically [Baby P].

GIBBS: I have made so many statements to the police. I did make one that was quite long that included about seven babies.

MYERS: That's right and it's general matters. You concluded that statement -- I'll tell you what you concluded the statement with. This is the statement made on 20 November 2017. Paragraph 123, page 130 of our statements:

"As of 20 November 2017 I have not noticed any medical or nursing member of staff involved in caring for infants on the neonatal unit at the Countess of Chester Hospital behaving inappropriately or providing improper care with respect to the infants discussed. Had I done so, I would have reported the behaviour to the appropriate nursing or medical line manager."

That's how you conclude that, Dr Gibbs.

GIBBS: Yes.

MYERS: Yes. And also, had you got concerns about any member of staff and their adverse effect on the health of babies on the unit, you would have reported that to appropriate nursing or medical line managers, wouldn't you?

GIBBS: I think I said if I'd seen anyone doing something inappropriate, yes.

MYERS: I'm asking you if you had concerns about someone behaving inappropriately, that is something you would report to the appropriate nursing or medical line manager, isn't it?

GIBBS: Yes.

MYERS: You began your evidence this morning by saying that you had become increasingly concerned about Nurse Letby's involvement in all of these events.

GIBBS: Yes.

MYERS: In fact, you had no concerns with regard to Nurse Letby until after the time of [Babies O & P]; that's correct, isn't it?

GIBBS: The death of the two of the [Surname of Babies O, P & R] triplets was the tipping point for realising something very abnormal and wrong was happening on our neonatal unit, yes.

MYERS: Before that point, had either Dr Brearey or Dr Jayaram shared any concerns with you about Nurse Letby?

GIBBS: We discuss all the babies on the unit as outcomes. So every death, every collapse of a baby had been discussed, and Nurse Letby's involvement in some of the unusual or unexpected collapses had been noted, yes.

MYERS: By involvement, in fact, that extends to presence on the unit at the time, doesn't it, as it happens?

GIBBS: Usually presence on the unit but most often caring for the baby concerned.

MYERS: We have the babies we're dealing with here and we will see the evidence on that, Dr Gibbs. What I'm interested in knowing is your state of mind at the time you were dealing with [Babies O & P] given your comment about being increasingly concerned. Is this the situation, that by the time we get to [Babies O & P], Drs Jayaram and Brearey had identified the presence of Nurse Letby on various occasions that you had considered in your debriefs?

GIBBS: We all had, yes.

MYERS: You all had?

GIBBS: Yes.

MYERS: Right.

GIBBS: We'd all been involved in different babies, different consultants with different babies, as would have been -- as should be apparent now to the court. And we had noticed different members of staff, but there was a common factor and it had become clear to all of us involved in the babies that are being discussed in court.

MYERS: You had actually reported no concern to the appropriate nursing or medical line manager at the time of [Babies O & P], had you?

GIBBS: I said that I'd report if I saw someone doing anything that was abnormal or potentially harmful. I hadn't seen any member of staff do anything.

MYERS: Yes, and then I asked you; if you had concerns about any member of staff, would you report that to an appropriate nursing or medical line manager, and you said you would.

You just said that.

GIBBS: Yes. But I knew it had been reported to the nursing manager on the unit, it had been reported to senior nursing managers in the hospital. Dr Brearey was our neonatal lead and Dr Brearey went to all the meetings reviewing the babies' deaths, so I knew it had been reported.

MYERS: If you had genuine suspicion, Dr Gibbs, you, you would have acted, wouldn't you? You would have done?

GIBBS: We consultants all work together and I knew our lead for the neonatal unit had reported this.

MYERS: You see yourselves as a team?

GIBBS: Yes.

MYERS: Do you still see yourselves as a team?

GIBBS: Yes.

MYERS: Working together with common interests?

GIBBS: Yes, we do -- well, in every unit the doctors working on the unit work together as a team with the doctors and nurses yes.

MYERS: We have seen how you had things to say that you wanted to say about Nurse Letby and this case in the course of these proceedings, Dr Gibbs, so I'm going to put to you again: if you had a concern, a genuine concern, you would have wasted no time in saying plenty about it at the time it arose to the managers?

GIBBS: Well, maybe I should qualify what I said at the end of that 41-page statement, that I would have reported it: I would have ensured it had been reported. I knew it had been reported.

MYERS: The reality is, as we stand here now and as you talk about these events, you are now heavily influenced by a bias against Nurse Letby that applies to all of you?

GIBBS: I was most heavily influenced by what was happening to the babies on the unit. It wasn't scrutinising Nurse Letby's involvement, it was noticing -- and I have discussed this when I have given evidence before -- the unusual nature, the unexpected

nature or the inexplicable nature of the deaths and collapses that had been discussed. That was what was noticed first.

Then it was realised what was the common factor in all of these and there was only one common factor.

MYERS: And you raised no concern whatsoever, did you?

GIBBS: We had discussed this concern amongst ourselves and, yes, I had raised this concern with my fellow consultant paediatricians, and I knew that Dr Brearey had raised it with managers in the hospital.

MYERS: And if you had genuine concerns and felt nothing was happening, you were perfectly capable of pursuing those concerns yourself, weren't you?

GIBBS: Yes, but --

MYERS: You are capable of that, aren't you?

GIBBS: Yes, but we work as a team.

MYERS: Have you seen much of your team members in the course of this trial?

GIBBS: I have seen some team members. We were waiting in the witness room. I haven't seen all of them.

MYERS: Who have you seen?

GIBBS: What, all the witnesses that have been waiting in the witness room over the 6 months I've been coming? This is the ninth, tenth patient I've given evidence on.

MYERS: Consultants I'm asking about, Dr Gibbs, consultants.

GIBBS: [Dr B] was here yesterday when I was waiting to give evidence. I saw [Dr C] some months ago. Dr Brearey I saw a few weeks ago and he's in the witness waiting room today. I've seen -- oh, eight, nine, ten of the nursing staff. And I saw Dr Jayaram a few months ago.

MYERS: And have you been in touch with Dr Brearey or Dr Jayaram or [Dr B] about what's happened in this trial whilst it's been ongoing but outside court?

GIBBS: No, we've been told not to talk about it. No, we haven't talked about the evidence that we are giving at all. It has been extremely difficult because we work as a team and ever since these concerns first arose 6 to 7 years ago, we've been

constrained in discussing it openly with the nurses, and even amongst us doctors, particularly after the police got involved. So it has been difficult but, no, I've not discussed the evidence I've given nor the evidence my colleagues have given whilst this trial has been running.

MYERS: And have you followed the course of the trial on the newspaper reports there have been?

GIBBS: I can't help seeing some of the newspaper reports. The local paper, the Chester Chronicle, that I get each week and I have always read for the 28 years I've been in Chester runs front page reports on it.

MYERS: Mm. And have you followed any kind of social media or do you not follow social media at all?

GIBBS: I don't follow social media, no.

MYERS: If you -- have you at any point in the course of this investigation discussed -- I'm not going to ask what they are -- your views on what has happened with your consultant colleagues?

GIBBS: No.

MYERS: Seriously?

GIBBS: No. What, during the trial?

MYERS: No, during the investigation. Let me be clear.

GIBBS: Oh, the investigation? Before the trial began?

MYERS: Before the trial.

GIBBS: Yes, we discuss every baby who dies on the unit or has an adverse event, like a collapse. That was discussed 6 or 7 years ago for every baby and we discussed it then in the 11 months before the police got involved after we raised concerns following [Baby P] and [Baby O]'s deaths.

In the 11 months when senior managers were extremely resistant to involving the police, we had to discuss what had happened because we had to keep insisting that the police ought to be involved.

MYERS: But in fact, at no point during the time these events were taking place did any of you contact the police, did you?

GIBBS: Well, that's difficult. As I've said, Nurse Letby seemed to be involved in all the cases that concerned me. I have only been involved in some of them. My other consultants were involved in other babies. None of us, regrettably, realised that two babies had been poisoned with insulin, so we did not have the full picture. So it's uncertain at what stage we should have gone to the police.

But you're right, if we think someone is harming babies on the unit, it is our duty to take action to ensure the safety of the babies and that was done.

MYERS: The disagreement, Dr Gibbs, may be less than you think.

I'm not suggesting there is not some degree of suspicion at the relevant time.

GIBBS: Right.

MYERS: What I'm raising is simply that nothing was done at the time because that is all that it was at that point: there was a suspicion, there was a finger-pointing that was going on, just based on her presence on the unit at the time of events taking place. That's as far as it went.

GIBBS: At the time of events that I had never seen in my career before, that were unusual and unexpected, as I keep saying, it was those events that worried us most.

That's what raised the concern. Then in medicine, it's not an exact science, you cannot always explain everything, which is highly unsatisfactory. So yes, just occasionally a patient dies and, despite extensive investigations and even a post-mortem, you cannot be sure what's happened. But this was happening again and again on our unit over that year and that cannot be just coincidence or just bad luck, there must be a cause.

And that's when we began to realise who was involved with these babies, looking at each nurse, each doctor, and then there was one common cause that was identified, yes.

MR MYERS: Well, I'm not going to repeat the territory that I've covered already. Thank you, Dr Gibbs.

Re-examination by MR DRIVER

MR DRIVER: Simply on the subject of reporting, was there at the time within the Countess of Chester Hospital an established protocol for the reporting of issues of fundamental concern?

GIBBS: Well, there was a system called clinical incident reporting, but that's when you've seen something wrong or some mishap has happened. But as I've said, I did not see any member of staff ever do anything wrong to a baby that should have been reported, otherwise that would have been reported. But I had reported a number of clinical incidents, you know, over that year.

I can't remember which ones they were and I'd have to re-look at records I don't have ready access to now I'm retired.

DRIVER: The reporting system that you have just referred to, which is typically used for the reporting of mishaps, to use your phrase, is that sometimes called the Datix system?

GIBBS: Yes. That's clinical reporting or the Datix system.

DRIVER: Do you deem that an appropriate medium for the reporting of fundamental concerns, the likes of which you've shared with the jury this morning?

GIBBS: No, because that is a system we report an incident when it's happened at the time. The concern that I have described this morning, that was building up by the time [Babies O & P] were on our neonatal unit, had built up over a series of time. It wasn't one particular incident, it was unusual and unexpected incidents keep on happening and clinical incident reporting wouldn't have picked that up, it's a trend over time.

DRIVER: As to the communication of the consultant team's concern, joint concern, to the management, is there a chain of command, as it were? Is there an appropriate or designated consultant whose responsibility it was to communicate on behalf of the team?

GIBBS: Yes. Any of us consultants, and indeed any nurse, any member of staff, can report concerns, but there is a standard way that it's supposed to be done.

Dr Brearey was our lead clinician for the neonatal unit -- I'd been the lead clinician for the neonatal unit some years earlier -- and, as part of his responsibilities, he regularly reviewed baby deaths and baby adverse outcomes with members of the risk management team in the hospital and with senior nurses from the ward. It was during those reviews and a copy -- a summary of those reviews were circulated to all of us consultants, that I knew the presence of Staff Nurse Letby had been raised several times by Dr Brearey.

DRIVER: Turning briefly to the Datix system, if and when a clinician or a nurse reports an incident through that system, to whom does it go? Who would receive the notification?

GIBBS: It goes to the risk management team in the hospital, whose job is to look at risks within the hospital, to assess the severity and the impact of any adverse or mishap that -- adverse incident or mishap that's been reported. It comes back to each department for them to review it and that's where Dr Brearey, as lead clinician for neonatology, sat down with senior nurses to review it and then a summary of that comes round to us, to all of the consultants in the unit. From time to time senior people in the hospital, and I believe the person at the time that had overall responsibility for risk management was the director of nursing, but also for medical involvement it would be the medical director as well.

And I know -- I knew at that time that concerns had been raised by Dr Brearey with the most senior managers in the hospital relating to those Datix reviews, looking at the deaths of babies on the unit.

MR DRIVER: Does your Lordship have any questions for Dr Gibbs?

MR JUSTICE GOSS: No, I don't, thank you. There's one matter arising out of something that you said that I think will be clarified by subsequent evidence, but I won't ask you to give the answer. I think we'll find it from another source.

Is Dr Gibbs --

MR DRIVER: It's very unlikely that Dr Gibbs will --

GIBBS: Can I add one thing about safety concerns and what we did about it?

MR DRIVER: Please.

GIBBS: After the deaths of [Baby P] and [Baby O], and very regrettably too late, tragically late for them, because the concern, as I said, had reached a tipping point, safety measures were introduced and one of those key safety measures that we consultants insisted on was that Staff Nurse Letby was removed from the neonatal unit. And that wasn't a simple, straightforward decision because a month later senior managers met with us and wanted Staff Nurse Letby to come back to the unit and we said that should only happen if we had closed circuit television in each room on the unit. That was not -- the TV cameras didn't come, but neither did Staff Nurse Letby come back to the unit. And over the next 11 months before the police were called in, we had to resolutely resist repeated attempts by

management for Staff Nurse Letby to come back to the unit. So yes, if you had safety concerns, you ought to do something about it and that's what we as a group of consultants did.

MR MYERS: Can I confirm two things, my Lord, if I may?

MR JUSTICE GOSS: Yes.

Further cross-examination by MR MYERS

MR MYERS: You took your time about asking for CCTV, didn't you, Dr Gibbs, if your suspicions were so great?

GIBBS: I said increasing concerns had been growing over that time and that with -- it did take time to get to that point. The tipping point was the tragic deaths, which shouldn't have happened in healthy triplet boys, of [Baby O] and [Baby P]. That precipitated action.

MYERS: And if you were really concerned you could have asked for CCTV before then, couldn't you?

GIBBS: We could have done, yes. A very unusual measure to do in a hospital, unheard of in my experience.

MYERS: The other thing is this. You talked about Nurse Letby.

In fact there's a formal grievance procedure that a member of staff can follow, can't they? There's a formal grievance procedure?

GIBBS: Yes.

MYERS: Yes. And after she had been reallocated to other duties, that is something Nurse Letby pursued, didn't she --

GIBBS: Yes.

MYERS: -- as a member of staff is entitled to if they feel they've been treated badly?

GIBBS: Yes.

MR MYERS: Thank you.

MR DRIVER: I have no further questions.

MR JUSTICE GOSS: Thank you, Dr Gibbs. That completes your evidence today and, in all likelihood, completes the evidence you will be giving in this case. But just in case, for some unexpected reason, you are required to come and give further

evidence in this case, would you please continue not to speak about this case to anyone else --

GIBBS: Right.

MR JUSTICE GOSS: -- until it is over? Thank you very much indeed.

(The witness withdrew)

MR DRIVER: My Lord, the next witness to give evidence requires screens.

MR JUSTICE GOSS: Yes. We'll have to have a two-minute break then or 3 minutes. We do our best but it physically takes a bit of time.

(Pause)

MS REBECCA MORGAN (affirmed)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Could we begin with your full name, please?

MORGAN: Rebecca Anne Morgan.

ASTBURY: Very politely you are answering me because I'm asking you questions, but if you could make sure you keep your voice up, please: everyone in the room needs to hear that which you say. Also you'll see a microphone in front of you, it doesn't amplify, unfortunately, it only records, so it's over to you in that regard.

Your occupation, please?

MORGAN: Nurse.

ASTBURY: Thank you. We've heard from other evidence that you were a student nurse back in June of 2016; is that right?

MORGAN: Yes.

ASTBURY: That was during the course of your degree studies; is that right?

MORGAN: Yes.

ASTBURY: Did they span a period between 2014 and 2017?

MORGAN: Yes.

ASTBURY: Had you, in fact, completed most of your nurse training at Alder Hey Children's Hospital?

MORGAN: I went to Edge Hill University, so most of my clinical placements were at Alder Hey.

ASTBURY: Had you asked specifically for a placement at Chester?

MORGAN: Yes.

ASTBURY: And was that to gain experience in the neonatal field?

MORGAN: It was the trust closest to where I lived, I lived in Chester, so I wanted -- I hadn't been through university, so I wanted to go to my local hospital and I used that as an opportunity to get further experience in neonatal.

ASTBURY: Thank you. So a combination of those things?

MORGAN: Yes.

ASTBURY: Thank you. Are you now qualified and employed as a neonatal nurse?

MORGAN: Yes.

ASTBURY: Was the first day of your placement at Chester in the neonatal unit Thursday, 23 June 2016?

MORGAN: Yes.

ASTBURY: And did you start, that morning, what's described as a long day shift at 7.30 am?

MORGAN: Yes.

ASTBURY: Were you allocated at that time a nurse by the name of Lucy Letby as your permanent mentor?

MORGAN: Yes.

ASTBURY: And were you told that you'd be working alongside her during your placement?

MORGAN: Yes.

ASTBURY: All right. Now, during that handover, is it your recollection that you, or certainly Lucy, had two designated babies by the names [Baby O] and [Baby P].

MORGAN: As far as I can remember.

ASTBURY: Right, thanks. And do you recall that they were two of a set of three triplets?

MORGAN: Yes.

ASTBURY: Do you recall any issues being raised about either [Baby O] or [Baby P] on 23 June during the course of that handover?

MORGAN: No.

ASTBURY: And do you recall how initially you spent the morning with your mentor, Lucy Letby?

MORGAN: Yes.

ASTBURY: Could you describe to us how the shift began, please?

MORGAN: It was my first day on the unit, so she was showing me round the neonatal unit and what a normal day looked like -- just went through what a normal day would look like on their unit and what needed doing.

ASTBURY: Were there routines that you had to familiarise yourself with?

MORGAN: Yes, just generally what would happen with the care of the babies over the day, like the ward round and things like that.

ASTBURY: Okay. Did you have a particular uniform that differed from other members of staff?

MORGAN: Yes. So I wore a student nurse uniform, so that was a grey tunic with navy blue pants.

ASTBURY: As part of your training did you have what's sometimes called a competency document?

MORGAN: You had a PAR document that had to be completed.

ASTBURY: A PAR document?

MORGAN: Yes.

ASTBURY: Does that stand for something?

MORGAN: I'm not 100% sure.

MR JUSTICE GOSS: It's probably an acronym for something because we live in a world of acronyms.

MR ASTBURY: Is that what it was, in effect, a list of competencies?

MORGAN: Yes, the official document that you have to have completed by the time you finish your nurse training.

You get a new one each year.

ASTBURY: And was one of your responsibilities during your placement to complete as many of those competencies as you could?

MORGAN: Yes.

ASTBURY: Would they be signed off by whichever nurse or other clinician was alongside you at the time?

