

20 February 2023
Baby L
+ Kate Tyndall on Baby M

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Monday, 20 February 2023
(10.30 am)

(Delay in proceedings)

(10.48 am)

(In the presence of the jury)

MR JUSTICE GOSS: Good morning, members of the jury.

I apologise for the delay in starting this morning -- those who are in court will have been aware of the problem: there was a major technology issue, a part had failed in the system, but fortunately someone was able to provide a spare part and repair it. So what could have been a lot longer delay has not materialised.

We have lost 20 minutes, but the problem has been solved and we're ready to continue.

MR ASTBURY: My Lord, may I recall, please, Anna Milan.

MS ANNA MILAN (recalled)

Examination-in-chief by MR ASTBURY

MR ASTBURY: For the record, please, could you remind us of your name.

MILAN: Yes, it's Anna Milan.

ASTBURY: Thank you. You are a consultant clinical scientist employed by the NHS at the Department of Clinical Biochemistry at the Royal Liverpool Hospital (overspeaking) --

MILAN: Correct.

ASTBURY: I don't want to go over old ground with you, but you've given evidence already about the relevant systems in place at the laboratory. I'm going to, if I may, just by way of reminder, deal with some bullet points of your evidence last time just to put what I'm going to ask you in context, please.

You told us where your laboratory was located and that you would receive blood samples from various locations for analysis.

MILAN: Correct.

ASTBURY: They would arrive at your reception where they would be triaged?

MILAN: Yes.

ASTBURY: A sample would bear the name, the date of birth and the hospital identifying reference number for each sample?

MILAN: Correct.

ASTBURY: It would also have a sheet setting out the purpose of the sampling?

MILAN: Yes, a full request form.

ASTBURY: Thank you. And whomsoever was triaging that sample would then label, in addition, the sample with your unique reference number?

MILAN: Correct.

ASTBURY: Pausing there, can I ask this: at the triage stage does somebody check that the sample is properly labelled?

MILAN: Yes, if it isn't, it's rejected and obviously that's done there, it should also be done when it's sent to us as well, so it's got several layers of checking.

ASTBURY: So the sample itself will be labelled with the relevant information as you have just recapped?

MILAN: Yes.

ASTBURY: But also someone will check that the sheet that accompanies it requiring the various tests to be done matches the sample that it's with?

MILAN: Yes, and if they don't match then that sample is instantly rejected.

ASTBURY: What would happen if it was rejected?

MILAN: No further analysis at all.

ASTBURY: Right.

MR JUSTICE GOSS: When you say no further, there would just be no analysis by your laboratory?

MILAN: None by our laboratory -- and obviously there would be a report that's sent back to the referral laboratory to say "Unable to process: patient mismatch".

MR JUSTICE GOSS: So it's perhaps more appropriate to say that there would simply be no analysis rather than no further analysis?

MILAN: Yes.

MR ASTBURY: So it only proceeds if that checking is all in order.

MILAN: Correct.

ASTBURY: You told us that a sample that is for analysis for C-peptide and insulin arrives frozen?

MILAN: Yes.

ASTBURY: That frozen samples are prioritised and taken to the freezer with that new bar code that you have issued at your laboratory attached?

MILAN: Yes.

ASTBURY: But that C-peptide and insulin examinations are not treated as urgent?

MILAN: Yes. Because we are an adult hospital -- unless they specifically say on the request form "Please analyse urgently", where we could try and prioritise it.

ASTBURY: And in those circumstances it would be tested, I think you told us, in a batch?

MILAN: Yes.

ASTBURY: For the same test for a number of different (overspeaking) --

MILAN: Yes. That's how we operated then anyway because obviously this was a while ago.

ASTBURY: Of course.

MILAN: Yes.

ASTBURY: You told us on the last occasion the analysis was done on a stand-alone machine?

MILAN: Yes.

ASTBURY: In a separate room from others with a dedicated operator?

MILAN: Correct.

ASTBURY: Before that analysis even begins, you told us there are a series of quality control checks that are undertaken?

MILAN: Yes.

ASTBURY: There are, I think in your words, standard operating procedures which have to be followed?

MILAN: Yes. And any member that operates that has to acknowledge that they've read those before they're allowed to operate any machinery.

ASTBURY: So they have to be properly trained?

MILAN: Absolutely.

ASTBURY: Careful records are maintained of the machine and its -- the tests that are done?

MILAN: Yes, and it's performance on that day.

ASTBURY: So not just a general report, but each and every time it's used, those check are carried out?

MILAN: Yes. And if they're inconsistent with previous performance nothing will happen until we are happy that the machine is performing.

ASTBURY: So the test would not be undertaken if there was any anomaly discovered?

MILAN: Correct.

ASTBURY: All of that process is accredited by an organisation, I think the United Kingdom Laboratory Accreditation Service?

MILAN: Yes, UKAS to us.

ASTBURY: You have also input from Roche, who are the manufacturers?

MILAN: Yes.

ASTBURY: I think you described them on the last occasion as a global provider.

MILAN: They are, yes.

ASTBURY: It's only once all of those checks that you have just alluded to are complete is the sample analysed? Is that right?

MILAN: Yes, that's correct.

ASTBURY: Once the machine has completed the analysis you told us the results are then placed in a holding area for validation?

MILAN: Yes.

ASTBURY: And there are then further quality control checks on the machine post-testing?

MILAN: Yes. Just to sort of close the batch, so the same controls that are performed at the beginning are performed at

the end to makes sure that throughout that time we can be accurately sure that that machine was performing.

ASTBURY: Thank you. Once that second quality process is complete, the sample is sent to a biochemist, a human being --

MILAN: Yes.

ASTBURY: -- for a clinical review and interpretation?

MILAN: Yes, that's one of us.

ASTBURY: So it's not simply the machine?

MILAN: No. No, there's various human interventions along the way then from there on.

ASTBURY: And then a paper report would ordinary be sent to the order; is that right?

MILAN: Yes. If there was no action needed then a paper report is just automatically printed anyway. If it requires telephoning or if it requires an additional comment, some information to be put on it, that's the role then of the clinical scientist to do.

ASTBURY: Okay. So paper results as a matter of course and it's matter of judgement whether the hospital is called to --

MILAN: Yes.

ASTBURY: -- as it were, pre-warn them of what they're about to receive?

MILAN: Yes.

ASTBURY: And draw their attention to anything that's important?

MILAN: Yes.

ASTBURY: You mentioned UKAS. Can I confirm, please, that is, you told us, a governing body that oversees the accuracy of the laboratory?

MILAN: It oversees the whole quality of the laboratory, so it's all the documentation, the training, the analysis, the performance of equipment, the performance of staff.

It's everything, so it governs us.

ASTBURY: I think you told us last time they are based in Birmingham?

MILAN: That's an EQA scheme. So UKAS are based nationally.

They're more sort of global, but from an EQA point of view there is Birmingham and there is Guildford.

They're slightly different.

ASTBURY: I just want to ask you a little bit more about Guildford for a moment because I think you told us last time that you're monitored?

MILAN: Yes.

ASTBURY: And that monitoring involves Guildford sending anonymised samples?

MILAN: Yes, they send them on a regular basis to see how we all perform compared to all the other laboratories in the UK.

ASTBURY: And those are designed to test your accuracy because you report back what you find in those anonymised samples?

MILAN: Yes. We don't know what the values are until everybody's reported their numbers.

ASTBURY: And that presumably is to check, again from a third party point of view, the accuracy of the process?

MILAN: Absolutely, yes.

ASTBURY: For today's purposes you've been asked to comment on a blood sample that was taken at the Countess of Chester Hospital and sent for testing at Liverpool's clinical laboratories in relation to a baby called [Baby L].

MILAN: Yes.

ASTBURY: You have noted in your statement that [Baby L] was born on 8 April 2016. Having checked the records, you've also noted that the blood sample taken from [Baby L] was received from the Countess of Chester Hospital at Liverpool at 15.47 on 11 April 2016.

MILAN: Correct.

ASTBURY: Thank you. Was that sample submitted for testing for insulin and C-peptide levels in the way that you have just described to us a few moments ago?

MILAN: As far as we can retrospectively determine, yes. It shouldn't have gone for analysis if it hadn't passed all those steps.

ASTBURY: Thank you. Are you able to say whether the sample was labelled as having been taken from [Baby L] on 9 April 2016?

MILAN: I do believe, if I remember rightly, it might have just got "twin" written on it as a first name but that would have checked out with what was on the request form.

ASTBURY: Thank you. Upon analysis within the laboratory, were the results found in respect of C-peptide recorded as 264?

MILAN: Yes. That's in one set of units, picomoles per litre for C-peptide, yes.

ASTBURY: Thank you. Then we have two insulin readings on your analysis. Could I just ask you, please, to specify the measurement. One is 158.4?

MILAN: Yes.

ASTBURY: What would that be?

MILAN: So that's in the different units, so that's not in the picomoles per litre, that's in what we call SI units and then the picomoles per litre equates to the C-peptide units.

ASTBURY: In this case was the picomoles per unit 1,099?

MILAN: Correct.

ASTBURY: Were those results recorded and stored electronically?

MILAN: Yes.

ASTBURY: Have you been able to access those electronic records?

MILAN: Yes. To be able to give my statement I was able to get that and the log that was attached to it.

ASTBURY: Thank you. Could I ask you, please, to look first at what you described as a screenshot of the electronic result and which you've kindly exhibited for us as AM/03. Mr Murphy, could I ask you to put up 26987?

(Pause)

Can you firstly confirm for us, please, that's the screenshot that you provided?

MILAN: Yes.

ASTBURY: If you take us through, is that twin 1?

MILAN: Yes.

ASTBURY: Showing the date of birth?

MILAN: As 8 April 2016.

ASTBURY: Thank you.

MILAN: And obviously the unique identifier at Chester, which is the CC number in the top left-hand corner. Then our specimen number, which is the identifier that we give it once we've checked all the demographics against the request form and the sample. The date of collection is obviously the date referred on the request form as to when the sample was collected at the originating laboratory. And then we received it on the 11th.

And then on this screen you can't see when we authorised it, but I think that was the 14th. But you've got the three results: you've the C-peptide of 264, and then you've got the insulin in both sets of units, and the important one really is the one that's 1099, because that's in the same units as the C-peptide.

ASTBURY: So that can then be viewed as a --

MILAN: Ratio.

ASTBURY: -- direct comparison and as a ration between one and the other?

MILAN: Yes.

ASTBURY: Thank you. Before we move on from this, where we have got the collected date of 9/4/16, what does the NK --

MILAN: Sorry, no time was stated on the time of collection.

Sometimes that could be down to our team booking it in, sometimes it's very easy just to do a return key or there might not have been a time on the sample that says what time it was collected.

ASTBURY: Are those results, were they, as far as you're aware, reported by a colleague to the Countess of Chester Hospital --

MILAN: Yes.

ASTBURY: -- by telephone in the way that we discussed a moment ago?

MILAN: Yes, because of the nature of the results they were reported by telephone.

ASTBURY: What can you tell us about the nature of the results from your experience?

MILAN: So based on those two -- I'm just going on the bigger number for the insulin which is in the same proportion as the C-peptide. It's the wrong way round. So normally your C-peptide should be five to ten times higher than the insulin if it's insulin and C-peptide you have made yourself. So that's why the comment on there is -- it's difficult to interpret because we don't know whether that was taken at a time when the glucose was high or low, but the only way you can get a pattern like that is if there's insulin been given to a patient.

ASTBURY: Okay. And are you able to say from your experience what type of insulin would create that result?

MILAN: No, we wouldn't be able to report what type of insulin, we don't measure what type of insulin. It's just for -- any insulin that's given doesn't make C-peptide. So that's why the ratio is the wrong way round, so you know it's exogenous.

ASTBURY: Thank you. Did you also, by way of assistance, provide a screenshot of the electronic call log information telling Chester (overspeaking) --

MILAN: We did, yes.

ASTBURY: Can I ask you to look at the next page, please. Can you confirm, please, Dr Milan, that that is the document that you provided?