MORGAN: Yes.

ASTBURY: All right. Just in summary, what sort of duties or responsibilities were you at that stage of your training able to assume in the unit?

MORGAN: As you go into the third year you start to take more responsibility for the babies, but just their general day-to-day care.

ASTBURY: Okay. Would you, for example, conduct observations?

MORGAN: Yes, taking observations, feeding.

ASTBURY: All right. Cares?

MORGAN: Yes, cares.

ASTBURY: When you fed babies, would that be simply by bottle or were you in a position to utilise a nasogastric tube?

MORGAN: No, I could do a nasogastric tube or...

ASTBURY: Okay. Was part of your responsibility in utilising a nasogastric tube the process we've heard of aspiration?

MORGAN: Yes.

ASTBURY: Just explain to us very briefly what you understood that to be at the time.

MORGAN: To attach a syringe on to the end of the nasogastric tube, pull back a little bit to gain an aspirate, and then test that on a pH strip.

ASTBURY: So the aspirate would come from the other end of the tube --

MORGAN: Yes.

ASTBURY: -- in the baby's stomach, all being well, and you would test what was drawn up?

MORGAN: Yes, the contents.

ASTBURY: How would you test that very briefly?

MORGAN: On a pH strip.

ASTBURY: And what would you be looking to find on that pH test?

MORGAN: An acidic reaction, so you want it to be less than 6.

ASTBURY: And what would that tell you if it was less than 6?

MORGAN: That it's in the stomach, you've got an acidic reaction.

MR JUSTICE GOSS: The end of the tube is in right place in the stomach? Yes, we have heard that.

MORGAN: Yes.

MR ASTBURY: Might you find other things in the aspirate that would be important?

MORGAN: Yes, you could... Do you want me to tell you?

ASTBURY: Yes, please.

MORGAN: Sorry. Yes, blood or bile or anything like that.

ASTBURY: It could also be an alert as to other issues --

MORGAN: Yes.

ASTBURY: -- affecting the baby?

MORGAN: Yes.

ASTBURY: Thank you. When you fed by a nasogastric tube, would you leave the baby during the feeding process or would you remain with them?

MORGAN: Stay with the baby.

ASTBURY: Right. I suppose it all depends on how much milk they're actually receiving but is it generally a lengthy process or not?

MORGAN: It depends on how much milk. Sometimes the babies push back, so it comes back up a little bit, so you have to go back down.

ASTBURY: All right. On 23 June, did your responsibilities include both observations and feeding in respect of [Baby O] and [Baby P]?

MORGAN: Yes.

ASTBURY: They being Lucy Letby's designated babies and you working alongside her?

MORGAN: Yes.

ASTBURY: You won't have seen this, but on your right is a screen on which we can put documents. So I'm going to ask Mr Murphy, who's assisting me, to go to tile 94, please, on [Baby O]'s sequence of events.

We'll deal with [Baby O] first and then go on to [Baby P].

Your name is on the front. It gives us access to the chart. If we can go behind that, please. Scroll down.

If we can, hopefully, include the initials at the bottom. Reading the very bottom row from left to right, do you recognise your initials, Nurse Morgan?

MORGAN: Yes.

ASTBURY: There may actually be -- is the mouse active? If you take the mouse, could you point it out to us, please, on the screen?

MORGAN: There's my initials (indicating).

ASTBURY: Thank you. If we look up to the top of that column, that's timed at 08.30?

MORGAN: Yes.

ASTBURY: And just confirm with me, please, does that indicate that [Baby O] was fed donor-expressed breast milk via an NGT tube; is that right?

MORGAN: Yes.

ASTBURY: A total of 13ml?

MORGAN: Yes.

ASTBURY: The aggregate since midnight then reaching 59 in total?

MORGAN: Yes.

ASTBURY: Okay. You have put in the row marked on the left "aspirates" the word "trace". Can you just explain that to us, please?

MORGAN: We just got a small aspirate back.

ASTBURY: That's what that is intended to mean?

MORGAN: Yes.

ASTBURY: There was just a small amount of aspirate?

MORGAN: Yes.

ASTBURY: Had there been any -- does that tell you anything about, at that point, [Baby O]'s feeding?

MORGAN: Oh, I would... That he was digesting his milk and his stomach was --

ASTBURY: Okay.

MORGAN: -- empty.

ASTBURY: Is there anything to worry about based on that entry?

MORGAN: No.

ASTBURY: Thank you. Is that your handwriting in the column?

MORGAN: Yes.

ASTBURY: Have you written that in yourself?

MORGAN: Yes.

ASTBURY: And we can see, as we read across, there are two more entries in respect of feeds to [Baby O], timed at 10.30 and 12.30. Can you see those on the top?

MORGAN: Yes.

ASTBURY: Whose handwriting is in those columns, please?

MORGAN: That is my own handwriting.

ASTBURY: Do you happen to recall whether you conducted those feeds?

MORGAN: I can't remember.

ASTBURY: But it's certainly you that's filled in the form?

MORGAN: Yes.

ASTBURY: If we go to the bottom, they are not your initials that have been entered in below?

MORGAN: No.

ASTBURY: Is that an indication that you were working together?

MORGAN: Yes.

ASTBURY: Thank you. Could we look next, please, at the observation chart, which you told us you would play a part in. That's at tile 93, please, Mr Murphy.

Again, not your name on the frontispiece, but the form has a number of nurses on it. Scroll down, please, to the initials again. Can you again recognise your initials there, please, Nurse Morgan?

MORGAN: Yes.

ASTBURY: Before we scroll up to see the times, those entries on the hour and each hour, are they all in the same handwriting?

MORGAN: Yes.

ASTBURY: From your first entry, I should say. So from there on in, can you confirm whether that's your handwriting on --

MORGAN: The first, second and third is my handwriting.

ASTBURY: Okay, no initials -- not a criticism -- in the third?

MORGAN: No.

ASTBURY: And then not your handwriting in the next two columns; is that right? We can see that they've got different initials at the bottom.

MORGAN: Yes.

ASTBURY: Thank you. So, just to complete the picture, if we scroll up to remind ourselves what time they were taken, please. They appear to be observations taken at 08.30, 10.30 and 12.30. Do you agree?

MORGAN: Yes.

ASTBURY: Another one of your roles was to make those sort of observations and, again, would that have been alongside the designated nurse at the time?

MORGAN: Yes.

ASTBURY: Keeping the times at the top of the chart in view, do [Baby O]'s observations and the frequency of his observations change at a certain point?

MORGAN: From 12.30 they become hourly from two-hourly observations.

ASTBURY: All right. Do you recall why that was the case?

MORGAN: I don't remember.

ASTBURY: Okay. If we move on to 14.30, to the bottom of the page, please, just to check the initials before -- there appears to be a gap. Are you able to explain why that was? Do you have any recollection of why that was?

MORGAN: Sorry, can you repeat?

ASTBURY: Yes, there appears to be a gap. Even though it's gone to hourly observations, there just seems to be a gap and I wondered if you were able to explain why there was a gap at that particular -- between 14.30 and 16.30.

MORGAN: I don't remember, sorry.

ASTBURY: No, please don't apologise. There came a point, we've heard, when [Baby O] became very ill that afternoon.

Do you have any recollection of those events?

MORGAN: I can remember that he had become unwell, but I don't remember a specific point of when he became unwell.

ASTBURY: Okay.

MORGAN: I know he'd been moved into nursery 1 from nursery 2.

ASTBURY: Given this was your first day on the unit, were you particularly involved with [Baby O] after that point in the afternoon?

MORGAN: No, I stayed out of nursery 1.

ASTBURY: Any reason for that?

MORGAN: Just, I assisted other nurses.

ASTBURY: All right. Was [Baby O] being cared for by others by that point?

MORGAN: Yes.

ASTBURY: And of course, we've heard there were still other babies in the unit that need to be cared for and maintained.

MORGAN: Yes.

ASTBURY: Were you aware something perhaps out of the ordinary was happening with [Baby O]?

MORGAN: Yes.

ASTBURY: Why was that?

MORGAN: Just the general atmosphere. There was a lot of people around. People had mentioned that he'd been poorly.

ASTBURY: You were originally, if I can put it this way, paired up with Lucy Letby during the course of the morning. We've seen your joint notes and the like. Did that cease once [Baby O] fell ill?

MORGAN: Yes. She was with [Baby O] and I just helped the other nurses on the unit.

ASTBURY: So do we take it from that she was occupied then in nursery 1, where [Baby O] had been moved?

MORGAN: Yes.

ASTBURY: All right. Was one of the babies that you looked after, while [Baby O] was poorly, [Baby P]?

MORGAN: Yes.

ASTBURY: Do you recall, tragically, [Baby O] passing during the course of that afternoon and early evening?

MORGAN: Yes. Well, I wasn't there, but I can --

ASTBURY: You were aware that's what --

MORGAN: Yes.

ASTBURY: -- unfolded? All right. Did that have an impact on the staff in the unit at the time that struck you?

MORGAN: Yes, everybody was very upset.

ASTBURY: And having seen what was going on in nursery 1, did you have any view or form any view on the way that nurses and doctors had worked together during the course of that process?

MORGAN: Just that everyone seemed to be very supportive of each other and checked that everybody was okay.

ASTBURY: I asked you about [Baby P]. Staying with the same day, 23 June, I think you told us that you did have some contact with [Baby P]. Did you conduct observations with [Baby P] as you did with [Baby O]?

MORGAN: From what I can remember.

ASTBURY: Okay. Let's have a look at tile 132 on [Baby P]'s sequence of events, please. If we can look behind that tile.

Scroll down, please.

If we can look for your initials on the bottom row.

If you can identify them for us. We'll probably spot them. Are they yours towards the centre of the page?

MORGAN: Yes, this one (indicating).

ASTBURY: If you could move your cursor to the first of those entries. I'm going to ask Mr Murphy to scroll down so the cursor can -- sorry.

We can see that's 8 o'clock, 10 o'clock, 12 o'clock and 2 o'clock, those four entries that you've initialled; is that right?

MORGAN: Yes, and if... Sorry...

ASTBURY: Is that your writing a little further on? Go down again.

MORGAN: There's five entries by me, I think -- no, that 8 o'clock one isn't myself, sorry.

ASTBURY: I'm leading you astray there. Just before we move on from that then, are there another set of initials at 8 o'clock, or appear to be, in the bottom?

MORGAN: Yes. I don't think that's myself. I'm 10, 12, 14 and 18.

ASTBURY: Thank you. So if we can go to the bottom of the page again, Mr Murphy, just to complete that point. Not your initials immediately before the one you pointed out?

MORGAN: Yes.

ASTBURY: Is that something written underneath your initials on the first occasion?

MORGAN: I think it's Lucy's initials.

ASTBURY: Okay. Written underneath yours?

MORGAN: Yes.

ASTBURY: All right. Is it your handwriting in the columns as far as we can see?

MORGAN: Yes.

ASTBURY: Have a look at those observations again. But from recollection, contained within your contact with [Baby P] that day, did anything raise any concerns up until 6 o'clock when you made that entry?

MORGAN: No.

ASTBURY: Thank you. Your last entry on the observations chart is 6 o'clock. Do you remember what -- do you happen to remember what time you finished that particular shift?

MORGAN: I think it was about 7 o'clock approximately.

ASTBURY: We've heard that ordinarily the nurses go off a little later than 7 o'clock. Was there any reason why you left a little earlier?

MORGAN: I think because it had been quite a busy day and an intense first day, they let me go home early.

ASTBURY: Were you back on duty the next day, Friday, 24 June?

MORGAN: Yes.

ASTBURY: Starting at 7.30?

MORGAN: Yes.

ASTBURY: And were you in company again with your mentor, Lucy Letby?

MORGAN: Yes.

ASTBURY: Did you detect any change in mood in the unit the following day?

MORGAN: It was just a bit more sombre. It was a bit sad.

ASTBURY: All right. We've heard that Lucy Letby was the designated nurse for [Baby P] on the 24th; is that right?

MORGAN: Yes.

ASTBURY: So did you have contact with [Baby P] on that particular day as well as a consequence of your mentorship with Lucy Letby?

MORGAN: Yes.

ASTBURY: Are you able to recall where [Baby P] and his brother [Baby R] were located that day?

MORGAN: Yes.

ASTBURY: Which nursery they were in?

MORGAN: Nursery 2.

ASTBURY: Thank you. Do you happen to recall whether there were any other babies in that nursery?

MORGAN: I think it was just the two of them from what I can remember.

ASTBURY: And was that because of what had unfolded the day before?

MORGAN: Yes.

ASTBURY: Did you speak to [Baby P]'s parents that day?

MORGAN: I can't remember if I spoke to them that day.

I remember dad coming down to have an update with the doctors.

ASTBURY: This is on the Thursday? Sorry, it's the Friday.

MORGAN: Friday.

ASTBURY: On Friday, the 24th. Stick to the numbers.

So on Friday dad came down for an update?

MORGAN: Yes.

ASTBURY: Do you remember what, if anything, he did while he was down on the unit?

MORGAN: Not that I can recall. Spoke to the doctors.

ASTBURY: Okay. Was there any contact between him and either of his sons?

MORGAN: I can't remember, sorry.

ASTBURY: All right. And are you able to remember what time that was, roughly, in your shift or what stage of your shift that was?

MORGAN: I think it was around ward round, which would normally be about 9 o'clock.

ASTBURY: All right. When you came on duty, do you recall whether any precautions had been taken in respect of [Baby P]?

MORGAN: From what I can remember, I think they'd been made nil by mouth.

ASTBURY: You say "they", do you mean both of the brothers?

MORGAN: Sorry, yes, including [Baby R] as well.

ASTBURY: Thank you, just so I'm clear. Again, as you had done the day before, did you complete some observations in respect of [Baby P] that morning?

MORGAN: Yes.

ASTBURY: Happily, we have the same observation chart open.

If we go to the very right-hand end of the chart.

Unfortunately, it's obscured by a reference number that's imprinted. If we go up and look at the times, first, please, for those last three columns, they appear to be 09.00, 11.00 and 13.00. If we scroll back down, are you able to recognise perhaps the handwriting or even the partially obscured initials under the J?

MORGAN: Yes, that's myself.

ASTBURY: That's you?

MORGAN: Yes.

ASTBURY: So you have noted those observations during the course of the earlier part of the shift?

MORGAN: Yes.

ASTBURY: Thank you. You mentioned ward round. What happened insofar as [Baby P] was concerned around the time of the ward round?

MORGAN: I can't remember actually it being -- whether it was exactly at ward round, but he had an apnoea and bradycardia with desats.

ASTBURY: All right. Were you there when that happened?

MORGAN: I was at [Baby R]'s incubator.

ASTBURY: So in nursery 2?

MORGAN: Yes.

ASTBURY: At his brother's incubator?

MORGAN: Yes.

ASTBURY: Anyone else at the incubator when it happened; can you recall?

MORGAN: No.

ASTBURY: Is that there wasn't anybody or you can't recall?

MORGAN: There wasn't anybody.

ASTBURY: Okay. Was there anybody else in the nursery at the time?

MORGAN: There was a doctor writing notes.

ASTBURY: Do you remember who that was?

MORGAN: I don't remember his name, sorry.

ASTBURY: Anybody else?

MORGAN: No.

ASTBURY: So just you and that doctor in the room at the time?

MORGAN: Yes.

ASTBURY: All right. Do you happen to know where your mentor, Lucy Letby, was at that time?

MORGAN: I can't remember.

ASTBURY: All right. What happened when [Baby P] fell ill on this occasion; do you remember?

MORGAN: I helped the doctor take the lid of the incubator so he could examine them -- examine him. And then I'm not...

I can't really remember what...

ASTBURY: Okay. What alerted you to the features that you have just described to us in respect of [Baby P]?

MORGAN: His apnoea monitor alarmed and the saturations and heart rate monitor, his Philips monitor, alarmed as well.

ASTBURY: So the doctor came over, you took the top of the incubator off. Do you remember what the doctor did at that point?

MORGAN: No, I can't recall, sorry.

ASTBURY: What happened next as far as you can remember?

MORGAN: As far as I can remember, a lot of people appeared.

ASTBURY: Okay. Did they appear very quickly?

MORGAN: Yes.

ASTBURY: And do you remember who any of those people were?

MORGAN: I can remember seeing two doctors.

ASTBURY: Do you remember the names of those doctors?

MORGAN: Is it Jess? Jessica Burke.

ASTBURY: Okay.

MORGAN: And [Dr A].

ASTBURY: So they weren't there, obviously you told us, at the time that [Baby P] collapsed, but they were there afterwards?

MORGAN: Afterwards, yes.

ASTBURY: Soon afterwards or was there a delay?

MORGAN: I'm not sure how quickly it was.

ASTBURY: All right. Do you remember any nurses coming into the nursery?

MORGAN: There was nurses there but I can't recall who they were.

ASTBURY: Do you remember whether at any point your mentor, Lucy Letby, returned to the nursery?

MORGAN: Yes.

ASTBURY: Are you able to say how soon after the collapse that happened?

MORGAN: I think she came quite quickly afterwards.

ASTBURY: Did you play -- we've heard evidence about how the day then unfolded in respect of [Baby P]. Did you play any part thereafter in [Baby P]'s treatment that day --

MORGAN: No.

ASTBURY: -- apart from the observations we've seen?

MORGAN: I did scribing, so wrote down a little bit about what drugs they were giving, at what time, for a short period.

ASTBURY: Right. We've heard there's a process whereby a contemporaneous handwritten record is kept so that it's accurate

and then it might be transposed on to the notes afterwards. Did you do that throughout the day or just at a particular stage of events?

MORGAN: I think it was just at the beginning.

ASTBURY: So you helped by keeping a note of those drugs that were being administered and when?

MORGAN: Yes.

ASTBURY: All right. Did somebody take over from you at some point?

MORGAN: Yes. I started to become upset so I took myself out of the room and swapped with Yvonne Farmer.

ASTBURY: We've heard that, sadly, [Baby P] suffered a number of further collapses that day. Did you play any part in his treatment during those collapses?

MORGAN: Not that I can remember.

ASTBURY: We've also heard that again, sadly, [Baby P] passed away that afternoon. Were you involved in that final stage of his treatment?

MORGAN: No.

ASTBURY: But were you aware that's what then happened?

MORGAN: Yes.

ASTBURY: Again, you've told us about the reaction on the unit in the aftermath of [Baby O]'s death. Can you describe to us what it was like after [Baby P] had passed away?

MORGAN: Again, everyone was upset. I think probably a bit in shock.