MILAN: Indeed, yes. Sorry about the focus of it, it's not very clear. I think that's down to the IT at our hospital, not yours.

ASTBURY: (Inaudible: off microphone). We can see there, can we, at least if we look to the right --

MILAN: Yes, it was run -- both the insulin and C-peptide were rung by a colleague of mine to the consultant at Chester, the consultant medic in the biochemistry laboratory, and the full comment as sort of elaborated on from the previous screen:

"Difficult to interpret without the concurrent glucose. But if the patient was hypoglycaemic at the time it's a very inappropriate set of results."

ASTBURY: Thank you. At the time of collection --

MILAN: Yes.

ASTBURY: -- as you put there?

MILAN: Yes.

ASTBURY: Thank you. Following that process, what happens to the sample itself?

MILAN: We store all samples for 7 days just in case they want it back or it needs to be sent on anywhere else or they want additional tests and after which we do discard because we don't have the capacity to keep them.

ASTBURY: Thank you. Bearing in mind everything you told us last time, and what I hope we've recapped in summary this morning, is there anything you're aware of that gives you any concern as to the accuracy of those results?

MILAN: Nothing at all, no.

MR ASTBURY: Thank you. Could you wait there, please?

MILAN: Of course, no problem.

Cross-examination by MR MYERS

MR MYERS: Dr Milan, just to remind us, you're a consultant clinical scientist --

MILAN: I am, yes.

MYERS: -- working at the Department of Clinical Biochemistry at Liverpool University Foundation Hospital?

MILAN: Correct.

MYERS: I've just got some questions about the process --

MILAN: No problem.

MYERS: -- if I may. Before I look more closely at the specific process here, can I ask you something about Guildford as you told us about Guildford? Is Guildford somewhere that provides what's called external quality assessment?

MILAN: It is, yes. That's slightly different from the UKAS that we mentioned about for quality -- for laboratories in general.

They do what's called external quality assessment, so they're the ones that send us these anonymised samples and then obviously produce a report to say how well your laboratory has done, how accurate it is to compared to the average of all.

MYERS: Is that done on a kind of six-weekly basis (overspeaking) --

MILAN: Depending on the analytes, yes. Some of the things that we measure more frequently will be done every 2 weeks.

Some of the things that we measure, such as insulin and C-peptide, that are less frequent may be done every 6 weeks or every month.

MYERS: Just so we can all follow this, this is one of the ways of assessing that the laboratory is performing analysis accurately and correctly, isn't it?

MILAN: Yes.

MYERS: And what happens with Guildford is they send you -- is it in effect three test samples each time?

MILAN: Yes.

MYERS: And so far as you understand it to be, they know what the readings, in effect, should be for those samples?

MILAN: They have an idea, yes, depending on whether they've had spiked it or they've got a pool that they have run in themselves.

MYERS: And then in your laboratory you run those samples through your system and submit the data back to Guildford?

MILAN: Yes, we treat them as patient samples. The whole point is that they are treated like patients.

MR JUSTICE GOSS: Do you know that they are not patient samples?

MILAN: No, you don't --

MR JUSTICE GOSS: Exactly. So --

MR MYERS: But they are to test, aren't they, to see -- because Guildford have got what the results are meant to be they can see if your system is matching theirs?

MILAN: Yes.

MYERS: What they can look at is to check, first of all, time after time, is your system performing in a consistent fashion?

MILAN: Yes.

MYERS: And they can also check how you're performing with those samples against other hospitals, can't they?

MILAN: Yes. Other hospitals and other people that use the same, say, Roche analysis as we do and other users as well.

MYERS: All right. That's how Guildford do what they do?

MILAN: Yes.

MYERS: Just coming back to the process that you've been telling us about, Dr Milan, I just want to be quite clear the stages of this. A sample is taken on the unit?

MILAN: Yes.

MYERS: We've heard that in due course that is what's called podded or sent through to the -- is it the lab in the hospital?

MILAN: Yes.

MYERS: So that's what podding is?

MILAN: It's a pneumatic tube system. It's just the fastest way to get a sample through to the laboratory.

MYERS: Like the cash in the tubes in a supermarket --

MILAN: Absolutely.

MYERS: -- (overspeaking) put it in and off it goes?

Then having gone to the laboratory at the hospital, in due course, if required, it's sent on to the laboratories where you work?

MILAN: Yes. So the referral laboratory, in this case Chester, will have a set of protocols, depending on the analyte, as to how they process it and treat it.

MYERS: Right. If the sample isn't handled or stored correctly at any point along there, that has the potential to undermine the process, doesn't it?

MILAN: Depending on the analyte, it can have the potential.

MYERS: If the process is undermined, that can affect the accuracy of the analysis, can't it? If it is. It's an "if".

MILAN: Not so much the accuracy but it could affect the stability of the analyte in question, yes.

MYERS: And so we're all up to speed to the terms, an analyte is what I or what we might call the thing to be analysed?

MILAN: Yes.

MYERS: So insulin is an analyte (overspeaking) and C-pep --

MILAN: Yes.

MYERS: -- or blood glucose or whatever?

MILAN: Yes.

MYERS: Maintaining the (inaudible) biochemistry language, but maintaining the sample integrity is a priority isn't, it?

MILAN: It is.

MYERS: That includes, doesn't it, keeping the sample at a sufficiently low temperature prior to analysis to ensure there's no deterioration of the analyte?

MILAN: Yes. In this question the C-peptide is stable, it's insulin -- and the only thing that would happen would be insulin potentially could go down and that wouldn't change the interpretation in this case.

MYERS: Right. Just to be clear, as part of the process, that's why it has to be frozen when it comes to your lab if it's not going to be done immediately, doesn't it?

MILAN: Yes, we keep it frozen because it preserves it for longer.

MYERS: When the sample is taken on the unit, should it be kept in a cool bag before it gets sent to your laboratories?

MILAN: On the ward or in the lab?

MYERS: First of all, we'll go step by step. On the ward, would you expect it to be put in a cool bag?

MILAN: It's very difficult now because wards do not have ice machines, so they don't have the ability, so we say, could you get it to the lab within 30 minutes, please.