ASTBURY: I'm assuming, correct me if I'm wrong, with people being engaged with [Baby P], were you tasked to look after babies elsewhere on the unit as well?

MORGAN: I helped where I was needed.

MR ASTBURY: Right, okay. Thank you, Nurse Morgan.

I have no more questions. If you could wait there a moment.

Cross-examination by MR MYERS

MR MYERS: Ms Morgan, I'm just going to go over the same sort of areas, there's a little more information that I'd be grateful if you could help with on some of that.

All right?

MORGAN: Of course.

MYERS: Are you warm enough?

MORGAN: Yes.

MYERS: You'd be the first person who wasn't in here if you weren't!

The placement that you were doing, was this part of your degree whilst you were studying at Edge Hill University?

MORGAN: Yes.

MYERS: And the placement happened about halfway through your degree, didn't it?

MORGAN: Well, more than two-thirds.

MYERS: All right.

MORGAN: I was in my third year.

MYERS: It's something you had to do as part of your degree; is that right?

MORGAN: Not specifically that placement, but I had to go on placements as part --

MYERS: You had to do a placement --

MORGAN: -- (overspeaking) yes, clinical hours as part of my --

MYERS: Right. As you explained to us, the Countess of Chester was appealing because -- there might be various reasons but it was also quite close to where you lived; is that right?

MORGAN: Yes.

MYERS: And the very first day of that placement was 23 June in fact, wasn't it, 2016?

MORGAN: Yes.

MYERS: The purpose of the placement is to give you some experience and exposure to what nursing on a neonatal unit was like, wasn't it?

MORGAN: Yes.

MYERS: So would you be there to watch and learn?

MORGAN: Yes.

MYERS: So you're watching what the nurses are doing when you're there. And you're given a mentor whilst you're on placement, aren't you, that's the idea?

MORGAN: Yes.

MYERS: Is it a particular nurse who is designated to you as the mentor?

MORGAN: You tend to have a mentor, but you can work with other people. You don't always just work with your mentor.

MYERS: But the mentor is someone who you would start with when you go on to the unit; is that correct?

MORGAN: If they were in that day, yes.

MYERS: And Nurse Letby was your mentor, Lucy Letby?

MORGAN: Yes.

MYERS: So you were with her when you started on the unit?

MORGAN: Yes.

MYERS: So the process of the placement, as you say, is to learn by watching? That's right, isn't it, that's part of it?

MORGAN: Yes, part of it.

MYERS: And also to learn by doing too?

MORGAN: Yes.

MYERS: And then when you're doing, the nurse who's with you will, certainly to start with, be supervising you and watching you?

MORGAN: Yes.

MYERS: So you spend some time together, in fact?

MORGAN: Yes.

MYERS: When you started on the 23rd, it was Lucy Letby who showed you round the unit in the morning, wasn't it?

MORGAN: From what I can remember, yes.

MYERS: And did she also, as she was doing so, explain to you the day-to-day routine?

MORGAN: Yes.

MYERS: And she also showed you the current patients and told you about them as well, didn't she?

MORGAN: Yes.

MYERS: As part of what you learnt to do, you told us a little about this, there were tasks that you were trusted with but supervised while you did them; is that correct?

MORGAN: Yes.

MYERS: That involved doing cares, conducting the observations, like we've seen on the charts --

MORGAN: Yes.

MYERS: -- checking the babies were clean, feeding them; is that right?

MORGAN: Yes.

MYERS: So you learned to use the NGT to feed and taking the aspirates?

MORGAN: Yes.

MYERS: And would you be left to do that on your own or would the nurse be with you to check how you were doing it?

MORGAN: They wouldn't always be there necessarily while I was doing it. I was able to complete that skill.

MYERS: So on the first couple of days, and obviously we're looking at the 23rd and 24 June at the moment, were there some of those tasks you were left to do unsupervised or at that early part of your placement were you pretty much supervised the whole time?

MORGAN: I can't recall, sorry.

MYERS: If we look at the observations, just briefly, the ones we looked at, first of all the ones on 23 June, which are at -- I've got it down as tile 18, but it'll come up.

MR JUSTICE GOSS: We looked at it as tile 89, I think.

MR MYERS: They appear in various places.

MR JUSTICE GOSS: I know. I commented on this a long time ago: the same chart appears in a number of places.

MR MYERS: In fact we've got them in paper anyway if anyone wants to see them. For these ones we have.

I apologise, it's for [Baby O], Mr Murphy. My mistake, my fault.

Had you used an NGT to feed a baby before you did this placement?

MORGAN: Yes.

MYERS: So you had some idea of what to expect?

MORGAN: Yes.

MYERS: If we pull back and take a look. We're looking at a series of charts, some for [Baby O], some for [Baby P]. In fact, you were involved with looking after [Baby O] and [Baby P] on the 23rd, weren't you? We'll see that on the charts.

MORGAN: Yes.

MYERS: And you were doing that under the supervision of Nurse Letby?

MORGAN: Yes.

MYERS: On this chart you've explained to us that the entries for 23 June for 8.30, 10.30 and 12.30 are your entries?

MORGAN: Yes.

MYERS: Do you want to just scroll down? We can follow it down and we'll see it there. "SN" stands for student nurse; is that right?

MORGAN: Yes.

MYERS: So you have signed off two of them, the third one you didn't sign off on. No criticism for that. If we look at the feeding chart that goes with it, keeping in mind this is 8.30, 10.30 and 12.30, we're going to look at the feeding chart next. I've got it at tile 88, but I know we may have looked at a different version of that tile.

Tile 88, though, please. We can actually see here, as you've explained to us, Ms Morgan, 8.30 and 10.30 and 12.30 have the 30 written under the hour; do you see that?

MORGAN: Yes.

MYERS: Following each of them down, looking at it as we do, we can see the feeds entered in the details for those three times on the feeds?

MORGAN: Yes.

MYERS: And also "trace" written next to aspirates?

MORGAN: Yes.

MYERS: Those are all entries by you, in fact, aren't they?

MORGAN: Yes.

MYERS: And you've initialled the 10.30 one, we can see if we look down.

MORGAN: The 8.30.

MYERS: The 8.30? I meant 8.30, sorry. The 8.30 one is initialled by you?

MORGAN: Yes.

MYERS: If we just check if your initials appear. Could we scroll down a little bit more? It's not your initials under the 10.30 and 12.30 part, is it?

MORGAN: No.

MYERS: But in fact, you've done the entries?

MORGAN: Yes.

MYERS: So that looks like you're doing these feeds or cares with [Baby O] and Nurse Letby is certainly with you at 10.30 and 12.30; do you agree?

MORGAN: Yes.

MYERS: If you remember on the observation charts, you've done the observations for 8.30, 10.30 and 12.30 too, hadn't you?

MORGAN: Yes.

MYERS: So are these things that would be going on altogether, you deal with all the observations and the cares and the feeds --

MORGAN: Yes.

MYERS: -- in one session?

MORGAN: Yes.

MYERS: Right. So you've done that. Thank you.

So you are doing that simultaneously with [Baby O].

Then if we have a look what you were doing with [Baby P], please.

MR JUSTICE GOSS: Sorry, just before we leave that, whilst it's there, can you see to the right under 14.00 hours, down at the bottom, is that your handwriting?

MORGAN: I don't think so, no. No, I don't think that is my handwriting.

MR JUSTICE GOSS: Thank you.

MR MYERS: That's [Baby O]'s cares and observations. We are going to move next to [Baby P] for the same day. Could we look next, please, at [Baby P]'s observation chart, which is at tile 22 on the [Baby P] sequence.

If we take a moment to focus on that, Ms Morgan. We looked first of all under the 23 June. If you look at that and go right, we actually looked at five entries, although you'd only -- only four of them, you say, are yours: one at 08.00, 10.00, 12.00, 14.00 and 18.00.

MORGAN: Yes.

MYERS: You dealt with the entries you tell us at 10, 12, 14 and 18; is that correct?

MORGAN: Yes, that's my handwriting.

MYERS: Let's scroll down to the bottom to have a look.

Thank you very much. The cursor has just slipped down.

You've also initialled 10, 12, 14 and 18, haven't you?

MORGAN: Yes.

MYERS: Of course, these we're going to see must be going on probably just before the ones with [Baby O], which are at 8.30, 10.30 and 12.30 --

MORGAN: Yes.

MYERS: -- save for the 10.30 and 12.30?

Also, we've looked at this chart, can we look at the fluids chart? I don't think we've seen that yet. The fluids chart for [Baby P]. That's at tile 24, please.

We have these in paper, ladies and gentlemen, we don't need to go to them now, but we have them there, they're easy to see there.

Take a moment to absorb what we can see there. We know for [Baby P] on this day you dealt with his observations, we've just seen it, at 10.00, 12.00, 14.00 and 18.00. If we go down to the line that says, "Feeds" -- can you see that row?

MORGAN: Yes.

MYERS: If we look down, first of all, follow "feeds" and follow down the 10.00 column, there we are.

MORGAN: Yes.

MYERS: Is that your writing that we can see there?

MORGAN: Yes.

MYERS: And you've written in the word "trace" haven't you, where it's got "aspirates"?

MORGAN: Yes.

MYERS: And you signed it off down at the bottom and there's the initials, it may be LL, but underneath your initials; is that correct?

MORGAN: Yes.

MYERS: 10.00, all right. Thank you.

In fact although you didn't do the observations at 08.00, if we go one column to the left of where we're looking, is that your writing also on the 08.00 feeds?

MORGAN: Yes.

MYERS: So it looks like you did the feeds and the aspirates for [Baby P] at that time?

MORGAN: I at least wrote it on the chart.

MYERS: You at least wrote it on the chart. If we look at the signature on the 08.00 one, if we drop straight down, there's two signatures. Can you help us with whether or not the one actually in the box is yours with a pen that isn't quite picking up?

MORGAN: I'm not sure to be honest, sorry.

MYERS: That's all right. So the first one you entered for that day is 08.00 and that's where the cursor is now. Then we've got 10.00, which I asked you about first. Then moving to the right, 12.00.

MORGAN: Yes.

MYERS: That's also your writing and your signature, isn't it?

MORGAN: Yes.

MYERS: Your initials. Then we move to the right again and we've got 14.00. Again, is that your writing with your initials there?

MORGAN: Yes.

MYERS: Then we go to the right again to 16.00.

MORGAN: Yes.

MYERS: Again, is that your writing?

MORGAN: Yes.

MYERS: The initials are not quite so clear. Can you help us with whether that's your initials or not?

MORGAN: I think so.

MYERS: Then actually, there's another column we've seen, 18.00, the next one along to the right. Again, is that your writing where we've got "EBM, [Initials of Baby R], 15, 121"?

MORGAN: Yes.

MYERS: That's your writing at 18.00. There's nothing in the aspirates in fact on that occasion, is there?

MORGAN: No.

MYERS: Does that mean maybe [Baby P] wasn't aspirated at that time for whatever reason?

MORGAN: No. I would have always checked the aspirate before we gave a feed.

MYERS: All right.

MORGAN: I don't recall why it's not written down there.

MYERS: You don't recall why. In any event, it's your writing in the column above. Can you help us with what the mark is in the box that's below that? Don't worry if you can't.

MORGAN: No, sorry.

MYERS: So that's 18.00 and we've seen also that you did the observations for [Baby P] at 18.00 as well. That was your final observation that day, we saw that, didn't we?

MORGAN: Yes.

MYERS: Throughout the time that you were dealing with [Baby P], if you can remember, please tell us, was there anything about him that seemed unwell or did he seem to be as stable as you might have hoped in the circumstances?

MORGAN: Not that I can recall. He seemed well.

MYERS: Right. 18.00 then is where we see the final entry with your writing on the feeds here and on the observations.

And then I think you told us you were allowed to leave a little early that day at 7 o'clock in the evening, weren't you?

MORGAN: Yes.

MYERS: And you remember that, you remember that day?

MORGAN: Yes.

MYERS: 7 o'clock you left. You come back the following day on the 24th. And you were again with Nurse Letby in nursery 2, weren't you? I'm not going to go back to that observation chart for [Baby P] but we've seen you dealt with [Baby P]'s observations at 9.00 that morning, didn't you?

MORGAN: Yes.

MYERS: And then actually the collapse, sad collapse, of [Baby P], followed not very long after that; is that right?

MORGAN: From what I can remember.

MYERS: Let me just ask you a little bit about that. Not a lot.

Then, we're finished. You were in the room, nursery 2, at the time that [Baby P] collapsed, weren't you?

MORGAN: Yes.

MYERS: And you remember that -- was it some time round about the time of a ward round that had been or was being conducted?

MORGAN: Yes.

MYERS: And do you recall there was also a doctor in the room with you at the time of the collapse?

MORGAN: Yes.

MYERS: And was he writing up notes as far as you can remember?

MORGAN: Yes.

MYERS: Do you remember whether there was anybody else in the room or if there wasn't or you're just not sure as to who else might have been in the room, if anyone?

MORGAN: From what I can remember, there was nobody else in the room, just me and the doctor.

MYERS: Do you recall whether in particular Nurse Letby was in the room at the time?

MORGAN: She wasn't.

MYERS: You remember her coming back into the room, is that where your recollection --

MORGAN: I can't particularly remember her coming back in, but I know she wasn't in the room at the time.

MYERS: All right. Do you remember her coming into the room at any point after the monitor had sounded?

MORGAN: I can just remember her being there again. I can't remember the exact moment she came.

MYERS: Right. In your mind you can't pick the point when she was there, but she was there?

MORGAN: Yes.

MYERS: Your recollection is she wasn't actually there at the time the monitor went?

MORGAN: No.

MYERS: I'm going to suggest to you she might have been talking to you at that time. Disagree if that's not your recollection.

MORGAN: Could you repeat that?

MYERS: I'm going to suggest to you she was talking to you at that time, but disagree if that isn't your recollection.

MORGAN: That isn't my recollection, no.

MYERS: All right. But you remember her being there later on?

MORGAN: Yes.

MYERS: You also tell us you remember two doctors who came in pretty rapidly after the alarm sounded; is that right?

MORGAN: I'm not sure how quickly it was, how close together the two events are. I can just remember them coming in.

MYERS: So the alarm went off and then there are two doctors who come in at some point?

MORGAN: Yes.

MYERS: And they're Jessica Burke and [Dr A]?

MORGAN: Yes.

MYERS: Can you help us whether your recollection is Nurse Letby being in the room before the doctors came or after the doctors came?

MORGAN: She was already in the room.

MYERS: And do you remember Christopher Booth being in the room, Nurse Booth?

MORGAN: I... I can't remember. I can't remember to confidently say I can remember him being there.

MR MYERS: I've finished. Thank you very much, Ms Morgan.

Re-examination by MR ASTBURY

MR ASTBURY: Nearly done. While we have that particular form on the screen, please, Mr Murphy. Your attention has been drawn to that last entry in your handwriting on this particular chart, Nurse Morgan. Are they your initials at the bottom of that column?

MORGAN: Sorry, which one?

ASTBURY: That last column in your handwriting, the one which doesn't have any aspirate entered into it.

MORGAN: I don't think so, but I can't tell what -- whose it is or what it's supposed to be.

ASTBURY: All right. Just developing that point, we can see on that page occasions where your initials and those of another appear alongside. You've identified for us on other forms, and I won't go to them, occasions when it's your handwriting in the column but Nurse Letby's initials at the bottom.

MORGAN: Yes.

ASTBURY: Does that tell us anything about who actually did the test as opposed to who filled it in? Is there any significance in why sometimes it's your initials, sometimes it's hers, sometimes it's both?

MORGAN: I can't tell you really why it's different sometimes.

Sometimes I could have written the observations while she was doing them or I've written them afterwards and she's signed that they're okay and she's reviewed them.

ASTBURY: Okay. So at least this, an indication that both of you played a part in what we see on the form?

MORGAN: Yes.

MR ASTBURY: Thank you.

My Lord, I have no further questions. Does my Lord have any?

Questions from THE JUDGE

MR JUSTICE GOSS: Just in relation to that last point, manifestly you played a part in the completion of the form because there are both persons' initials there.

MORGAN: Yes.

MR JUSTICE GOSS: Does that mean you both played a part in the observations and the other acts that were taking place at the time or not?

MORGAN: Sorry, I don't understand.

MR JUSTICE GOSS: You understand that the fact that there are initials there, does that mean that both of you have -- if both of your initials are there, both of you played a part actually in the process?

MORGAN: Of taking the observations? We could have.

MR JUSTICE GOSS: And taking the aspirate and that sort of thing?

MORGAN: Yes. Normally, it's just a one-person job. It doesn't take two people to do it. But she could have -- somebody could write it down whilst you were doing it.

MR JUSTICE GOSS: Yes.

MR ASTBURY: Sorry, I thought I'd covered that. I'm sorry if I hadn't done it.

MR JUSTICE GOSS: Literally the question was the one that I put. But there we are. Thank you.

That completes your evidence, you won't be required again, I can say with confidence, to give evidence again. Just remain where you are for the time being, please. We'll have our break at this stage, a ten-minute break.

(12.19 pm)

(A short break)

(12.30 pm)

DR STEPHEN BREAREY (recalled)

Examination-in-chief by MR DRIVER

(No audio feed from court)

(12.32 am)

BREAREY: -- and gave debrief to the team involved in the resuscitation. And [Dr B], I recall, spoke to the coroner and discussed things with the coroner. Dr Gibbs was the consultant on that evening and we made the decision for him to make a thorough review of the surviving triplets, [Baby P] and his surviving triplet.

DRIVER: [Baby P] and [Baby R]?

BREAREY: [Baby R], thanks. Dr Gibbs did that review and screened them for infection and started some antibiotics and did some X-rays as well, I believe. Then I finished for the day, really, effectively.

DRIVER: Thank you for that. Dr Gibbs has already given evidence this morning about that examination and the plan that was settled upon in consequence of [Baby O]'s events and the presentation of [Baby P].

Were you on duty the following day?

BREAREY: I was at work. I had a clinic in the morning, a cardiac clinic in the morning, which would have finished at around about 1 pm.

DRIVER: Pausing there, were you within the consultant team, the consultant primarily designated to deal with cardiac issues?

BREAREY: Well, in most hospitals like Chester, there's a group of acute general paediatricians and most of us all have a specialism between us covering most of the different specialties, really. So mine was cardiology. So I was the paediatrician, if you like, with the cardiology expertise in Chester. There are similar arrangements in most other district general hospitals.

DRIVER: Understood. And is it because of, in part, your specialism in cardiology that it came to be that you had dealings with [Baby P] on 24 June?

BREAREY: That's correct, yes [Dr B], who's the neonatal consultant that week, asked me to perform an echocardiogram for [Baby P]. She made me aware that he had deteriorated over the course of the morning and one of the differential diagnoses,

possible diagnoses for a sudden deterioration would be a cardiac cause.

Obviously, an echocardiogram, which is an ultrasound scan of the heart and the great vessels around the heart would be able to diagnose that or exclude that as a possible diagnosis.

DRIVER: Are you well-versed in performing echocardiograms?

BREAREY: Yes, I am.

DRIVER: And given cardiology is a particular interest of you, does it tend to be you who performs such investigations when required within the unit?

BREAREY: Yes.

DRIVER: Can you recall at approximately what time you were invited to perform such an investigation into [Baby P]'s heart?

BREAREY: Well, when I made my statement, I went by the junior doctor, Dr Burke's discharge summary, which said I performed it around about 12 midday. But actually, on reviewing the imaging again more recently, I can see that it was actually performed at 13.30, 1.30 pm.

Because that's -- it's registered as that on the images that are stored, which would fit more with my clinic in the morning and finishing my clinic around about 1 and coming to the neonatal unit after that.

DRIVER: We've seen many a time contemporaneous clinical notes specific to the patient, but leaving those aside for the moment, is it your practice for other reasons to keep a log of echo cardiograms that you perform?

BREAREY: Yes, that's correct.

DRIVER: Is that for your purposes?

BREAREY: Well, because I was the only paediatrician performing echocardiograms, like many of my colleagues in other hospitals, it's important to maintain my skills and so I have an honorary contract at Alder Hey Children's Hospital, I do a joint clinic with a paediatric cardiologist from there once a month. Sometimes I'll ask them to review some of my scans for peer review purposes. It's good practice anyway just to record what you're doing every time.

DRIVER: And in that regard do you effectively keep your own personal logbook of the echocardiograms that you perform?

BREAREY: That's correct, yes.

DRIVER: What were the circumstances, as informed to you, that led to you being requested to perform an echocardiogram on [Baby P] at or about 13.30 hours that afternoon?

BREAREY: Well, as I've said, [Dr B] explained to me that [Baby P] had deteriorated in the morning and that she needed me to exclude a cardiac cause for the deterioration.

DRIVER: At the point that you performed the investigation, what had been his cardiological history that day?

BREAREY: Well, from a position of being well in the morning, he had deteriorated with a bradycardia, slow heart rate, and desaturations, at least on two occasions, maybe more by the time I scanned him, which needed resuscitation, CPR, adrenaline, and he was then ventilated as well.

DRIVER: Thank you. At the time that you performed the investigation, had he enjoyed the return of spontaneous circulation?

BREAREY: Yes.

DRIVER: What did you discover?

BREAREY: Essentially, [Baby P] had a normal heart and great vessels leading from the heart. There was no evidence of any congenital heart disease that might explain why he had collapsed suddenly. In addition to that, there was no evidence of any pulmonary hypertension, which also is something that can cause hypoxia and a slow heart rate and cause babies to be very ill. And there was no evidence of fluid around the lining of the heart, which can also cause sudden deterioration.

DRIVER: So as part of the process of seeking to reach a differential diagnosis, were you able to eliminate any cardiological basis to explain the events of that date?

BREAREY: Absolutely, yes.

MR JUSTICE GOSS: Sorry, I didn't you hear you clearly. Was it hypo or hypertension?

BREAREY: Hypertension, pulmonary hypertension, so high blood pressure in the blood vessels between the heart and the lungs. It's different from hypertension -- systemic hypertension around the body and can cause low oxygen levels in babies with -- it's normally secondary to a respiratory cause in preterm babies or

secondary to babies that haven't transitioned from a foetal circulation to the circulation you'd normally have after birth.

Both of those --

MR JUSTICE GOSS: Well, I don't think we need -- Mr Myers may want to ask you, but it was just I wanted to be clear it was definitely hypertension, in other words raised, rather than low.

BREAREY: Yes.

MR DRIVER: Did you, Dr Brearey, have any continuing involvement in the treatment and care of [Baby P] after you'd performed that investigation into his heart?

BREAREY: No. I came back to the neonatal unit shortly after his death and then joined the debrief that I talked about last week.

DRIVER: So that was a debrief that occurred post the deaths, plural, of [Baby O] and [Baby P]?

BREAREY: That's correct.

DRIVER: Were you there throughout that debrief or did you join part-way through; can you recall?

BREAREY: I joined part-way through.

DRIVER: Who was leading that debrief?

BREAREY: Dr Rackham. He was the transport consultant that came.

DRIVER: By which stage, of course, [Baby P] had passed away. In your opinion, was there anything from your investigations that could begin to explain his demise?

BREAREY: As the lead neonatal consultant, it was my responsibility to review the care that was received the following week and I did that along with a number of senior nurses and consultants. So we reviewed the case then. We did highlight some minor deficiencies in care, if you like, but none of which would have affected the outcome of [Baby P], although clearly at the time we didn't have a diagnosis for why he suddenly collapsed.

But the things that we found tended to be staff being overcautious rather than omitting anything. The two things that I can think of were, firstly, that there wasn't any strict criteria for starting [Baby P] on IV antibiotics on day one of life, for example.

Antibiotics were discontinued after 36 hours but he wasn't ventilated on day one, which would have been the clear criteria to start antibiotics. So an example of staff being cautious but not doing any harm.

I think the other one was starting the parenteral nutrition. We have criteria for starting parenteral nutrition and he was a gestation above which we'd normally start parenteral nutrition. The cut-off is normally less than 32 weeks. The other criteria for it would be that is the baby is unlikely to establish full enteral feeds by 7 days. So maybe the team at the time thought that, being a triplet, they might take a little bit longer to get going with their feeds and therefore parenteral nutrition would be a good idea. Again, a decision that was a little bit outside the criteria but certainly a sort of no-harm criticism, if you like, of the care [Baby P] received.

The things that struck me in the review -- and clearly I had experience of [Baby O] and the other cases in this trial previously -- was the horrific nature of the whole day from a baby that had been very well and in air, taking some enteral feeds on day 4 at 33 weeks' gestation. We'd normally expect all our babies born at 33 week's gestation to survive and the survival rates for babies of that gestation are probably in excess of 99%, really. And this just wasn't a baby at 33 weeks' gestation, it was a 33-week gestation baby who was on day 4 of life and had been completely well for or very well for the first 3 or 4 days of their life.

I could see the trauma from the staff involved and, you know, it would have traumatised a very experienced intensive care neonatologist or intensive care doctor or paediatrician, really. The events of that day strike me as being very exceptional.

I think the other thing that was in my mind as well at the time was, clearly, the association with Nurse Letby, but it was the beginning of a day shift and the previous day with [Baby O] had been the beginning of a day shift and the two previous cases, more recently, [Baby N] and the triplets in April were day shifts.

And when we'd done our thematic review back in February 2016, what we had noted in that review was the majority of babies who had collapsed and deteriorated occurred at night in the early hours. And in April, 7 April, actually, 2016 --

DRIVER: Sorry to interrupt. You said triplets. Did you mean the twins, [Babies L & M]?

BREAREY: Yes, sorry.

MR MYERS: I don't intend to shut off Dr Brearey, as we haven't with the other colleagues who have embarked on this, but the question was relatively simple.

MR JUSTICE GOSS: Yes.

MR MYERS: I just make the observation that we're going well beyond that now and quite a long theory now being propounded and observations on the evidence more generally. We are aware of what they are, my Lord, but I feel it's important that I at least acknowledge or identify the fact that this is simply going into what Dr Brearey, we say, wishes to say rather than simply answering the question.

MR DRIVER: In the absence of an objection to Dr Brearey completing his sentence...

MR MYERS: I make it plain, my Lord, the only reason I am not objecting is because he has gone so far into it and we know where this is going, but I am making the observation, and it is an objection, we have a witness again, we say, expanding well beyond the terms of the question to say what they wish to the detriment of the defendant, my Lord.

MR JUSTICE GOSS: Mr Driver, we can see where this is going, obviously, in terms of what we anticipate Dr Brearey's answer will be. It's piecing together various pieces of evidence, so to speak, which were leading towards potential conclusions. Is that what you are basically saying? I don't think it's necessary for this witness to give this or appropriate. That can be done by other means -- and no doubt will be done by other means.

MR DRIVER: Understood. Thank you, Dr Brearey. Could you remain there?

MR JUSTICE GOSS: Obviously, if Mr Myers wants to ask any questions about it, he is at liberty so to do.

MR MYERS: Thank you, my Lord.

Cross-examination by MR MYERS

MR MYERS: Dr Brearey, what I would like to ask is focused on a particular matter and I'd be grateful if you could be.

You say that there was a review conducted, that's what led to the things you were saying, after the event.

I just have some questions about what happened with [Baby P] and I'd be grateful if you could answer these.

Whatever caused the collapse in the first place, and that's a question we have to deal with, whatever caused it, do you accept that a chest X-ray should have been taken sooner than 11.57? Do you accept that or not?

BREAREY: I wouldn't be able to comment on that because I haven't got the notes in front of me about the context of what you're referring to, what the indication for that X-ray would be or the situation for the baby at the time.

MYERS: You've spoken at length about this case and other ones without looking at any notes almost from memory, haven't you?

BREAREY: Yes.

MYERS: You can't remember the chest X-ray that I'm talking about when I ask a particular question about it?

BREAREY: Because my involvement with this case was an echocardiogram and a debrief afterwards.

MYERS: I'm simply --

BREAREY: I didn't make a statement about the actual care of the baby because I wasn't involved with the care of the baby other than the echocardiogram.

MYERS: Well, the reason I am asking you about this particular question about this particular baby is that you've been asked questions about a review and how you'd considered the case and you were giving us an answer that deals with many details, so I'm coming back to the detail about the case we're actually dealing with.

First of all, are you aware of what was on the chest X-ray? Are you aware of the pneumothorax that appeared on the chest X-ray?

BREAREY: Yes.

MYERS: We know that was identified on a chest X-ray that was taken at 11.57. So my question to you is: do you accept that a chest X-ray should have been taken sooner than 11.57? And I remind us all, the collapse is at about 9.40.

BREAREY: My answer is exactly the same as I told you before: I don't have enough clinical detail in my memory or on the screen in front of me to make a comment about that.

MYERS: All right. Did you examine what the ventilator settings were in the course of this resuscitation and intubation?

BREAREY: Well, I reviewed all the notes, including what the ventilator settings were over the course of the day, yes.

MYERS: Do you recall forming any view as to whether ventilator settings were too high; do you recall that?

BREAREY: I can remember, unusually, how the carbon dioxide levels on some of the gas were relatively low, considering the amount of resuscitation the baby had had and that [Dr B] on one occasion chose to reduce the ventilator settings.

MYERS: Do you recall at any point seeing the settings and considering they were too high at that point?

BREAREY: Well, I wouldn't say too high. They were at a level where you'd start to wean the pressures on the ventilator.

MYERS: Do you accept as a possibility that the pneumothorax in this case may have been caused by high ventilator pressure?

BREAREY: Well, that is one of the causes for a pneumothorax, but the size of the pneumothorax that I could see on the X-ray made it a relatively small pneumothorax that wouldn't have caused the baby's deterioration earlier.

MYERS: Do you accept that a delay in acting on a pneumothorax may cause it to become worse?

BREAREY: Well, if you're ventilating a baby and the baby has a pneumothorax, it can get larger. It depends what you call worse because clearly the baby was ventilating quite well at just after 12 o'clock from what I can remember, with a fairly good pH.

MYERS: Did you review the doses of adrenaline that were given, particularly with regard to the doses in the infusion?

Did you review that?

BREAREY: I would have done at the time. I haven't -- I'm not familiar with that at the moment.

MYERS: Do you recall at any point coming to a conclusion that the doses of adrenaline in the infusion were higher than they should have been? Did you ever reach that conclusion?

BREAREY: No.

MYERS: Did you --

BREAREY: I reviewed this case with another consultant, [Dr C], with a senior nurse, two senior nurses, a senior neonatal nurse, and none of us came to that conclusion, no.

MYERS: Do you accept that [Baby P]'s tragic death may be due to complications with pneumothorax?

BREAREY: I think that's highly unlikely.

MYERS: Is that something you considered?

BREAREY: Clearly, yes.

MYERS: It is?

BREAREY: Yes.

MYERS: You find that highly unlikely?

BREAREY: Yes.

MR MYERS: Thank you, Dr Brearey.

Re-examination by MR DRIVER

MR DRIVER: Your answers to the questions re pneumothorax, would you be better placed to expand upon those answers if you considered the X-rays that were referred to?

BREAREY: Yes.

DRIVER: Mr Murphy, could you please put up tile 574? An X-ray timed at 15.36. It's the radiograph. If we go down to the radiologist's analysis. You haven't --

BREAREY: If we go down to the X-ray with the pneumothorax in it before the chest drain is inserted, that would be helpful, please.

DRIVER: Of course. One moment. Could we go to tile T400, please?

BREAREY: It's worth -- I don't know what's been obviously discussed before, but there's two forms of pneumothorax that we can consider for neonates. And this is something we'd call a simple pneumothorax.

DRIVER: As opposed to?

BREAREY: A tension pneumothorax.

DRIVER: Thank you.

BREAREY: So a tension pneumothorax is a clear cause for sudden collapse in babies. And a pneumothorax is where there's a leak of the gas between the alveoli in the lung and the lining of the lung and that gas escapes and fills the gap between the lung and the chest wall. That's the simple pneumothorax that you can see on the screen in front of you today.

In some cases the gas continues to fill that space between the lung and the chest wall, so at a certain point it becomes under pressure and moves the central portion of the chest, which is the heart and the great vessels, over to the other side of the chest, and in doing so, under that tension, causes obstruction to blood vessels, airways and things like that, and can cause sudden collapse.

So tension pneumothorax is a medical emergency, which needs depressurising -- the tension that's built up, which is the life-saving manoeuvre before you insert a chest drain. So there is no evidence of tension pneumothorax on that X-ray. It looks like a simple pneumothorax and I can tell that because -- can I use the cursor?

DRIVER: Do you want to move the image or just point?

BREAREY: So you can see the trachea here following on from the endotracheal tube (indicating). The dark area here (indicating) is the trachea following along there.

That's the make(?) out of the trachea. And somewhere down here (indicating) it branches left and right in this direction. So that is following the normal course and you can see that this area here (indicating) is called the mediastinum in the central part of the chest and this area here (indicating) is the shadow for the heart. That's what in what we would call normal position in the chest so there's no shift in the mediastinum, no shift in the heart and no shift in the trachea. So this baby has a simple pneumothorax.

So the left lung is fully expanded and the right lung is partially expanded, so I wouldn't expect anything other than perhaps a mild degree of oxygen requirement and maybe a slight increase in respiratory rate, but certainly nothing that would cause a collapse of this baby. This baby doesn't have a tension pneumothorax and I wouldn't expect, looking at this X-ray, this to be the cause for the collapse of [Baby P].

DRIVER: Moving to another radiograph behind our tile 434. This was a portable machine at around, we think, 12.30 as best we can time it from the clinical notes.

BREAREY: There's a chest drain in situ, you can see going in on the right. The simple pneumothorax has resolved, the lungs have re-expanded on to the chest wall, and again the heart and the mediastinum are in the correct position.

DRIVER: Would you care to read the radiologist's analysis or are you content with your own analysis?

BREAREY: I am content it shows the resolution of the right-sided simple pneumothorax.

DRIVER: The final X-ray being the one that I first took your attention to. For the sake of completeness, can we go to that at our tile 574?

As mentioned earlier, this one, timed by the equipment at 15.36.53, what do you see there?

BREAREY: Again, a fully expanded left and right lung. Heart and mediastinum in the normal position. A different sort of chest drain in this time, which is called a pigtail catheter drain, which is inserted in a different way to the drain that you could see earlier. A similarly expanded chest wall.

DRIVER: You were asked questions by my learned friend as to whether you had considered whether the pneumothorax may have contributed to [Baby P]'s deterioration. I paraphrase.

Having reminded yourself of the X-rays, would you like to --

BREAREY: It's more likely that the pneumothorax developed as a result of being ventilated rather than a cause for any sudden deterioration off or on a ventilator. And clearly, it was identified and it was managed appropriately in terms of putting a chest drain in.

DRIVER: To paraphrase that, more likely a consequence of the response to the collapse as opposed to the cause of the collapses plural?

BREAREY: A consequence of the treatment for the collapse and it seemed to be managed appropriately, yes. It's recognised as a common complication for mechanical ventilation.

MR DRIVER: Does your Lordship have any questions for Dr Brearey.

MR JUSTICE GOSS: I don't, thank you.

MR DRIVER: It's a possibility.

MR JUSTICE GOSS: Possibility.

Dr Brearey, it's a possibility you will have to give evidence again. Thank you for coming this morning to give evidence. That completes it. You're free to go.

Please don't talk to anyone about anything to do with this case, any of the evidence, until it's all over, just in case you have to come back and give evidence again. Thank you very much for coming today.

(The witness withdrew)

Members of the jury, we'll break off until 2.05, please. Thank you very much.

(1.03 pm)

(The short adjournment)

(2.05 pm)

MR ASTBURY: My Lord, Oliver Rackham, please.

DR OLIVER RACKHAM (affirmed)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Could we begin with your full name, please?

RACKHAM: Oliver Rackham.

ASTBURY: Thank you. Your occupation?

RACKHAM: I'm a doctor.

ASTBURY: Dr Rackham, although I'm asking the questions and you're very politely directing your answers to me, if you can ensure, please, that you project your voice as far as the back row of the jury, then everyone who needs to hear you can hear you. Thank you.

You, I think, are or certainly have been employed as a consultant at Arrowe Park Hospital since as early as 2005?

RACKHAM: Yes, that's correct. Although I'm not in Arrowe Park at the moment.

ASTBURY: And your specialty, please?

RACKHAM: Paediatrics with a special interest in neonates.

ASTBURY: Thank you. I'm going to ask you, please, about your recollection of events back in 2016 and in particular June 2016. Were you at that time a consultant on the neonatal transport team?

RACKHAM: Yes, that's correct.

ASTBURY: Which we've heard was responsible for the Cheshire and Merseyside area; is that right?

RACKHAM: Yes.

ASTBURY: And known as the Connect North-west Team; is that right?