Hence it's either podded or a porter will take it down.

MYERS: And then having got to the lab, then it will be cooled prior to being sent?

MILAN: It would be processed at an urgent, so it'll be spun so, in technical terms, the cells are separated from the rest of the sample. That preserves it initially anyway because once the cellular material is removed from the sample, you've got no cellular activity.

MYERS: Yes. So we can get this, if we can keep up with you.

If do you that with the blood you get what's called a serum, don't you?

MILAN: Yes.

MYERS: And the serum is a kind of liquid without all the stuff in it?

MILAN: It's like the yellow straw liquid of the blood.

MYERS: Right. And then the analytes and all the other bits in the blood are what's spun out --

MILAN: Are in that, yes.

MYERS: Yes. But when you spin it, you separate the two?

MILAN: Yes. All of the analytes that we are interested in are in the yellow plasma and the cells are removed then.

MYERS: Having gone to the hospital lab and been spun ready for transmission, it should then be put into a cool bag, shouldn't it?

MILAN: Yes, or if it's going to be stored at the laboratory, it'd be frozen there or put into a cool bag, yes -- depending on when it's going to be transported to us.

MYERS: You've said that ideally, depending on the analyte, it should be cooled within 30 minutes?

MILAN: Separated and cooled within 30 minutes, yes.

MYERS: Separated and cooled, yes.

MILAN: Once it's separated, that stability is improving and in that -- the degradation will not be as quick. So then you can

either put it in the fridge or freezer, as long as it's kept cool.

MYERS: If a sample is taken but then left on the side, or however it comes to be, on the ward, on the unit, without being podded and spun and cooled, if it's left like that for a matter of hours, does that presents a potential risk for some undermining of the integrity of that sample?

MILAN: It can do, yes, but all that's going to do is decrease, in this case, insulin.

MYERS: In your statement you describe that insulin and C-peptide are two tests which require immediate processing.

MILAN: Immediate separation, yes.

MYERS: Immediate separation?

MILAN: Yes, by processing. We mean that -- not by measurement, because obviously we've measured these a few days afterwards so --

MYERS: But they require immediate, as you put it, separating --

MILAN: Separation of -- yes.

MYERS: And cooling?

MILAN: Yes.

MYERS: Can I just take you to the screenshot that we had a look at, which is at 26987. There's just one thing I'd like to clarify, Dr Milan.

It's just where we looked at the entry three lines down that says "Collected, 9 April 16", and then "NK".

What do we take NK to mean in the context of this?

MILAN: It's difficult from this screen for me to know what -- when data is inputted into the software, if somebody hits return twice after they have put a date in, it will just put "unknown" for -- so that's the time of collection. Now, if it's on the request form, it should have been entered at the time that this sample was put into our database. So without having the request form in front of me, I don't know if that was actually written on it or the sample. But when this was booked in, they have just put "NK" by hitting return.

MYERS: And that all relates to when it's arrived at the Liverpool University Hospital laboratory?

MILAN: No, that'll be the time that sample was taken from the patient.

MYERS: Right. So that's simply not been recorded on this?

MILAN: It's just not been recorded on the system, yes.

MYERS: If a sample has deteriorated or hasn't been handled correctly, let me go back a step, from the point it was taken, can that affect the reliability of the findings which you get in later analysis?

MILAN: It can do, depending on the analyte, yes.

MYERS: You say that in the case of insulin, the reading is more likely to go down, if anything?

MILAN: Yes. We wouldn't create insulin in the sample. So it would -- it would not change the interpretation on this, but that number, if it hadn't been treated appropriately, could have been even higher.

MYERS: And C-peptide, what about that?

MILAN: It's very stable. It's got a much longer half-life.

It's not as affected.

MR MYERS: Thank you very much.

MILAN: That's okay.

Re-examination by MR ASTBURY

MR ASTBURY: Just so I understand that last point, you were asked a couple of points about what the effect of the sample not being cooled and frozen promptly is. And you have said that the insulin would go down?

MILAN: Yes.

ASTBURY: So in this case, just to go over what you told us, it's the ratio of one to the other that causes concern; is that right?

MILAN: Yes, it is.

ASTBURY: That's why you compare picomoles with picomoles?

MILAN: Yes.

ASTBURY: What ratio would you expect in a normal sample between C-peptide and non-exogenous insulin? What would the typical ratio be?

MILAN: In you or I, who -- I'm not going to assume you're not a diabetic, but I'm not diabetic, it should be five to ten, in the measurements that we use in our laboratory.

ASTBURY: Which should be higher, which should be lower?

MILAN: C-peptide should be higher. It should be five to ten times higher than the insulin. It's got a longer half-life, so it hangs around longer, and it's not as degraded, so that's the normal ratio.

ASTBURY: Okay.

MILAN: In this case I think it's 0.25, so it's --

ASTBURY: So looking at our figures here, 264, C-peptide?

MILAN: Yes.

ASTBURY: 1,099, insulin. It's almost -- it's reversed?

MILAN: Completely, yes.

ASTBURY: The insulin is five times the C-peptide?

MILAN: Yes.

ASTBURY: So if the sample hadn't been chilled or frozen in the right way, the result of that is that the insulin is higher than it might otherwise have been?

MILAN: No. I mean, if it hadn't been treated appropriately, that insulin is lower than it could have been. So it would not change that interpretation.

ASTBURY: So higher than 1099?

MILAN: Yes. If there'd been any degradation, that insulin would have been higher to start off with, so the ratio would have been even further out.

ASTBURY: So even greater than the five we can see?

MILAN: Yes. It doesn't change -- that is -- there is only one outcome for that set of -- that pattern and that is exogenous insulin --

ASTBURY: Okay. We have the benefit of a note of what you say as you say it. Is that what you meant when you said it wouldn't affect the interpretation in this case?

MILAN: Exactly, yes.

ASTBURY: So failing to cool or freeze promptly would only, is this right, have exaggerated the result?

MILAN: If this hasn't been treated appropriately compared to something that theoretically had been treated appropriately, that would have been even bigger, that ratio.