RACKHAM: Yes. Connect North-west was responsible for the whole of the north-west of England and I was part of the Cheshire and Merseyside team of that transport team.

ASTBURY: Was that a responsibility over and above your responsibilities at Arrowe Park as a consultant?

RACKHAM: It was part of the job as a consultant at Arrowe Park.

We were the consultants for the transport team.

ASTBURY: Thank you. You were asked, as part of the investigation in this case, as to your recollections of triplets named [Baby P], [Baby O] and [Baby R]. You were able to assist in that regard; is that right?

RACKHAM: Yes, that's correct.

ASTBURY: As it happens, and so you know, we've already heard that which you said about [Baby O] and the events on 23 June 2016 and your involvement in them, so I'm going to concentrate with you on 24 June, the following day.

Did you receive a telephone referral from a [Dr B] at the Countess of Chester Hospital at 10.35 in the morning on 24 June?

RACKHAM: Yes, that's correct.

ASTBURY: Was that, from her, a request for what you describe as an uplift to intensive care because of a post-natal collapse suffered by [Baby P], with bradycardia and possible sepsis?

RACKHAM: Yes, that's correct.

ASTBURY: Thank you. Insofar as what you understood to be the case at the time, were you given a history of what had happened so far that morning?

RACKHAM: I was given brief details by [Dr B] as in my statement.

ASTBURY: Were you told that [Baby P] had been well at birth but then needed support with some breathing, CPAP and subsequently Optiflow?

RACKHAM: Yes, that's correct.

ASTBURY: Thank you. And feeds had been started initially and well tolerated, but then he had become unwell and had gone both nil by mouth and started on antibiotics?

RACKHAM: Yes, that's what I'd been told.

ASTBURY: Were you told that that morning he'd suffered a collapse requiring intubation and ventilation?

RACKHAM: Yes.

ASTBURY: And were you told that metronidazole was added to his antibiotic regime?

RACKHAM: Yes, that's another antibiotic.

ASTBURY: Were you told in fact he had had two bradycardias which had necessitated the administration of adrenaline?

RACKHAM: Yes.

ASTBURY: And were you told that the laboratory tests which had been undertaken hadn't revealed any abnormalities in his kidney function or blood count, and his CRP, which we understand to be an infection marker, was normal?

RACKHAM: Yes, that's correct.

ASTBURY: Thank you. However, he was, I think you were told, very acidotic; is that right?

RACKHAM: That's correct, yes.

ASTBURY: That's a high level of acid within the bloodstream?

RACKHAM: Yes.

ASTBURY: He'd received fluid boluses and his condition had improved, were you told that?

RACKHAM: Yes, I was told that.

ASTBURY: And having initially been in oxygen at 50%, that had come back down to air, which we know is 21%?

RACKHAM: Yes, back to air, yes.

ASTBURY: Capillary refill time was normal?

RACKHAM: Yes.

ASTBURY: He was now, at the time of the call, moving, crying and breathing for himself again?

RACKHAM: He was.

ASTBURY: And were you told that for the purposes of vascular access, two intraosseous needles had been sited?

RACKHAM: Yes, that's correct.

ASTBURY: Did you, as a result of what you were told, advise [Dr B] to obtain further vascular access?

RACKHAM: Yes, that was my advice.

ASTBURY: And did you suggest that via an umbilical venous catheter?

RACKHAM: Yes, that was the advice given.

ASTBURY: Thank you. Did you suggest repeating abdominal and chest X-rays?

RACKHAM: Yes.

ASTBURY: Did you advise measuring and monitoring of [Baby P]'s blood pressure?

RACKHAM: Yes.

ASTBURY: And did you suggest that his blood gas be repeated once he was stabilised on the ventilator?

RACKHAM: Yes, that was the advice.

ASTBURY: And that sodium bicarbonate should be provided for his acidosis?

RACKHAM: Yes.

ASTBURY: Did you at that stage, after that call, start the process of arranging for a cot in the Liverpool Women's Hospital neonatal intensive care unit?

RACKHAM: Yes.

ASTBURY: Were you aware at the time of doing that that one baby would need to be moved out of a bed there first, which was anticipated to happen soon, it wasn't that they were being evicted, it was just that there was a bed about to become available?

RACKHAM: Yes, there was a bed going to become available.

ASTBURY: Was your intention, as soon as that took place, you would come and transfer [Baby P] to that bed?

RACKHAM: Yes, that's correct.

ASTBURY: You received a further call from [Dr B] at 12.45 that day; is that right?

RACKHAM: Yes, that's right.

ASTBURY: And you were told that [Baby P] had had a further collapse, requiring resuscitation and further doses of intravenous adrenaline?

RACKHAM: Yes, correct.

ASTBURY: Thank you. Before that, you were told he'd been in air with low carbon dioxide within his blood gas?

RACKHAM: Yes.

ASTBURY: And you were advised that a diagnosis had been made of a pneumothorax?

RACKHAM: Yes.

ASTBURY: But that had been drained initially with a cannula?

RACKHAM: Yes, correct.

ASTBURY: He'd been started on dopamine and adrenaline because of his poor perfusion and low blood pressure; is that right?

RACKHAM: Yes, that's right.

ASTBURY: He'd been given a half correction, as you describe it, of sodium bicarbonate?

RACKHAM: Yes.

ASTBURY: Can you just explain half correction for us, please?

RACKHAM: When the acid level is high in the blood, then it can be -- the situation can be improved by giving sodium bicarbonate, which is an alkali, the opposite of an acid, and we perform a calculation to estimate how much of that medicine would need to be given to improve the situation. We usually give half of the calculated amount as it can have some side effects, and so that's why we call it a half correction.

ASTBURY: Thank you. Then presumably the results are monitored before giving the other half if necessary?

RACKHAM: And then further doses would be recalculated depending on the effect of that first one.

ASTBURY: Thank you. Were you advised that it hadn't been possible to site an umbilical venous catheter but in fact two sites of intravenous access had been secured?

RACKHAM: Yes.

ASTBURY: Did [Dr B] tell you that she'd checked the position of the endotracheal tube, that there was good chest movement and colour change on the capnograph?

RACKHAM: Yes, that's correct.

ASTBURY: Confirming that carbon dioxide was being breathed out?

RACKHAM: Yes.

ASTBURY: And were you advised that the pneumothorax had resolved after the cannula had been inserted?

RACKHAM: Yes, that's what I was advised.

ASTBURY: Finally, were you told that they had already, the staff at Chester, given boluses of fluid and a correction of sodium bicarbonate and that broad-spectrum antibiotics had been commenced?

RACKHAM: Yes, that's correct.

ASTBURY: Thank you. So I think there was conversation about further correction of the high acid levels; is that right?

RACKHAM: I can't remember the exact details, but --

ASTBURY: Did you advise a slow infusion of sodium bicarbonate (overspeaking) --

RACKHAM: A slow infusion, that's correct (inaudible).

ASTBURY: And that the cannula be replaced with a formal chest drain?

RACKHAM: Yes.

ASTBURY: I'm told to ask you to speak up a little bit. Your answers have been fairly short so far.

MR JUSTICE GOSS: Would you mind pulling your chair closer to the desk? You'll be nearer the microphone. They have to hear it through the microphone, but it doesn't amplify your voice. If they can't hear it, then...

MR ASTBURY: I think the problem came when I asked about the slow infusion of sodium bicarbonate. Do you recall giving that advice?

RACKHAM: I did. I had to just be -- remind myself of what advice had come in what order about those because there were quite a lot of medicines given through that period and this slow infusion was the next step to try and improve the acid level on a more gradual basis rather than causing big fluctuations.

ASTBURY: At that stage did you recommend an echocardiogram to assess what you describe as the contractility of the heart?

RACKHAM: Yes. So when it is possible, then an ultrasound scan can be done of the heart which can help to guide the medicines that can help with the blood pressure, so that would look at things like how well -- how strongly the heart is beating and that's what we would call contractility.

ASTBURY: What was the purpose or what was it that you had in mind when you recommended that echocardiogram?

RACKHAM: That would be for the doctors caring for a baby to guide which choice of inotropes or blood pressure medicines they would use.

ASTBURY: Did you suggest at that stage dobutamine?

RACKHAM: Yes. So we had suggested that that might be the next most sensible medicine to add on to the medicines already being given.

ASTBURY: Thank you, doctor. So that deals with the call at 12.45. I think you received a third call at 13.45; is that right?

RACKHAM: I'm sorry, I can't remember the timings of each call.

ASTBURY: I don't think there's any dispute about that.

MR JUSTICE GOSS: That's the documented time.

RACKHAM: That's the time (overspeaking).

MR ASTBURY: You were advised, is this right, on that call that the changes that you had suggested regarding dobutamine had been started?

RACKHAM: Yes, that's right.

ASTBURY: And were you told the results of the echocardiogram?

RACKHAM: Yes, which was that the heart was functioning well.

ASTBURY: Okay. "Good contractility of the heart, not overfilled", is how you expressed it in your witness statement.

RACKHAM: That's correct.

ASTBURY: Did you make a recommendation as regards the cortisol level for [Baby P]?

RACKHAM: Yes, in some babies it might be something underlying where the body is not able to respond to illness and cortisol is the body's natural steroid. If that's very low then replacing it can improve the situation, so we suggested measuring that prior to giving some additional steroid medicine.

ASTBURY: Thank you. After that call, was your next step to travel to Chester?

RACKHAM: Yes. That was the -- we proceeded then to arrange for the transfer.

ASTBURY: Can we take it from that the bed had become available at Liverpool?

RACKHAM: Yes, it had.

ASTBURY: Thank you. We've heard from the notes that you arrived at about 3 pm at Chester. Explain to us, please, what happened when you arrived at Chester.

RACKHAM: So we'd brought another baby to Chester, handed the care of that baby over to the staff in the Countess of Chester neonatal unit, and once that was done and that baby was stable, proceeded across to the other side of the unit to get a handover about [Baby P] and what had happened since I'd last spoken to [Dr B] (last.

ASTBURY: We have heard a little bit about handovers. Was it your intention to take over at that stage [Baby P]'s management?

RACKHAM: So we would share -- we would share the care of a baby during the transfer, so while the baby is in the Countess of Chester, it's technically still under the care of Countess of Chester, but the decision-making is shared between the referring and the transferring team from that point, so we would be involved in the management together with the team in Chester.

ASTBURY: Thank you. Did anything happen during the course of that handover process?

RACKHAM: The handover of [Baby P]?

ASTBURY: Yes.

RACKHAM: During that time the doctor who was present was just securing the chest drain, which he had inserted, and it was at that point that [Baby P] deteriorated again, with a drop in his heart rate again.

ASTBURY: Thank you. Was there any impact on his saturations at that stage?

RACKHAM: Yes. His saturations dropped and that was what led us to realise that he needed resuscitation and that resuscitation process started pretty much as soon as I arrived.

ASTBURY: We've heard that one of the first steps in the resuscitation process is to check chest movement and air entry.

RACKHAM: Yes, that's correct.

ASTBURY: Do you recall whether there were any issues in that regard when it came to [Baby P] at that time?

RACKHAM: No, I don't recall any issues with that.

ASTBURY: Despite that good chest movement and air entry, was there any spontaneous respiratory effort from [Baby P]?

RACKHAM: No, there was no breathing effort from [Baby P].

ASTBURY: You describe his perfusion as poor; is that right?

RACKHAM: Yes, that's correct.

ASTBURY: And that you observed his heart rate in fact had fallen gradually over the next 1 to 2 minutes after the initial collapse?

RACKHAM: Yes, correct.

ASTBURY: And it was, as you've told us, when his heart rate dropped below 60 beats a minute, that's when chest compressions were started?

RACKHAM: Yes.

ASTBURY: We've heard that the resuscitation process is a process with set drugs, set intervals, and recognised practices and procedures; is that a fair summary?

RACKHAM: Yes, that's true.

ASTBURY: Who administered the resuscitation to [Baby P] that afternoon when you were there?

RACKHAM: That would have been the team from the Countess of Chester together with me and I would assume that the nurse who was doing the transfer with me as well, although I'm not sure how much of that I've written down, so I can't be sure. That would be standard practice.

ASTBURY: During the course of that resuscitation, did [Baby P] receive multiple doses of adrenaline and sodium bicarbonate?

RACKHAM: He did, yes.

ASTBURY: Do your records indicate that, during that interval between 15.15 and 15.54, he received seven doses of adrenaline?

RACKHAM: Yes.

ASTBURY: I think three doses of sodium bicarbonate?

RACKHAM: Yes.

ASTBURY: A dose of phenobarbitone?

RACKHAM: Yes.

ASTBURY: Just explain that drug to us, please.

RACKHAM: Phenobarbitone is a drug to treat fits or seizures and that was given as we had no explanation for why [Baby P]'s condition had changed and on the small chance that this was actually being caused by a seizure or a fit, he was given this medicine. It had no effect.

ASTBURY: You were there?

RACKHAM: Yes.

ASTBURY: We've heard of your qualifications and experience. Was there anything that you could see as these events were unfolding as to any other possible cause for this collapse?

RACKHAM: We didn't think it was a seizure, it was just that it's one treatable cause for a baby who deteriorates. And there was no obvious cause, it didn't fit with any obvious reason for [Baby P] to have deteriorated from the condition he was in before.

ASTBURY: You have noted he received a fluid bolus and a dose of atropine in addition.

RACKHAM: Yes, that's correct.

ASTBURY: Atropine, please?

RACKHAM: Atropine is given in babies who have a slow heart rate as it has an effect on the nerves that control the heart's regular beating rhythm and can speed it up in certain situations.

ASTBURY: Were you satisfied that the intravenous lines were working well at that stage?

RACKHAM: Yes, they were working well throughout.

ASTBURY: And was [Baby P] continually reassessed throughout the resuscitation?

RACKHAM: He was continually monitored and being reassessed by the team throughout.

ASTBURY: Bearing in mind what you told us about the lack of obvious cause for what was going on, were there conversations ongoing between everybody present?

RACKHAM: The conversations were going on throughout the resuscitation as to what might have caused this collapse and whether any other different treatment should be -- could be administered.

ASTBURY: You mentioned airway and breathing or certainly airway and air entry at the start of the resuscitation. Did anything change with the ventilation and the air entry?

Did they deteriorate or remain good?

RACKHAM: They remained good. There was no problem with the airway.

ASTBURY: Were you satisfied that, in those circumstances, air entry was perfectly good?

RACKHAM: Yes.

ASTBURY: Was there an intermittent and audible heartbeat?

RACKHAM: Intermittently there was a heart beat audible, yes.

ASTBURY: And what about any ECG trace, please?

RACKHAM: There was intermittently a slow and irregular heart trace.

ASTBURY: Okay. You've described and confirmed earlier that this resuscitation went on between 3.15 and 3.54, so 39 minutes according to that note. Did there come a point during this prolonged resuscitation when you felt you had to speak to [Baby P]'s parents?

RACKHAM: Yes, that's right. I think I've recorded that I spoke to [Dr B], discussing that we ought to speak to [Baby P]'s parents to discuss the futility of any further resuscitation.

ASTBURY: Okay. And was resuscitation in fact stopped at approximately 4 o'clock?

RACKHAM: Yes, that's correct.

ASTBURY: During the course of those conversations that you've told us about, did anyone successfully identify the cause of this collapse or --

RACKHAM: No, there was no cause identified and we did not have a reason to explain the collapse.

ASTBURY: After [Baby P]'s passing, did a debrief take place?

RACKHAM: Yes, that's correct.

ASTBURY: Where did that take place, please?

RACKHAM: It took place in a small room that formed part of the neonatal unit.

ASTBURY: Do you happen to recall who was present at the debrief?

RACKHAM: I can't recall, other than [Dr A], who I've mentioned in the statement. I don't recall who else was in the debrief but it would have been the team. The purpose of the debrief is to make sure there was nothing that we think we've missed, but in particular to look after the well-being of the staff involved in it.

ASTBURY: Any conclusions reached as a result of that debrief?

RACKHAM: There were no conclusions as to any of the clinical questions as to what had happened to [Baby P]. But just that we felt we had carried out the resuscitation well and in accordance with all the appropriate guidelines.

ASTBURY: Thank you. Other than participating in that debrief, did you have any further dealings with [Baby P] after that stage?

RACKHAM: I didn't, no.

ASTBURY: Were you informed by [Dr B] that she would be informing the coroner?

RACKHAM: Yes.

ASTBURY: And that a post-mortem would be discussed?

RACKHAM: Yes.

ASTBURY: Before you left Chester, did you have then cause to discuss the situation with [Baby R]?

RACKHAM: Yes.

ASTBURY: Were you invited to transfer [Baby R] to the bed that was now available at Liverpool?

RACKHAM: Yes, that's correct. We had two unexplained deaths and given that we didn't know why that had happened, we felt it was most sensible to observe him in an intensive care unit.

ASTBURY: Did you examine [Baby R] at that stage of the day?

RACKHAM: Yes, I did.

ASTBURY: Do you remember roughly what time this would have been?

RACKHAM: I can't recall, I think the time's in my statement.

ASTBURY: Did you find that [Baby R] was on high flow humidified oxygen?

RACKHAM: Yes.

ASTBURY: Did you find him to be stable?

RACKHAM: Yes.

ASTBURY: Was he pink and well perfused?

RACKHAM: Yes.

ASTBURY: Alert and active with normal tone?

RACKHAM: Yes.

ASTBURY: Did you find that his chest was clear but there was minimal recession?

RACKHAM: Yes, that's right.

ASTBURY: I think you described that as a mark of increased effort of breathing?

RACKHAM: Yes.

ASTBURY: But common to premature babies?

RACKHAM: Common to premature babies and the reason he would be receiving the high flow.

ASTBURY: His saturations were at 100%?

RACKHAM: Yes.

ASTBURY: He had no heart murmur and his femoral pulses were good?

RACKHAM: Yes.

ASTBURY: You examined his abdomen, which was soft and not distended?

RACKHAM: Yes.

ASTBURY: Bowel sounds were normal?

RACKHAM: That's correct.

ASTBURY: Taking all that into account, you reached the view that he was stable for transfer?

RACKHAM: Correct.

ASTBURY: And that's what you then undertook?

RACKHAM: Yes.

ASTBURY: I think you've recorded that transfer was uneventful.

RACKHAM: Yes, uneventful.

ASTBURY: And on arrival at Liverpool, did you go through the same sort of process that we've heard, the handover to the staff that then take over the care of [Baby P]?

RACKHAM: Yes.

ASTBURY: Sorry, [Baby R].

RACKHAM: We would then handover to the Liverpool unit staff.