ASTBURY: Dealing with that figure of 1,099, had it been higher, would you have been able to measure it higher than that?

MILAN: Yes, we could have done, yes.

ASTBURY: Do these machines have any limit on the upper range?

MILAN: In can't remember the upper range off the top of my head, but we are able to do dilutions. So if it had been off the top of the scale, we would have then done a dilution to have got an accurate result.

MR ASTBURY: Thank you. I have no more questions. Does my Lord have any?

Questions from THE JUDGE

MR JUSTICE GOSS: Just to satisfy my curiosity in this sense, when you refer to the process of spinning to remove the cells from the sample, is that centrifugal force?

MILAN: It is centrifugation, yes.

MR JUSTICE GOSS: If you put blood, for example, in then you're left with --

MILAN: It separates out the layers.

MR JUSTICE GOSS: Right. Thank you. That's all I wanted to ask. Thank you very much.

Thank you, Dr Milan. That's, I believe, the only time you will -- you won't be required again, you won't have to come back to give any further evidence. You're free to go.

(The witness withdrew)

MR ASTBURY: My Lord, I call Gwen Wark, please.

DR GWEN WARK (sworn)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Can we start with your full name, please?

WARK: Yes, it's Gwen Wark.

ASTBURY: Is it Dr Wark?

WARK: Yes.

ASTBURY: Thank you. I understand that you are the scheme director at the UK National External Quality Assessment Service?

WARK: Yes, that's correct.

ASTBURY: And your specialism, or your particular department, is at Guildford and in the peptide hormone scheme?

WARK: Yes.

ASTBURY: You have a number of qualifications?

WARK: Yes.

ASTBURY: You have a BSc in experimental pathology and biochemistry; is that right?

WARK: Yes.

ASTBURY: A PhD in experimental haematology?

WARK: Yes.

ASTBURY: A masters in clinical biochemistry with molecular biology?

WARK: Yes.

ASTBURY: You, I think, first started in the Department of Clinical Biochemistry at the Royal Surrey County Hospital back in May of 1999?

WARK: Yes, I did.

ASTBURY: You became the scheme director of the Guildford peptide hormone scheme, we've heard it call -- is this UKAS or NEQAS?

WARK: UK NEQAS.

ASTBURY: Back in 2003?

WARK: Yes.

ASTBURY: You've been there ever since?

WARK: Yes.

ASTBURY: But you also have a position as senior lecturer at the Department of Biological Sciences at the Royal Holloway University of London?

WARK: Yes, I do.

ASTBURY: Thank you. You hold a number, and I'm not going to through all of them -- hold a number of memberships in professional bodies --

WARK: Yes.

ASTBURY: -- or various institutes involving clinical chemistry and biomolecular chemistry; is that right?

WARK: Yes, I do.

ASTBURY: Concentrating please, if we may, on UK NEQAS -- am I pronouncing it okay?

WARK: Yes, that's fine.

ASTBURY: Was that a scheme started back in the 1970s?

WARK: Yes, it was.

ASTBURY: And what was the aim of the scheme, please?

WARK: It's to ensure patient safety. It's to make sure that laboratories, when they are testing samples, are getting the correct results. So it's a sort of external peer review of how the laboratory is performing.

ASTBURY: Thank you. I think you touched on it, but what is the primary purpose of the testing regime? For who does it matter?

WARK: It's for patient safety. To make sure we're getting the correct results to ensure that patients get the correct treatment.

ASTBURY: Thank you. Are there commercial laboratories that carry out the same service?

WARK: Yes. There are some commercial suppliers available.

ASTBURY: But you're not a commercial supplier?

WARK: No. We are run from the National Health Service. So we're actually a registered charity. So although the laboratories give us a subscription every year, it goes back into making the samples and paying our staff.

ASTBURY: Right. Is the scheme a voluntary or a compulsory scheme?

WARK: In the UK, it's voluntary.

ASTBURY: We've heard a little bit about this, about the -- how do you go about testing these laboratories and the accuracy of their processes?

WARK: So every 6 weeks, we send out three different samples to the laboratories. So insulin and C-peptide are not very stable. So what we actually do when we make the samples is we make them into a powder, we take all the water out of the clinical samples and then the labs, when they get the samples, add some more water back, then test the samples. They then send the results back to us and we send out a report.

ASTBURY: Do we take it from that, you have the original result from the original sample?

WARK: Before we send it out, we will test it in my peptides laboratory to give us an idea of what the sort of level will be because we don't want to send out samples that are all the same level. We would want to send some that have a lower level and a higher level because that reflects the sort of practice that the labs would see.

ASTBURY: In this case, we're not just considering C-peptide, we're considering insulin as well. Are they specialisms within your unit at Guildford?

WARK: Yes, they are.

ASTBURY: When you send the samples, is there a deadline by which they have to be returned?

WARK: Yes. We give the laboratories 6 weeks to return the results for those three samples.

ASTBURY: When you prepare these samples, do you try to provide a range of challenges for the laboratories?

WARK: Yes, we do. So we try and cover the sort of levels that the labs will encounter in their day-to-day analyses.

So we collect samples from patients like diabetics or just volunteers from people in the hospital. So we'll have some people that will have fasted blood samples, but we will also give people -- sometimes we give them like doughnuts and cake to try and push their insulins up to mimic what happens in real life.

ASTBURY: Do you have a lot of volunteers?

WARK: Oh, for the doughnuts, yes.

ASTBURY: Do you ever add anything to the samples?

WARK: Yes, occasionally we will add things in. So sometimes we will add in, like, insulin preparations that could be prescribed to people to see if the actual insulin assays can detect it.

ASTBURY: So these tests, are they sent out with your laboratory's stickers on them or are they anonymised in any way?

WARK: Each laboratory in the scheme gets assigned a unique number to them. So we don't actually have the name of the laboratory on the reports, there's a number that appears.

ASTBURY: What about the sample they receive from you, is that flagged up as from you or is that not the case?

WARK: They will get a package in the post from us, which will be marked it's from UK NEQAS, and each sample will have a label on it, which sample number it is and that it's from us.