MR ASTBURY: Thank you. Dr Rackham, thank you, I have no more questions. If you could wait there, please.

Cross-examination by MR MYERS

MR MYERS: Dr Rackham, just a couple of questions first about the contact with [Dr B]. In fact, I'm going to ask if we can put up the notes that you've got that were taken and they're at page 24025. I don't think they're on our sequence of events but they can be put there.

This is just to prompt your memory, if it assists, on a couple of points. Are these the notes that you take as events unfold so you have a record of them?

RACKHAM: Yes. These would be notes that would be taken at the time of referral.

MYERS: Right. There's only a couple of points I'm going to, but they are here if they're required.

We can see in the box, top left, if we enlarge that top box:

"Referring unit: Chester. Name of referrer: [Dr B]."

Then the date of referral is 24 June 2016 at 10.35.

So that is where you have the record of the phone call from [Dr B] at 10.35, isn't it?

RACKHAM: Yes.

MYERS: I'm going to scroll down actually. You take -- as the call comes in, you take a history, don't you, a brief history of relevant readings at that point; is that correct?

RACKHAM: That's correct, yes.

MYERS: I'm not going to go through all of them, they're on the form. Can we go to the next page, please, if we scroll down. Page 24026.

It's just the lower part where we have "Clinical examination findings and management plan". If you go there, please. Again this is just going back to some of the points you've already told us, Dr Rackham.

The clinical examination findings set out what you've been told as to how [Baby P] was presenting and what had happened; is that correct?

RACKHAM: Yes, that's correct.

MYERS: It's the management plan I just want to go to. Is the management plan setting down advice that you give back to [Dr B]?

RACKHAM: That's advice, yes, to [Dr B].

MYERS: So this is where we have recorded that at this phone call you advised her to put in a UVC, and to get abdominal and chest X-rays; is that correct?

RACKHAM: Yes.

MYERS: And "get BP" is "get blood pressure"?

RACKHAM: Yes.

MYERS: Then is that, "[Something] gas once on ventilator"? Is it "review"?

RACKHAM: "Review gas once on ventilator."

MYERS: What's the next bit, please?

RACKHAM: "Correction of bicarbonate."

MYERS: Right. Then:

"We will arrange for a bed in Liverpool, which will mean moving another baby first, but [something] has stabilised."

RACKHAM: "... [Baby P] has stabilised."

MYERS: And?

RACKHAM: And:

"Come and transfer him as soon as this is arranged."

MYERS: Thank you. The UVC is something you advised to improve access into [Baby P]'s system for any tests or any medication that had to be given; is that correct?

RACKHAM: Yes. An umbilical venous catheter is a large -- it's a large cannula that goes in through the umbilical vein, into the belly button, and it means it's easier to administer drugs and fluids when it's possible.

MYERS: Where it says abdominal X-ray and chest X-ray, which is AXR and CXR, what's the purpose of taking those?

RACKHAM: Those would be to see if we could see any diagnosis that would suggest the reason for the collapse or any other treatments that might need to be done.

MYERS: Are those steps that should be taken as soon as possible in the circumstances?

RACKHAM: They would need to be -- it would depend whether the umbilical venous catheter was successful. If that was successful then you would do it once that was in. So it would be done after that attempt, probably.

MYERS: So far as the abdominal X-ray and chest X-ray are concerned, they are things that should be done as quickly as possible so you can see what the situation is?

RACKHAM: They should be done as soon as can safely be done.

MYERS: All right. I'm going to move down now, please, to page 24027, which picks it up from the second phone call at 12.43. So Mr Murphy, if you could collapse that and move down to 24027.

We're just looking at the upper note. The first part. Thank you. This is the second call at 12.43.

That's correct, isn't it, Dr Rackham?

RACKHAM: Yes.

MYERS: A call from [Dr B]:

"Further collapse requiring resuscitation and further doses of IV adrenaline."

Is that:

"Was in air with low CO2 before that"?

RACKHAM: Yes.

MYERS: Then it says:

"Pneumothorax. Cannula [is that 'inserted']"?

RACKHAM: Inserted.

MYERS: So certainly 12.43 is the first time that you, on that phone call, hear of the pneumothorax; is that correct?

RACKHAM: Yes.

MYERS: You set down the -- is it pancuronium and adrenaline?

RACKHAM: Dopamine (overspeaking) so 20 is the numerical dose of the dopamine and 1 of adrenaline.

MYERS: Looking down a couple of lines below that, we see it says, "UVC not possible", and we know there was alternative access attempted.

RACKHAM: Yes. So a UVC is not always possible and it's something that we usually put in on the day of birth. It's easier to do on the day of birth. It becomes less likely to be able to be done following on from that.

MYERS: Just a couple of lines below that it says:

"Cold light negative after cannula inserted."

Can you see that?

RACKHAM: Yes.

MYERS: Is that the first reference certainly that you have in your notes to a cold light having been used?

RACKHAM: That's the first reference in my notes.

MYERS: And no recollection of a suggestion of the cold light being used before the pneumothorax is identified?

RACKHAM: No, I don't think there was any suggestion of pneumothorax leading up to that. It's less useful the more mature the baby, so in the most extreme preterm babies cold light is the most useful.

MYERS: Right. In any event, I was just asking when you heard about it and that's the first time there was any reference to cold light?

RACKHAM: From my notes, yes.

MYERS: All right, thank you. That's all I wanted to confirm from the notes.

MR JUSTICE GOSS: A very small point, Mr Myers. You've said 12.43. Whilst we have still got the note up, it may be me, I may be misreading it, I think it may be 12.45.

RACKHAM: It is 12.45 on my note.

MR JUSTICE GOSS: Only 2 minutes' difference.

MR MYERS: You're quite right. I'd looked at that and taken it as a 3. It's my fault, Dr Rackham. 12.45.

MR JUSTICE GOSS: You confirm that's --

RACKHAM: It is 12.45.

MR MYERS: Thank you.

We can take the notes down. They're there if we need to go back to them for any reason.

Did you arrive at the Countess of Chester round about 3 o'clock? I'm not asking you to be precise.

RACKHAM: Yes, I think that's around about the time.

MYERS: When you got there, were there already a number of doctors present attending to [Baby P]?

RACKHAM: We didn't go straight to [Baby P] because we were -- as I have said, the care is gradually handed over and we were caring for the other baby who we'd brought and there were doctors already with [Baby P] who, once we had done the handover, we went to see. They had been inserting the chest drain and were fixing it in place.

MYERS: When you went there, in effect, did you take over the lead role of what was taking place at that point?

RACKHAM: The leadership stays between the consultant in the referring unit and the transferring consultant, which would have been me. So it's a gradual handover of that care. Decisions will be made together between the two of us. I think for the actual resuscitation itself, I probably was the lead of the resuscitation at that point.

MYERS: Okay. The debrief that you told us about, did that take place immediately after [Baby P] had died or was it an hour or two later?

RACKHAM: It was fairly much straight afterwards. The purpose is to ensure that there were no glaring things that we'd missed that we could have done differently and also for staff to have a chance to look after their well-being and for us as a team to look after each other.

MYERS: Yes.

RACKHAM: And then a later debrief would be something that would be done in more detail, looking into the details of a case.

MYERS: Do you recall passing comment on how people had conducted themselves during the resuscitation?

RACKHAM: I recall, although it isn't documented anywhere, I recall saying that -- I think the conclusion of the discussion we'd had was that the resuscitation had gone smoothly and that we'd followed the best practice guidance that there is. I don't recall commenting on any individuals.

MYERS: You have no recollection of individuals?

RACKHAM: I don't have any recollection of commenting on anyone's individual --

MYERS: All right. With [Baby R], we know that he was transferred to -- is it Arrowe Park? To Liverpool Women's Hospital.

RACKHAM: I think he went to Liverpool Women's Hospital.

MYERS: Liverpool Women's Hospital. And that was so that -- it seemed sensible, you say, to observe him on the intensive care unit; is that correct?

RACKHAM: That was correct, given that we'd had two unexplained deaths with no cause in babies who we would have, at that point, expected to have survived and done well, it was felt that, in case there was something else going to happen to [Baby R], it would be better if he was able to be in the intensive care unit already.

MYERS: Yes. Just to be quite clear about that, what you're getting at is there's three of them and two of them have experienced a significant problem and there's no obvious explanation, then the best place for [Baby R] to be is in the intensive care unit, to be observed, to see if there's any underlying issue that arises?

RACKHAM: Yes, that's correct.

MYERS: So for that reason he was transferred to Liverpool Women's Hospital?

RACKHAM: Yes.

MYERS: I'd just like you to help me, if you can, Dr Rackham, with some questions about adrenaline and the use of adrenaline. If I'm asking things that go beyond what you're comfortable saying, please say. If in fact there's no concern attached to what I'm saying, please say. But I'm asking for your expertise with this if you can give it to us.

RACKHAM: Okay.

MYERS: We know that [Baby P] was given adrenaline, both by individual boluses and intravenously.

RACKHAM: Mm.

MYERS: You are aware of that, are you?

RACKHAM: Yes.

MYERS: The boluses that he received are set out on what's called a dose chart. I don't need to go there unless anyone wants to see it but it is at our tile 385 if anyone wants to see it. In

fact, we'll put it up anyway since I've referred to it. Tile 385, please, Mr Murphy.

We'll just have a look at that, please. Are you familiar with charts that look like that?

RACKHAM: Yes.

MYERS: And we've got 16 doses of adrenaline between 9.55 and 15.54. That relates to boluses of adrenaline.

The infusion is recorded on a different chart and that's what I'm going to take us to next and I've got questions about that, please, Dr Rackham.

Could we put up tile 386, please? I'd be grateful if you take a moment, before I go through this with you, to take a look at it. As you do that, can I ask, is this a type of sheet or chart that you're familiar with?

RACKHAM: Yes. There are various charts that would do the same thing.

MYERS: And you're familiar with the doses for intravenous adrenaline that would routinely be given to a baby in situations like this, are you?

RACKHAM: Yes.

MYERS: Just to confirm the details, we can see the patient's name there on the top left is -- [Baby P] it's got there, we know it's also [Baby P]. It also records his weight, just over 2 kilograms. Weight is significant with adrenaline, isn't it, because when calculating the doses, one is often looking at what it would be per kilogram per hour, so you have to bear in mind 2 kilograms makes that different?

RACKHAM: Yes.

MYERS: Would it be usual with a neonate to start, if you're using an infusion of adrenaline, with between 0.05 and 0.1 micrograms per kilogram per minute?

RACKHAM: Yes.

MYERS: That's the sort of standard range, isn't it?

RACKHAM: Yes.

MYERS: I'm going to go through the maths here and see if you can help us. If we start with where it says "Drug: adrenaline". You see it says "double" -- and I'll ask you that in a moment.

But "Drug quantity: 3 milligrams", and is that "Dilutant: sodium chloride"?

RACKHAM: Yes.

MYERS: "Final volume: 50ml."

Underneath that it says:

"Final concentration of insulin."

Do you see that?

MR JUSTICE GOSS: "Infusion."

MR MYERS: Sorry, "Final concentration of infusion". Can you see that?

RACKHAM: Yes.

MYERS: And that's 60 micrograms per litre?

RACKHAM: Yes.

MYERS: So that tells us that an infusion has been made up of 60 micrograms per millilitre; is that correct?

RACKHAM: Yes.

MYERS: The starting rate, if we just move two boxes right, is 2ml an hour; is that right?

RACKHAM: Yes.

MYERS: So 60 micrograms per millilitre, if it's 2ml per hour, that means that there would be 120 micrograms per hour --

RACKHAM: Yes.

MYERS: -- because it's double the 60 micrograms. [Baby P] weighed about 2 kilograms, didn't he?

RACKHAM: Yes.

MYERS: So if we've got 120 micrograms per hour, that would mean he would be receiving, if he is 2 kilograms, 60 micrograms per kilo per hour, do you agree --

RACKHAM: Yes.

MYERS: -- with this dilutant? Now if he is receiving 60 micrograms per kilogram per hour, that means when we get down to minutes, it's 1 microgram per kilogram per minute? 60 micrograms in an hour would be 1 microgram per kilo in a minute. So far so good?

RACKHAM: Yes, I think so.

MYERS: That's at a rate of 2ml per hour. So just pausing there, if a neonate like this would normally start at 0.05 to 0.1 micrograms per kilo per minute, in fact [Baby P] starting at 1 microgram per kilo per minute, that's sort of at least 10 times the normal starting dose, isn't it?

RACKHAM: I think so, I would have to sit and double-check these, but I'm sure you already have. But from what you've taken me through, that would seem to be right.

MYERS: Yes.

RACKHAM: The starting -- the dose range would go up to 1 microgram or possibly 1.5 micrograms per kilogram per minute.

MYERS: So on the figures we have here, this concentration of infusion at this rate, it equates to 1 microgram per kilogram per minute, which is significantly higher than the normal starting dose, isn't it?

RACKHAM: It would not be that unusual to start at a high dose for a couple of reasons. One is if you start at very low rates, it takes quite a long time for the medicine to get from the syringe into the baby itself. And the other is you might want to get an improvement and then reduce. But from what you've said there -- I mean, the dose that's prescribed is 0.5 micrograms per kilo per minute.

MYERS: I'm going to come to that in a minute in fact.

RACKHAM: It didn't look like they were wanting to start at the very lowest dose.

MYERS: No. What I started with is in fact the way this infusion has been made up works out at 1 microgram per kilogram per minute, which in itself is a high dose, isn't it?

RACKHAM: It's a standard kind of dose, but yeah, at the higher end of the range.

MYERS: So I want to be clear about that. I'd asked you if it's normal to start at 0.05 to 0.1 micrograms per kilogram per minute.

RACKHAM: To start? Sorry, I'd heard 1 because that's -- it is a very wide dose range that we use.

MYERS: The usual starting one is 0.05 to 0.1, isn't it?

RACKHAM: 0.1. That -- I think the -- how it's used is very variable between times. People usually would start at a very low rate, such as you are describing, but not always.

MYERS: Let me just stick with that for a moment because that's what I was asking you. Normally, the upper end of the starting rate is 0.1 micrograms per kilogram per minute isn't it?

MR JUSTICE GOSS: Sorry, the upper range?

MR MYERS: The range is -- 0.05 to 0.1 is the starting range usually, 0.05 to 0.1 micrograms per kilogram per minute.

That's right, isn't it, Dr Rackham? That's the normal starting dose?

RACKHAM: I think that would be -- most people would start off at the lower end like that, yes.

MYERS: I am just making the observation at this stage that the way this infusion has been made up means we've actually got something that would be 10 times that starting dose.

RACKHAM: It'd be 10 times a starting dose of 0.1. It looks like it's twice the intended starting dose.

MYERS: So you are ahead of me now. But where I was going next was where we have the first dose. It says 11.30. We've had some evidence here which means the first dose may have started a little later than that, but that's not the reason I'm going to this. If we go down, the intended dose for that first dose was 0.5 micrograms per kilogram per minute, wasn't it?

RACKHAM: Yes.

MYERS: As it happens, the dose we've got going through, if these calculations are right, is 1 microgram per kilogram per minute --

RACKHAM: Yes.

MYERS: -- which is twice what that dose is meant to be; is that right?

RACKHAM: Yes, I think that's -- I mean, I'm doing mental arithmetic in a far from ideal situation.

MYERS: I invite anyone to check this -- and I'm sure it will be -- but let me go through it -- not as we're going along. If there's any error it can be corrected.

MR JOHNSON: This wasn't dealt with with the doctor who was actually there, who was [Dr B]. Insofar as we can tell, we haven't had any advance notice of this, it's something we would have dealt with yesterday with [Dr B]. It's clearly something this witness is uncomfortable dealing with on the hoof.

MR JUSTICE GOSS: Yes.

RACKHAM: The dose of starting at 0.5 is a reasonable -- a very reasonable dose. It takes quite some time for the drug to reach the patient, depending on the length and diameter of the tube. Starting at a higher dose would not be seen as an error. Administering a dose different to the dose that you had intended to would be an error, but that doesn't imply harm.

MR MYERS: I should add, in fact, the question of adrenaline has arisen in various ways and we'll hear from Dr Bohin shortly and it features there, so it's not an unexpected topic. If there's any suggestion there's a disadvantage to Dr Rackham in dealing with in, and I did confirm this is something he is used to dealing with, then of course he should have time to deal with it.

MR JUSTICE GOSS: I think it is just the arithmetic. As I understand it, Dr Rackham is just saying: I can't do the calculations at the speed that you're asking me to.

I think perhaps we could actually cut through to what he then went on to say about, well, let's assume your calculations are right, let's work on the basis, Dr Rackham, subject to that qualification, that -- and just accept that the arithmetic that's being put to you is right. Then you ask the questions, Mr Myers, on that basis.

MR MYERS: We'll do that. I have to say, the arithmetic took me some time as well. It's not something of a moment, I appreciate that, and that's all I was asking to have checked if there's any question about it.

But if it's right that we're dealing with a double concentration of the intended dose, that's not a desirable situation, is it?

RACKHAM: It's not desirable. There are situations where you would start, as I've described, at 1 microgram per kilogram per minute to get a rapid response and get the medication into the patient. But usually, we would start at a lower dose, such as -- 0.5 would be a very reasonable place to start.

MYERS: And if we move across to the second or the change of infusion, the rate is increased, it says here, at 12.47, to 4ml per hour; do you see that?

RACKHAM: Yes.

MYERS: Which means the dose then goes up to 1 microgram per kilogram per minute. But of course with this infusion, that would make it 2 micrograms per kilogram per minute --

RACKHAM: Yes.

MYERS: -- which again means, I'm suggesting to you, it's higher than the intended dose, if that's right?

RACKHAM: It's higher than the intended dose.

MYERS: Now, can I just ask you about the consequences of adrenaline or too much adrenaline, if you're able to deal with this, and I don't say that to be rude.

RACKHAM: So the effect of giving more adrenaline than you'd expect would be an increase in the side effects, so that will be a rise in the heart rate and possibly atypical rhythms, so the rhythm may become -- yes, not normal.

MYERS: And can it cause blood pressure to rise?

RACKHAM: Well, the intended purpose of the adrenaline in this situation is to get the blood pressure to rise.

MYERS: So if there's an excess of adrenaline, it can lead to a greater rise in blood pressure than expected or than anticipated?

RACKHAM: So it could do. I mean, you asked me to comment on this so I'm assuming that the blood pressure did not rise and that's why the dose was put up so there had not been an excessive rise in blood pressure with that dose of adrenaline.