ASTBURY: You told us about the deadline. You have a deadline to return the results by. Are the results then recorded and assimilated?

WARK: Yes. So the results at the time of these reports that were presented, they were coming back mostly by post or fax, rather than email, which happens now.

ASTBURY: Right. How are they then processed at your laboratory in Guildford?

WARK: So we have specialist sort of computer software that takes the results and helps us generate the various reports that were submitted as evidence.

ASTBURY: Okay. I think in this investigation, you helpfully provided the police with -- I'm not going to go through them, they're very detailed, but they're there if anyone wants to -- you provided the Guildford peptide hormones participants' handbook.

WARK: Yes.

ASTBURY: Very briefly, what does that set out, please?

WARK: That just sets out how the scheme works and also the reason I submitted that as evidence is that it has a section at the back that explains what the reports actually mean and also, if you are interested in the statistics side of things, it's got also the maths, how we derive the scores.

ASTBURY: Right. You also provided, I think, four examples of reports that had been provided to the Royal Liverpool Hospital?

WARK: Yes.

ASTBURY: Are they the reports which give the hospital feedback as to their accuracy or otherwise?

WARK: Yes.

ASTBURY: Is that the way in which you monitor their accuracy, by preparing those results?

WARK: Yes.

ASTBURY: Now, two of those dates, again, may be significant for this particular trial. One of the reports you provided was dated 17 July 2015. Another report that you provided was dated 6 April 2016.

WARK: Yes.

ASTBURY: When you prepare these reports, do the laboratories have a target which they have to achieve?

WARK: Yes. We have two targets that they have to achieve.

One is called bias and they've got to be within 25%.

Another one is called VAR, which is variance. That again is a target of 25%.

ASTBURY: All right. Do the reports that you provided effectively plot the results, your results and the subject laboratory results on a graph?

WARK: Yes, they plot the results.

ASTBURY: I don't want to oversimplify it, you tell me if there's more detail to it. Does that enable you to plot whether the laboratory, subject laboratory's performance is acceptable or not?

WARK: Yes.

ASTBURY: In the reports you've provided, were the Royal Liverpool Hospital inside the relevant target field?

WARK: Yes, they were.

ASTBURY: Is that in all of the reports you provided?

WARK: Yes, it was.

ASTBURY: You may be taken to them in more detail, but can I ask this: based on those reports, based on your records in the laboratory in Surrey, are you able to comment on the accuracy, efficiency or otherwise of the laboratory at the Royal Liverpool Hospital?

WARK: With those reports, the actual laboratory was performing very well.

ASTBURY: Thank you. That's in relation to both of the criteria that you explained?

WARK: Yes, it was both.

MR ASTBURY: Thank you, Dr Wark. If you could wait there, please.

Cross-examination by MR MYERS

MR MYERS: I'm going to ask a little bit about the scheme and how it runs in a moment, but before I do, can I just ask you about this. You said in your evidence that insulin and C-peptide are not very stable.

WARK: Yes.

MYERS: With regard to C-peptide in particular, could you enlarge for us what you mean when you say C-peptide is not very stable?

WARK: Certainly for my own laboratory, we -- normally for blood samples, for insulin and C-peptide, we would request them to come to the laboratory, to be spun down within an hour, and we freeze them straightaway. If there is any delay in getting spun down, that gets notified. The stability of samples does vary from the method that is used to measure the insulin and C-peptide.

MYERS: So far as C-peptide is concerned, are you able to tell us if a sample isn't spun and/or frozen within an hour, what's the potential impact of that on the C-peptide analyte?

WARK: C-peptide is actually more stable than insulin is in practice, so we don't tend to see that much of a loss of the C-peptide. So for example, in my own laboratory, we have a different method to what Liverpool have, but once we spin the sample for insulin, it's stable for 24 hours in the fridge, but C-peptide is stable for 72 hours in the fridge.

MYERS: Right. So it's more stable than the insulin?

WARK: Yes.

MYERS: Thank you. With the scheme -- is it NEQAS?

WARK: Yes.

MYERS: The NEQAS scheme, the purpose of that is to confirm the accuracy of lab test results in relation to insulin and C-peptide, isn't it?

WARK: Yes.

MYERS: And that's done by sending out the labs periodically three test samples that they can be measured against; is that right?

WARK: Yes.

MYERS: Then you can prepare at Guildford a report into how that lab has performed within its own history of results against your tests and also by comparison with other labs?

WARK: Yes, that's the good thing about this sort of way of assessing: you can compare yourself against other people using your own method and also to other different methods too.

MYERS: Right. The whole system relies upon at various stages the steps being done accurately; is that fair to say?

WARK: Yes.

MYERS: Are you dependent to any extent of the accuracy of the donors, the information provided by donors of the samples you're using?

WARK: So for our donors, we do get information if they're on certain medications. It's one of the things we would ask for because we know there are differences in the way insulin assays picks up the different insulins that are prescribed.

MYERS: Right. But do you require accuracy, of course, in the way that the samples are taken from those donors?

WARK: So we have a standardised protocol that we have.

We have a special ward at our hospital where our donors get bled. And then the samples will come up to our laboratory after they've been allowed to clot. We then spin them down and then put them in our freezer and then we will put them into little glass vials when they're ready to be sent out to people.

MYERS: Are there particular potential blunders and their correction that you have to look out for and be careful about as you go through?

WARK: Not at that point. It's when the results come back is when we look and see whether there's any results that seem wildly out. So sometimes there can be issues with the way people report results, eg the reporting units can vary like a factor of a thousand. So if we see something out by a factor of a thousand, we contact the lab just to check whether that was the case.

MYERS: With the samples that you checked, the reports for this case, there are two dates in particular I'm going to ask you about which reports relate to these. We have a sample that was taken on 5 August 2015. This is at the hospital.

WARK: Okay.

MYERS: And a sample that was taken on 9 April 2016. Just to assist everybody to keep track, 5 August 2015 was the [Baby F] sample. You're probably there already.

9 April is the one we're looking at right now during the trial, which is [Baby L].

Just to assist us, Dr Wark, can you help me with one of the reports that relate to those -- do you have your statement there?

WARK: No, I haven't.

MYERS: It will help you perhaps if we just put up, for you to look at, page 5039.

MR JUSTICE GOSS: It's not in the paper files. It's going to come up on the screen, we hope.

MR MYERS: It's in the statements, Mr Murphy, and it's just for Dr Wark to see, his Lordship and the lawyers.

If you just look there, I'd like you to help us with which of the reports would relate to these.

Taking first of all the sample taken on 5 August 2015, can I just confirm with you which of the ones there is the report that covers that period?

WARK: So that would be GW/04 because they had to submit results by 26 August.

MYERS: So 5 August 2015 falls within that six-week period?

WARK: Yes.

MYERS: Thank you. When we're dealing with 9 April 2016?

WARK: So that would be the one above because they had to get the results in by 6 April 2016. That is reference number GW/03.

MYERS: Just taking the first of those then, so I can follow this, the report you do in which you review how the hospital has been performing was published on 26 August 2015?

WARK: Yes.

MYERS: And obviously, the date for the [Baby F] sample, which is 5 August 2015, falls within the 6 weeks leading up to that, doesn't it?

WARK: Yes.

MYERS: Right. When we come to the [Baby L] sample, that sample is taken on 9 April 2016. The report you're referring to here is published on 6 April 2016, isn't it?

WARK: Yes. That's before. There is a subsequent report to that because they do submit results every 6 weeks.

MYERS: So that would be in another report?

WARK: That would be another report.

MYERS: But it's not, as it happens (overspeaking) --

WARK: It is not here as evidence, no.

MYERS: As it happens, it's not one of the ones we're actually looking at here, is it? 27 May 2016. Right.

As to the variation within it, there can be a bias within 25%; is that correct?

WARK: That is the set criteria, yes.

MYERS: Right. And a variation of 25%?

WARK: Yes.

MYERS: So if we just -- so we can understand, if we look at the report that covers the period for [Baby F], which is GW/04, I'm going to ask if you can be shown, and this can go on the screen, so we have an idea of what this looks like, page 28963 from the exhibits.

This is the first page of the report GW/04, which is your report up to 26 August 2015. Is this the summary of the analysis?

WARK: That's the very -- yes, the cover page that sort of summarises everything for the laboratory.

MYERS: So in that period, for instance, when it's insulin, the bias is up to plus 13.5?

WARK: Yes. And the VAR is 8.2.

MYERS: Which is within the 25%?

WARK: Well within.

MYERS: Thank you. So there's no mystery, similarly, if we're dealing with the [Baby L] 9 April result, that's in GW/05, you told us -- I'm going to ask Mr Murphy to put up the page of summaries from that, which is at 28975.

The same process. If we look at insulin, for example, it says:

"Bias: plus 19.4. Variation: 4.5."

WARK: Yes.

MYERS: So that's still within 25%.

WARK: Yes.

MYERS: So there's some movement, but there's a range within which it can fall?

WARK: Yes.

MR MYERS: All right. Thank you, Dr Wark.

Re-examination by MR ASTBURY

MR ASTBURY: Two matters, please, just to clarify with you, please. Those variances that you've just been -- had your attention drawn to, they are within the acceptable national level?

WARK: Yes, they are.

ASTBURY: Would they affect the -- you haven't seen the samples that this jury are concerned with?

WARK: No, I haven't.

ASTBURY: But would they affect the interpretation of the ratio, for example, between insulin and C-peptide in any given sample?

WARK: No.

ASTBURY: Thank you.

Lest I've created any confusion over the dates of the reports that you've provided, can we just clarify this, please. The first sample that this jury are concerned about is dated 5 August 2015. That's not a sample you've ever checked in your laboratory, that's only been in Liverpool. But you provided the reports --

WARK: Round about that time.

ASTBURY: Yes, to reflect Liverpool's performance, dated 17 July 2015, so the 6 weeks up to that date?

WARK: Yes.

ASTBURY: So before the sample was taken?

WARK: Yes.

ASTBURY: No issues?

WARK: No issues.

ASTBURY: You have then provided the report 6 weeks later, dated 26 August 2015, which spans the period of that sample, no issues?

WARK: No issues.

ASTBURY: Thank you. And similarly, the other sample that this jury are concerned with is 9 April 2016. You provided to the investigation, firstly, the report dated 6 April 2016?

WARK: Yes.

ASTBURY: So that's the 6 weeks, almost to the day, leading up to that sample being taken, give or take a few days. And then you provided the report dated 27 May 2016, 6 weeks later --

WARK: Yes.

ASTBURY: -- spanning the period of the 9th?

WARK: Yes.

ASTBURY: In fact, the 11th, which is when it was analysed at the laboratory.

WARK: Okay.

MR ASTBURY: Thank you. I'm sorry if I've caused any confusion there.

I have no more questions, my Lord.

MR JUSTICE GOSS: I have no questions. Thank you very much, Dr Wark, for coming and giving your evidence in relation to these issues. That completes your evidence. You won't be required again. You're free to go. Thank you.

WARK: Thank you.

(The witness withdrew)

MR ASTBURY: My Lord, we're going to revert to some reading in a moment. Can I hand up an additional bundle that we'll move to and just have a moment while we find our bundle, please.

MR JUSTICE GOSS: Yes.

(Handed)

Witness statement of DR SARAH DAVIES (read)

MR ASTBURY: Could we begin, please, at page 15 of my Lord's bundle. It's a statement by Sarah Louise Davies. She says as follows:

"I'm employed by Liverpool" --

MR JUSTICE GOSS: Sorry, it's a statement dated 4 November 2021, not that that's any great significance.

MR ASTBURY: No. Thank you for completing it:

"I am employed by Liverpool University Hospital Trust and work within clinical chemistry. I have worked with this department since August 2013. In 2016 my role was a band 7 clinical scientist. My function in that role was to clinically review the results of biochemistry tests, authorise and report results back to the requester. All results were reported to the requester by a paper record and electronically. If a result required more urgent clinical attention then results were also verbally reported by a telephone call.

"Today I have been shown two documents by DC Makin of Cheshire Police."