MYERS: Can adrenaline cause blood vessels to constrict?

RACKHAM: It can.

MYERS: Can an excess of adrenaline lead to lactic acidosis?

RACKHAM: It can do, yes.

MYERS: And is it something you're familiar with, Dr Rackham, that high doses of adrenaline can have the adverse effect of lactic acidosis?

RACKHAM: They can do, yes.

MYERS: This is something which is dealt with by one of the experts -- I'm not saying you're not an expert, Dr Rackham, but I'm aware of the fact that there's only so far perhaps I should go with Dr Rackham. Therefore I'm content to leave the matter at that, my Lord, and deal with it with the expert who's touched on this, which is one of the reasons we go to this. That's probably as far as I can properly go with Dr Rackham.

MR JUSTICE GOSS: Altogether?

MR MYERS: Yes, just to establish the doses, as we say they are, and potential adverse consequences, but I appreciate he then hasn't performed an exercise in the context of this count in this case to form an opinion on that. But we should be hearing from a witness who has given an opinion on that and that's why I've raised it now.

MR JUSTICE GOSS: Yes. Thank you.

MR ASTBURY: My Lord, I don't feel really in a position to re-examine on the mathematics, so if necessary and if it's possible, can I reserve that particular topic for another time? There are two matters, I think, which arise which I'd like to clarify with Dr Rackham.

Firstly, you qualified the insertion of a UVC with the words "if possible". Is it always easy to site a UVC in a baby who is suffering these sort of difficulties?

RACKHAM: A UVC is -- at the time of birth is usually relatively straightforward to insert. Its final position is not always possible to be -- you can't always direct exactly where it is going to end up and very often they don't end up in the correct position.

From the time of birth the umbilical cord starts to change and it becomes less and less easy to insert an umbilical venous or arterial catheter from -- so after the first day of life it becomes more difficult to do.

MYERS: And as far as the X-ray is concerned, would you expect the practice to be to delay the X-ray until such time as either (a) the UVC has been successfully fitted or (b) the medical staff have given up on that prospect and taken another route?

RACKHAM: I think usually, if you know you're going to be put in an umbilical catheter you would insert that and then do the X-ray --

MYERS: Okay.

RACKHAM: -- to minimise the number of X-rays that a person is exposed to.

MYERS: I was about to say. Is there a restriction on frequent X-rays, unnecessary X-rays of a neonate in these circumstances?

RACKHAM: So we would always want to minimise the number of X-rays that are done. There's no restriction. We would do as many as are felt to be necessary, but we would always balance the risk between frequency of doing them and minimising the number of X-rays.

MYERS: Thank you.

RACKHAM: And we would have to justify to the X-ray department why we were asking for fewer or more X-rays.

MYERS: Thank you.

The second topic is this: you were asked about the adverse effects of adrenaline, one of which, I think my note was, is an increased heart rate. During your time with [Baby P] from 3.00 or 3.15 onwards and during his resuscitation, did you see any evidence of, for example, an increased heart rate?

RACKHAM: No, he had a low heart rate throughout my time there.

MYERS: During the discussions with the other clinicians who were in your -- a similar position to you, did anyone else identify those type of symptoms that you'd associate with too much adrenaline?

RACKHAM: I was not given any information that he had side effects of too much adrenaline, which would be fast heart rate, excessively high blood pressure or an arrhythmia, an abnormal heart rhythm.

MR ASTBURY: In fact, you have told us about what you saw in respect of each of those features. Thank you.

I have no more questions. Does my Lord have any questions?

Questions from THE JUDGE

MR JUSTICE GOSS: No, I don't think so -- well, I'm now going to contradict myself. Just this, so that I'm clear in my mind. I know that Mr Myers has, for good reason, not pursued in detail your opinion in relation to the administration of adrenaline. But can I ask you, have you in clinical practice over the years administered adrenaline to neonates?

RACKHAM: Yes.

MR JUSTICE GOSS: So you are familiar with what is within and without the reasonable range?

RACKHAM: Yes.

MR JUSTICE GOSS: Now, looking at these figures, accepting Mr Myers' calculation that what is actually said to be the intended rate was in fact half of what was actually administered -- sorry, I've understood it correctly, haven't I, Mr Myers?

RACKHAM: Double.

MR JUSTICE GOSS: Half of what was intended. It's double what was intended?

RACKHAM: Yes.

MR JUSTICE GOSS: All right. So it's double what was intended. Now, assuming that was the case, these features of excessive amounts of adrenaline that have been described, would these be features that one would expect to see?

RACKHAM: Yes, and they would be seen quickly. [Baby P] would have been on a continuous monitor, so his heart rate would be being monitored continuously and you would see an increase -- an abnormally high heart rate very quickly if these adverse effects were seen. It's a very rapidly acting drug.

MR JUSTICE GOSS: Right.

MR ASTBURY: How quickly would it be seen?

RACKHAM: I mean, we would see effects within sort of 10 or 15 minutes if not sooner.

MR JUSTICE GOSS: All right.

MR ASTBURY: Thank you, my Lord, I have nothing else to ask.

If no one else has, may the witness be released?

MR JUSTICE GOSS: Yes, as far as I'm concerned.

Whether in relation to the mathematics whether anyone is going to want Dr Rackham to undertake the calculation or not, I'll leave to you.

RACKHAM: Do you want me to do the calculation?

MR JUSTICE GOSS: It's not for me to say.

MR ASTBURY: We'll consider it afterwards, thank you.

MR JUSTICE GOSS: But as far as I'm concerned, that completes your evidence at this stage. Whether you have to come back to give further evidence may depend on what instructions you receive in relation to the calculation and the outcome of your fulfilling those instructions.

All right? You'll understand what I'm saying.

RACKHAM: Yes.

MR JUSTICE GOSS: Thank you very much for coming. Please don't talk to anyone about this case until it's all over, just because of the possibility of you having to come and give further evidence.

Thank you for coming today.

(The witness withdrew)

MR JOHNSON: We are going to move on, my Lord, to the experts now, but now may be the best time for a break.

MR JUSTICE GOSS: Yes. We'll have the break.

MR JOHNSON: I think it's unlikely that we'll manage to deal with both experts this afternoon.

MR JUSTICE GOSS: All right.

MR JOHNSON: I can just make enquiries about that calculation and see how we can deal with that within the context of what's to come.

MR JUSTICE GOSS: Yes, all right. Thank you very much.

Ten minutes, thank you.

(In the absence of the jury)

MR JUSTICE GOSS: I'm assuming that the noise from outside had nothing whatsoever to do with this case. It's still going on. Once that's clarified, when we do resume, on the basis that that's the case, I will make clear that it's to from another court and do with another case altogether.

Ten minutes then, please, thank you.

(3.05 pm)

(A short break)

(3.15 pm)

MR JOHNSON: My Lord, I don't know whether your Lordship's had the message, but the noise from outside was entirely unconnected to these proceedings. Just in terms of the way forward arising out of adrenaline, Dr Bohin's already checked the arithmetic and she's going to make a statement dealing with that and indeed with the consequences of a dose -- of the dose that was given in the context of the evidence as it has been established.

She is making that statement now or overnight, it'll be served in good time for tomorrow and we will call her in the morning to deal with that and the balance of her evidence.

MR JUSTICE GOSS: Fine. Thank you. That seems sensible.

(In the presence of the jury)

MR JUSTICE GOSS: The noises that were a bit disturbing at the end of the last witness's evidence from the public area outside are related to a case in another court. It does sometimes happen, people get emotional about things and can't control themselves.

DR DEWI EVANS (recalled)

Examination-in-chief by MR JOHNSON

MR JOHNSON: Welcome back, Dr Evans. Would you just confirm for the sake of the recording your identity?

EVANS: Dr Dewi Evans.

JOHNSON: Thank you. I'm going to turn to [Baby P]'s case in a second. But I'm just going to sweep up a detail, if we may, from

the evidence that you gave a week ago, on 15 March, concerning chest compressions.

EVANS: Yes.

JOHNSON: Just to put this into context for the jury, this relates to questions you were asked in cross-examination about the interrelationship between chest compressions and the liver injury that was found at the post-mortem examination of [Baby O].

I'm going to start by reminding you of the questions you were asked or the propositions that were being put to you and your responses and then I'm going to ask you a question or two about that.

EVANS: Okay.

JOHNSON: So Mr Myers put to you last Wednesday this:

"Question: I'm going to suggest that you well know chest compressions are performed just in the area or just below the sternum, almost over the area where the liver is or very close to that. That's where they're performed, isn't it, Dr Evans?

"Answer: I'm -- I know exactly where it's performed and I don't know any baby who was resuscitated by experienced people who either died and where the post-mortem showed liver trauma as we described here and I know of no case where babies were resuscitated successfully where cardiac compression was required but where subsequent investigation noted the liver haematoma as described here, okay? So I don't know any of that in any case."

And then you were asked again:

"Question: What I just asked you -- it was a simple question, I apologise for having to repeat it -- was that chest compressions on a baby are performed in the area over -- just below the sternum, around the sternum or over and very close to where the liver is. That's what I asked you. Are you going to answer that?"

"Answer: No, it's over the top of the sternum. You're pointing in the wrong direction. It's over here [and you indicated] and the liver is down here."

And you indicated down here.

Now, since you were asked that series of questions, have you consulted the guide issued by the Resuscitation Council UK?

EVANS: I have.

JOHNSON: Which has the title "Newborn Life Support"?

EVANS: Yes.

JOHNSON: If Mr Murphy would help, please, does that deal specifically with this point?

EVANS: It does.

JOHNSON: If Mr Murphy would help by putting the text on screen, please. This is the publication. That's the title sheet; is that right?

EVANS: Yes. The front page, yes.

JOHNSON: Then do we get to a page within the text, which is page 63?

EVANS: Yes.

JOHNSON: There is a heading, "Where should I press?"

EVANS: Yes.

JOHNSON: Can you read for us what it says, first of all, please?

EVANS: And I'll describe it as well:

"Compress the sternum over its low third. If you press too high on the sternum, the heart is not compressed; if you press too low, you risk damaging the liver. Place your thumbs or fingers on the sternum just below an imaginary line joining the nipples."

JOHNSON: Yes. Is that what you were saying was the correct way to do it?

EVANS: Yes. They use thumbs in -- one of the doctors said that the thumb is used for compression. And what you do if -- my thumb measures about 4 centimetres, if I put the top of my thumb at the top of the sternum, the ball of the thumb, in other words the part of my thumb that would be pressing on the sternum, would be about halfway down. The sternum or the breastbone is about 4 centimetres long in a baby of 2 kilograms. In other words, a similar length to one adult thumb really.

JOHNSON: When you say thumb, do you mean the whole thumb or part of a thumb?

EVANS: No, from the tip of my thumb to the first joint. It's more than an inch, it's about 4 centimetres. So therefore if I put this in profile, if that's the top of my thumb (indicating), and that is approximately at the top of the sternum, the joint would be approximately at the bottom of the sternum of the baby and the ball of my thumb, which is the bit that will be compressing on the chest, would be halfway or two-thirds of the way down. So that's the way we do it.

JOHNSON: Yes. Thank you. Can we move on, please, to the case of [Baby P]. As with all the other cases that you've told us about, Dr Evans, you wrote several reports in this case.

EVANS: I have.

JOHNSON: Was the first 21 November 2017?

EVANS: Yes.

JOHNSON: Was the second 2 June 2018?

EVANS: Yes.

JOHNSON: Was the third report 24 March 2019?

EVANS: Yes.

JOHNSON: In that report were you sent additional material in the form of an extract from witness statements made by some of the prosecution witnesses?

EVANS: Yes, I was.

JOHNSON: They included [Dr B], Dr Gibbs, Dr Cooke, Dr Mayberry and Dr Ukoh?

EVANS: Yes.

JOHNSON: Subsequently to that, did you make further statements or at least one further statement?

EVANS: Yes. I made a typo type statement on 24 June 2021 and on 15 October 2021 I made another short statement regarding the pathology reports.

JOHNSON: Yes. I think you were sent some material from a pathologist at Alder Hey.

EVANS: There's another statement dated 21 October 2021, which relates to a correction of the original reports. The original bundle was 603 pages and this -- there were lots of

duplications, et cetera. So the bundle's reduced to just under 300 pages. Therefore that meant my paginating numbers had to be changed.

JOHNSON: It's not really relevant to your opinion, but just explaining or decoding that, in all your statements you refer to the bundle of documents that you'd been sent.

That was paginated, the bundle was then filleted in the sense that duplications were removed.

EVANS: Yes.

JOHNSON: It was re-paginated and so you wrote another statement just clarifying which document was where in terms of what you had referred to in your previous reports?

EVANS: Yes, I had a complaint or two that the original bundles were quite difficult to follow from time to time, which I suspect made one or two of my reports a bit more difficult to follow as a result of this, but anyway.

JOHNSON: Thank you. Dealing with [Baby P] then, please, and starting by using your report of 2 June 2018 as a guide, did you set out the basic details concerning his birth on 21 June?

EVANS: I did. He was the first of the triplets. He was 33 weeks by gestation. His Apgar scores were 5 at 1 minute, 7 at 5 minutes and 8 at 10 minutes, which is an indication of a satisfactory response to resuscitation and he was in good condition and he cried immediately. Because he was a premature baby he was admitted to the neonatal unit soon after he was born, in fact within 22 or 23 minutes of being born. And his measurements in terms of heart rate, respiratory rate and oxygen saturation were satisfactory and he required 40% oxygen, which is a little extra oxygen.

JOHNSON: Yes. Just dealing with, before we get to the details, dealing with the material that you were sent, we've already worked out that you received the medical notes from the Countess of Chester Hospital which included X-rays?

EVANS: Yes.

JOHNSON: You also received material from Alder Hey Hospital, where the post-mortem examination of [Baby P] was undertaken; is that right?

EVANS: I did, yes.

JOHNSON: And you received a report -- amongst other things, you received a report from [Dr B], dated 3 November 2016?

EVANS: I did.

JOHNSON: You have told us about [Baby P]'s vital signs at birth. You reviewed the fact that the first medical entry was on 21 June at 15.25?

EVANS: Yes.

JOHNSON: Which is our tile 7. You went on to observe that [Baby P] was on CPAP --

EVANS: Yes.

JOHNSON: -- or was receiving CPAP on 22 June?

EVANS: Yes.

JOHNSON: That's a detail that's not in the sequence. You have seen the intensive care chart which shows his graduation from CPAP to high flow; is that right?

EVANS: Or Optiflow, yes.

JOHNSON: Yes. And also the fact that he came off any sort of breathing support early on 23 June?

EVANS: Yes.

JOHNSON: Looking at your paragraph 8, did you record the fact that on 23 June, in other words the day his brother [Baby O] died, the day before he died, at 10 am he, that is [Baby P], was examined by Dr Cooke?

EVANS: Yes.

JOHNSON: And there were no concerns?

EVANS: There were no concerns. No increased work of breathing.

No recession, no grunting. The only comment I included, the abdomen appears full, but SNT, which I take is soft, not tender, non-tender, not distended.

JOHNSON: Yes. That is, as we have seen, tile 64.

EVANS: Yes.

JOHNSON: Did you move next to the examination conducted by Dr Cooke and Dr Gibbs about which Dr Gibbs gave evidence before lunch?

EVANS: Yes. This was at 6 pm on 23 June. So this is the day before his collapse and when he died. He was well, respiratory pattern was normal. And the entry notes:

"Abdomen full, mildly distended, no tenderness, no masses. Bowel sounds active. Mild erythema at the base of the umbilicus, no swelling, no exudate."

As a result of that they did a number of blood tests, and Dr Gibbs went through that this morning, and put him on two antibiotics as well and carried out an X-ray of the abdomen.

The blood tests were reported as showing normal findings, in particular there was no sign of infection.

JOHNSON: Yes. And if anybody wants to make a note of where to find that material, it's at tiles 181 and 182 in his sequence of events.

Did you move next to investigations that were carried out at 10.34 hours on the morning of 24 June?

EVANS: Yes, I jumped then to the morning after and my paragraph... Just a minute.

JOHNSON: Sorry, this is in your paragraph 9.

EVANS: Yes. Sorry, yes. So the blood tests were normal and -- yes.

JOHNSON: Okay. Thank you. This, of course, comes, just so that we don't lose sight of the sequence of events, this comes about 50 minutes or so after [Dr A] was called to the neonatal unit. He was called, we understand from tile 295, at 9.40, he arrived in the unit at 9.50, and Drs Ukoh and [Dr B] were already there with Rebecca Morgan and Lucy Letby.

EVANS: Yes. I did jump from, as I mentioned, from the 23rd to 24 June in that paragraph, yes.

JOHNSON: Thank you. Do you refer in your report to various blood tests that were undertaken that day, in other words the 24th, in particular --

EVANS: I did.

JOHNSON: -- one at that time?

EVANS: The results at 14.28 hours on the 24th, this is the day he died, the electrolytes -- that is the sodium was 147, slightly raised. Potassium, 3.0, slightly low.

Bicarbonate, 14, moderately low. His urea, which is an indication of kidney function was 3.1, which is normal.

His creatine was 76, which is normal, which is another marker of kidney function. And the cortisol, we've heard about cortisol values earlier today, that was 923, which is -- well, high. So you know, normal.

JOHNSON: Thank you. I want to start, if we can, please, with your paragraph 12 and starting with [Dr A]'s note, it's tile 295.

EVANS: Yes.

JOHNSON: This was the first of [Baby P]'s collapses on 24 June --

EVANS: Yes.

JOHNSON: -- at 9.40 or thereabouts. Did you start by looking at the first blood gas that was taken after that collapse at 10.06?

EVANS: I did. The blood gas at 10.06 was very abnormal. His pH was 6.94, which is very low, less than 7. Anything less than 7.0 is very low. His CO2 value was 11.3, which is very high, indicating that his breathing was compromised. His bicarbonate was 18, with a deficit of 15, and again these are outside of the normal range.

His lactate level was 11.6, which again is pretty high, indicating what we call a -- something you find in a metabolic acidosis. So he had a significant respiratory acidosis and he had a significant metabolic acidosis at that time.

JOHNSON: Did you move next to the gases at 10.46, so this is 40 minutes later?

EVANS: Yes. And this is quite a remarkable change in that 40 minutes later his CO2 is now 4.5, which is normal.

It's a very acceptable value meaning he is exchanging his oxygen and carbon dioxide satisfactorily. But his metabolic state remains abnormal, his bicarbonate is 12, it should be 25, and his lactate is 17, which again is very high.

JOHNSON: So far as the pH, which you've told us 40 minutes earlier had been 6.9 or thereabouts, had that recovered to a degree by (overspeaking) --

EVANS: That was 7.32 because -- yes, but what you need to interpret it is this carbon dioxide and the bicarbonate.

So 7.32 is fine.

JOHNSON: We've heard that [Baby P] received adrenaline and we'll deal with that, if we may, with Dr Bohin tomorrow, who is doing the calculations. Did you move next to the blood gases at 12.08 hours?

EVANS: Again, very similar to the ones at 10.46. So the pH is 7.32. CO₂, 3.35. That's lower than you'd wish, meaning that he was being ventilated probably a little bit too rapidly. And again, the bicarbonate and the deficit were outside of the normal range, indicating a metabolic acidosis.

JOHNSON: This was the time -- this is tile 414 if anybody...

I'll just check one thing, sorry.

(Pause)

We dealt with 12.08. I want to come to 12.28, which is tile 414, which is the third desaturation of [Baby P].

Just so that we can all remember what we're talking about in context, this is the occasion that [Dr B] told us about where she was in the tea room with [Dr A] and came back to find that [Baby P] had desaturated and the capnograph was not changing colour. All right?

EVANS: Yes. The clinical note is not particularly clear, but what is clear is that if the capnograph does not change colour the tube meant to be ventilating the baby is either in the wrong place or it's blocked. In other words, it's not working. And in -- which is -- and this was in a baby who had received this paralysing drug. So what the doctors did, and what you'd always do in a situation like this, is take the tube out and you place another tube in, which is what they did.

JOHNSON: We know that it was around this time that a chest X-ray showed the right-sided pneumothorax --

EVANS: Yes.

JOHNSON: -- and that was decompressed with a chest drain by [Dr A], as he told us.

EVANS: Correct.

JOHNSON: [Baby P] continued to receive various drugs; is that right?

EVANS: He was very vigorously resuscitated, as well as goodness -- five lots of adrenaline. He had a fluid bolus and also bicarbonate -- and sodium bicarbonate is the drug that one uses in a patient who has a metabolic acidosis.

JOHNSON: Yes. Just to put this in context, it was during this period of time, as he told us this morning, at 13.30 hours, that Dr Brearey had finished his cardiac clinic and examined [Baby P] with an echocardiogram. Despite the fact that there were no apparent heart difficulties, [Baby P] collapsed again.

EVANS: Yes.

JOHNSON: And in particular, the time -- a chest drain had been inserted in the interim but the time of the final collapse started at or about 15.14, which is tile 545.

EVANS: Yes. Just prior to this collapse, there was a recovery because his oxygen saturation before this final collapse was 100% in 21-30% oxygen. In other words, you know, his resuscitation was successful.

JOHNSON: Yes, all right.

EVANS: Anyway, then he collapsed at 15.14 hours.

JOHNSON: Yes. And we've heard a good deal of evidence about the final collapse from various doctors, in particular [Dr A], [Dr B] and indeed Dr Rackham this very afternoon.

EVANS: Yes.

JOHNSON: Moving on to material that you looked at, please, Dr Evans, did you also examine the nursing notes?

EVANS: I did.

JOHNSON: Did you examine the X-rays?

EVANS: I did.

JOHNSON: In particular, so far as the X-rays were concerned, ignoring for now the very first X-ray that was taken at 19.47 on his birth day, 21 June, did you examine specifically the one taken at 20.09 hours on 23 June?

EVANS: I did.

JOHNSON: Again, just putting that into the overall chronology, this is the X-ray ordered by Dr Gibbs, as he told us this morning, following his examination of [Baby P] at about 18.00 hours.

EVANS: Yes.

JOHNSON: If Mr Murphy would just assist, please, could we look at that. It was dealt with also by Professor Arthurs last week. It's at T173.

We see there:

"Requested at 18.00 hours, taken at 20.09."

EVANS: Right.

JOHNSON: How did you interpret this X-ray?

EVANS: Obviously I'm not the radiologist, but I've seen loads and loads of X-rays of babies. What I said was that it contained gas-filled bowel loops throughout the abdomen.

There's lots of gas here, all over the abdomen. You can see that's a -- these are bits of bowel and intestine, in other words, it's another piece of intestine (indicating). There's an awful lot of gas in here, but -- that's it, really.

JOHNSON: All right. Did you also look at the X-ray taken the following day, on the 24th, at 11.57, which is tile 400?

EVANS: I did. This is a chest X-ray.

JOHNSON: Just to put this into context, this is after the second desaturation but before the third, what I will call for shorthand, the tea room desaturation.

EVANS: Yes. This is a whole body X-ray, really. What it shows -- this is the endotracheal tube (indicating) and if you can see this line here (indicating), going down here, the bit around towards the centre is the lung, right lung. The blacker area, which goes from there (indicating) towards the outside of the ribcage, that is the pneumothorax. In other words, air has got into the pleural cavity, which is what we call a pneumothorax.

JOHNSON: Yes.

EVANS: So that is what that shows.

JOHNSON: Thank you. I think you looked -- you then refer to the X-ray at T434, which we know is timed at about 12.30.

So if we could have 434, please, Mr Murphy.

You'll recall that this is the un-timestamped X-ray, but we've taken the time from [Dr A]'s notes, all right?

EVANS: Yes, right. This is a chest X-ray. This is a chest drain (indicating). The line that I showed -- that was present in the previous X-ray has disappeared. In other words, the lung is now re-inflated.

JOHNSON: Yes.

EVANS: In other words, it's re-expanded.

JOHNSON: Then there was a final X-ray that you refer to in your reports at 574 and this is, I think, the one with the pigtail drain.

EVANS: Yes.

JOHNSON: That was referred to by Dr Rackham this afternoon as having just been completed, the insertion of which had just been completed when he arrived at 3 or --

EVANS: About 3 o'clock, yes.

JOHNSON: Yes.

EVANS: Again, if we can show that.

JOHNSON: 574, please, Mr Murphy. This, of course, is taken during the final -- [Baby P]'s final collapse.

EVANS: Yes. Again, clearly, for obvious reasons, this is the pigtail catheter (indicating), pigtail cannula/chest drain and it's inserted into the chest in the right position. If you look at this area around the cursor, that is the right lung and it's fully expanded, as is the lung on the other side.

JOHNSON: So far as all that material was concerned, I'm looking at your paragraph 25 now of your report of 2 June 2018, what conclusions did you draw as to [Baby P]'s condition at birth and in the day or two following his birth?

EVANS: Well, he was in very good condition at birth. He was one of triplets. He was a good weight, 2 kilos, he stabilised

quickly, required hardly any respiratory support. In fact, he was off both CPAP and Optiflow, which is a less invasive method of giving additional oxygen or giving additional gas. He was off that very promptly. He did not require additional oxygen. In other words, his lung function was as good as it gets.

And the only thing I queried was the mild distension of the abdomen on 23 June, the day before his collapse.

JOHNSON: Yes. That's the X-ray taken just after 8 o'clock --

EVANS: That's right.

JOHNSON: -- that evening?

EVANS: I used the word "intrigued by" -- I thought there was a presence of a lot of air in the intestine, more than I would expect in a baby who was on CPAP --

JOHNSON: Yes.

EVANS: -- and [Baby P] was not on CPAP.

JOHNSON: Thank you. I want to just keep the chronology now, please, Dr Evans. I want to move to your report of 23 March 2019 and paragraph 6, which relates to the evidence of Sophie Ellis --

EVANS: Yes.

JOHNSON: -- who, we will remember, was [Baby P]'s designated nurse for the night shift of the 23rd into the 24th.

EVANS: Mm-hm.

JOHNSON: We will remember what she said about the feeding charts in the early hours of the morning, the intervention of Dr Mayberry and [Baby P] being put on nil by mouth.

EVANS: Yes.

JOHNSON: Just dealing with that sequence of time then, please, from 20.00 hours on the 23rd through to the end of the night shift at 07.30 hours on the 24th.

EVANS: Yes.

JOHNSON: What did you conclude, if anything, from [Baby P]'s progress through that night shift?

EVANS: Well, there were a number of markers that were concerning. They were not life-threatening but they were concerning.

The first thing I observed was that at 8 pm, in other words the night before, 23 June, 14ml of part-digested milk was aspirated. He was on oral feeds via his nasogastric tube and we've heard often about, pre feeds, one aspirates hardly any milk at all. So 14ml of part-digested milk is a lot.

They put it back down. Whether they should or not -- well, they did. And then 4 hours later, this is midnight, they aspirated 20ml of partly digested milk, and on this occasion they did not, the nurse did not reinsert the milk down the tube. In fact they stopped oral feeds altogether.

JOHNSON: Yes.

EVANS: Then the other marker, which in isolation would not be particularly concerning, that combined with the aspirates of milk on two separate occasions, he also had a desaturation into his 80s, in other words his oxygen saturation dropped to his 80s, and it should be over 90.

It should be in the mid-90s. So a drop into the 80s is significant.

His heart rate dropped into the high 90s, it should be 120 plus. So therefore, that was a bradycardia, reduced heart rate, but it self-corrected and there was no intervention. Now prem babies will do this and if it's an isolated event and they're otherwise well, it's not concerning. But in association with the difficulties of establishing him on milk feeds, I thought this was concerning.

Stopping oral feeds was correct. He was given some intravenous dextrose and his blood gas subsequently was normal: pH 7.38, CO2 4.94; that's normal.

Then finally, as far as the night shift is concerned, there were two further entries actually, I've only included one. There was an aspiration of 25ml of air; that was at 2 am or 4 am.

JOHNSON: Yes, 4 am.

EVANS: 4 am, so again --

JOHNSON: Kate Percival-Calderbank was the nurse.

EVANS: Aspirating 25ml of air is a lot in a baby who's on nil orally and who is not on any oxygen -- any CPAP or anything. But

anyway, he had 25ml of air came up on that occasion. Then later, just before the end of the night shift, 5ml of air was aspirated and you're not going to get too concerned about aspirating 5ml of air.

So I thought, now, when you're -- my role in this, of course, was to try and work out what are called --

JOHNSON: We'll come to in that a moment if we may. What I want to do before we do that is deal with tile 249, please, Mr Murphy.

This is Sophie Ellis' note of the condition of [Baby P] at the end of that night shift. He began with a problem and I think actually just the transposition, the transcription:

"Abdo has been soft and non-distended."

So that was his condition at the end of the night shift?

EVANS: Yes. So satisfactory, yes.

JOHNSON: So whatever the problem had been, does that suggest that it had resolved by that stage or not?

EVANS: Well, it had, actually, particularly as only 5ml had come up later and, again, what they did was put the nasogastric tube on free drainage, which is standard management actually.

JOHNSON: So that's 06.39. Can we go to 263, please? It's Lucy Letby's note at 08.00. Again, we can probably just settle for Claire Hocknell's transposition of what appears in the notes. We can see that the final line and a bit reads, by 8 o'clock, according to Lucy Letby:

"Abdomen full. Loops visible. Soft to touch."

All right?

EVANS: Yes.

JOHNSON: Then just after Dr Ukoh's ward round at 09.35 we have [Baby P]'s first collapse at 09.40.

EVANS: Yes.

JOHNSON: That was dealt with by intubating [Baby P]?

EVANS: Yes.

JOHNSON: There was a further collapse at 11.30?

EVANS: Yes.

JOHNSON: With a bradycardia and desaturation, which required CPR?

EVANS: Yes.

JOHNSON: There was a yet further desaturation collapse at 12.28?

EVANS: Yes.

JOHNSON: Which I've referred to as the tea room collapse. Then the fourth and final desaturation at 15.14.

EVANS: Yes.

JOHNSON: What conclusions did you come to as to the causes of those events?

EVANS: I was at a loss to explain how this baby had collapsed.

Let's be... I was concerned from the night before because of the failure to establish milk, et cetera.

But there was clearly a significant deterioration at 09.40. Whether that -- my opinion was that he was resuscitated appropriately but the chest X-ray at 11.57, I think, showed a pneumothorax. My opinion was that the pneumothorax had been caused by -- as a result of the resuscitation. In other words, if you do bag a baby, you exert high pressure into the lung and you can cause a lung leak.

So I thought the pneumothorax had been caused by the resuscitation, I did not think that the pneumothorax was the result of his collapse. And from what [Dr B] said yesterday, and I agree, the chest X-ray did not show a tension pneumothorax. In other words, there was an air leak there but there was no sign of tension pneumothorax, which is life-threatening and needs urgent intervention.

So they treated the pneumothorax properly and from there on, I really was, and still am, stuck as to why he had further collapses and his final resuscitation was unsuccessful.

The only thing I could think of was that he'd suffered complications from the pneumothorax. Now, what I mean by this is this: going back to the bad old days where my generation spent a lot of time putting chest drains into babies who had bad lungs, and from time to time, despite inflating the lung the baby would not recover. The reason they would not recover, almost

certainly, was that the collapse would have contributed to a condition called pulmonary hypertension. And pulmonary hypertension interferes with blood flow to and from the heart. That makes the pulmonary hypertension worse, you get a vicious cycle.

Therefore in the bad old days, despite treating pneumothoraces with chest drains, when you're dealing with bad lungs, I thought, oh, this may explain from a physiological point of view why he failed to recover.

JOHNSON: You've presumably listened to the evidence that's been given to the jury over the last few days concerning [Baby P]'s course of collapses and treatment?

EVANS: I have.

JOHNSON: And in particular, to Dr Brearey, who told us about an echo?

EVANS: The cardiac echo was normal. What he meant by that was that there was no sign of pulmonary hypertension. So that tends to reduce my conviction in relation to [Baby P]'s death being the result of complications of his pneumothorax.

The other point, of course, is that unlike the bad old days, [Baby P]'s lungs were pretty normal before his pneumothorax. You know, he was not requiring oxygen, chest X-ray looked pretty good. Therefore he would not, in my opinion, have been a high risk for pulmonary hypertension following a pneumothorax.

JOHNSON: What about the effect of the gas in his bowel?

EVANS: Right. There was a lot of gas in his bowel from the X-ray of 8 pm the night before --

JOHNSON: The 23rd, yes.

EVANS: -- which I commented on. The radiology report, which I respect, said there's a lot of gas there, but did not comment on the fact that there was too much gas there or that the presence of this gas was abnormal. So I left it as something that, you know, well, the radiologists have reported on the presence of lots of gas, which I've queried.

Looking back on it, I wonder whether the excess gas, I'm talking now from 8 pm the night before, may not necessarily have been natural. The baby was not on CPAP and he was not on nasal prongs, Optiflow. So it begs the question whether excess gas in his abdomen at 8 pm the night before was the result of air being injected down his nasogastric tube some time before 8 pm.

JOHNSON: 8.09 being the precise time.

EVANS: Sorry, yes, 20.09. Now, if you've got loads of air in the intestine, it's going to bloat you. In other words, you know, your intestine is full of air. He hasn't started getting a good regular bowel action.

That could contribute to the fact that he was not absorbing his milk as one would expect of a well premature baby. So whilst in my reports 5 years ago and 6 years ago I thought we should look at events from the aspiration of milk, 14ml of milk, late on the 23rd, I think we should look further backwards to the time that the X-ray showed lots of gas in his abdomen.

JOHNSON: Well, to be fair to you, if you look at paragraph 14 of your report of 24 March 2019, paragraph 14 of that report. It's your third report of 24 March 2019.

EVANS: Yes, where I say and I quote:

"I remain suspicious of the large volume of air noted in the stomach and intestines found on X-ray."

Then I go on:

"It may be that the sequence of events was this..."

JOHNSON: And you then say in effect what you've just said.

EVANS: "Excess air in the stomach and intestine, splinted the diaphragm, this would have compromised his breathing", et cetera.

JOHNSON: Thank you. In your opinion are there any credible natural causes for [Baby P]'s premature death?

EVANS: There are none, really, because we've gone through them all. Infection/sepsis is top of most people's list.

There was no sepsis. There was no significant haemorrhage. He did not have necrotising enterocolitis.

He had no brain problem. We know, because he has a surviving triplet who's an identical triplet, that there was no congenital issue. So [Baby P]'s collapse and death cannot be explained on the basis of a natural event if one accepts the opinion of the doctors who -- experienced doctors who looked after him that pulmonary hypertension as a complication of pneumothorax is not a sufficient explanation for his death.

MR JOHNSON: Thank you. Those are all the questions I had for you. Thank you, Dr Evans. I don't know whether...

MR MYERS: My Lord, I just wonder. It's 4.05. I may be a little while -- I can't be sure when I'd conclude cross-examination, but again it may run past 4.30 by some measure and it's difficult to predict as I stand here now. I just wonder whether it would be better to start in the morning. I don't mean to inconvenience the members of the jury or your Lordship or Dr Evans.

MR JUSTICE GOSS: I don't think you will be because Dr Evans will be coming back tomorrow anyway.

MR MYERS: Very well.

MR JUSTICE GOSS: We then have Dr Bohin.

MR MYERS: We do, yes.

MR JUSTICE GOSS: Then I don't think we actually have anything else after that.

MR MYERS: That will probably take us about as far as we can get at this stage.

MR JUSTICE GOSS: Am I right, Mr Johnson?

MR JOHNSON: I believe you are, my Lord, yes.

MR JUSTICE GOSS: In which case there's no pressure of time because, as I've already told the jury, they won't be required on this case on Friday, so losing 20 minutes or so now isn't going to make any difference.

MR MYERS: I'd be grateful for that. Thank you.

MR JUSTICE GOSS: All right. It's payback for yesterday, so to speak. A little bit earlier today. Thank you very much.

Please remember your responsibilities as jurors.

It's vitally important. I saw a news report today of jurors who disobeyed the instruction, four jurors who conducted research over the internet, and aborted a trial that cost £1.3 million to restart and do. This would be considerably more than that, I should think.

It's had to restart again and they ended up with suspended prison sentences. Prison sentences but suspended. So that is simply emphasising what I said to you at the outset about the

importance of obeying your instructions as jurors. I'm not saying it as a threat, I'm giving it to you by way of information. Thank you.

(In the absence of the jury)

MR MYERS: We'd be grateful if we could have time downstairs, my Lord.

MR JUSTICE GOSS: I'm sure that can be accommodated.

Thank you very much, officer.

I should say, Mr Myers, I have the report.

Thank you for that.

MR MYERS: Very well. Thank you, my Lord.

(4.08 pm)

(The court adjourned until 10.30 am on Thursday, 23 March 2023)