I don't think we need to go back to these. These are the documents Dr Milan provided.

AM/04, a screenshot of call information dated 4 April 2016, including advice and information regarding [Baby L], and AM/03, the screenshot of the insulin C-peptide results for [Baby L], born 8/4/2016:

"The above two documents relate to the testing of a sample submitted to Liverpool University Hospital for insulin C-peptide tests, submitted from the Countess of Chester Hospital in relation to a patient named [Baby L].

"The sample was taken on 9 April 2016 and submitted to Liverpool on 11 April 2016. The sample was analysed within a batch of similar samples on 13 April 2016. If a sample is requested on an urgent then they can be tested individually. There is no record of an urgent request to expedite the testing in this case.

"The samples are tested within a laboratory by a biomedical scientist and the results are then technically validated, which tests the accuracy of the sample testing machinery and the results.

"The results then come through to me for review on 14 April 2016. Having referred to document AM/03 today, I can say the results showed a C-peptide level of 264 picomoles per litre, an insulin of 158..."

I'm afraid I don't understand the measurement, but it may not be too important.

MR JUSTICE GOSS: Let's not worry about that measurement.

MR ASTBURY: "... also 1,099 picomoles per litre.

MR JUSTICE GOSS: We've been working on the picomoles.

MR ASTBURY: It's that ratio that the prosecution say is important:

"I have reviewed those results and noted that the request form stated hypoglycaemia. There was no detail on the request form of blood or glucose level at the time the sample was collected. To enable full interpretation of the results, a blood glucose level at the time of collection would be required. Having reviewed the insulin figure, I considered that if the sample had been collected during a period of hypoglycaemia, then this insulin value would have been inappropriately high.

"Due to this, I decided to telephone the results to the biochemistry lab at Chester rather than leave the reporting solely to the electronic system and a paper copy being sent as there may have been a clinical need for these results to be acted upon more quickly.

"Document AM/04 is an electronic record of the telephone call I made to the Chester lab. This is standard practice for any verbally communicated result. AM/04 details a call made 09.38 on 14 April 2016 to Shirley Bowles. On this record there is a section for advice and information that is given during the phone call. I have recorded this advice as:

"'Difficult to interpret without concurrent glucose but may be inappropriate if patient was hypoglycaemic at the time of collection.'

"This is a summary of the telephone conversation. The reason I decided to telephone the results was to inform the lab at Chester so that they could assess the patient armed with these

results alongside their knowledge of the patient's hypoglycaemia and blood glucose levels."

Witness statement of MS KAREN MORRIS (read)

MR ASTBURY: My Lord, the next statement is from Karen Morris, please. Karen Morris says this in a statement dated 13 October 2021:

"I am the above named person and reside at the address overleaf. I am employed at the Countess of Chester Hospital as lead pharmacy technician, medicines purchasing, distribution and home care. That means I am responsible for the purchasing of medicines, the safe handling of medicines, and distribution throughout the trust and to external customers.

"I have been employed at the Countess since 1991 and I have been in my current role since 2018. I have been asked about what insulin is used in the NNU at Chester and about stock levels and how they are replenished.

"In 2015 and 2016 Actrapid was the only insulin used on the NNU and still is. It is a fast-acting insulin and comes in a 10ml vial which contains 100 units per millilitre.

"I have been asked about insulin stock levels on the NNU in 2015 and 2016. The way it worked back then was a member of the pharmacy team would attend the NNU once a week on Friday and assess what amounts of what we call stock drugs were required. They would then come back to the pharmacy, gather together the drugs they needed and replenish the NNU stocks later that day. This included insulin.

"Alternatively, NNU staff could complete a stock requisition book requesting extra if they needed it, but unfortunately we don't have those papers records anymore and we have now moved on to a computer-based system.

"I have been able to print off for DC Birch reports that cover 2014, 2015 and 2016 that show stock issues of insulin to the NNU each month.

"The 2014 report shows one vial of Actrapid issued in January, one in April and one in November; a total of three for that year.

"The 2015 report then shows no more was required until May 2015 when one vial was issued with a further one in August.

"Two were issued in October and November 2015."

The statement says that is a total of six for that year, but I make it four: one in May, one in August and -- oh, two in both October and November. That's right. That's a total of six, sorry.

MR JUSTICE GOSS: Yes.

MR ASTBURY: Two in October.

MR JUSTICE GOSS: In both those months.

MR ASTBURY: Thank you, a total of six of that year:

"In 2016 a vial was issued both April and July, a total of two for that year."

That concludes her statement.

Witness statement of MR IAN ALLEN (read)

MR ASTBURY: My Lord, can I go next, please, to Ian Allen, which is page 20 of the additional bundle. This is a short statement from Ian Allen, who was the principal pharmacist. It's dated 21 November 2019.

"Further to my previous statements, I have the following to add."

The jury will remember Mr Allen from, I am sure, a previous baby:

"Following a request from Cheshire Police I have provided to them two 500ml 10% glucose bags. They are used as fluids for neonatal babies and as a dilutant for medicines to be given to babies as required. The bags come in either 500ml or 1,000ml. The percentages are to indicate how many grams of glucose are contained within the bag. The liquid in the bag is water and the glucose is dissolved within the water. The percentages available are 5%, 10%, 20%, 30%, 40% and 50%. The standard dosage for neonatal babies is 10%, the percentage indicating how many grams relates to each 100 millilitres. So 10% means 10 grams of glucose per 100ml. So in the case of the sample bags provided to Cheshire Police, namely 500ml, there are 50 grams of glucose contained within each bag."

MR JUSTICE GOSS: Although the available percentages go up to 50%, we've heard that at the material time, the only bags available were either 5% or 10%.

MR ASTBURY: Yes. And the odd 12.5 and 15 wouldn't fit in.

MR JUSTICE GOSS: Exactly. They had to be made up, those, specifically with more concentrate added.

MR ASTBURY: As we saw on the video --

MR JUSTICE GOSS: Exactly. So although there's reference there to 20%, 30%, 40% and 50% bags, we don't need to pay any attention to that.

MR ASTBURY: Thank you.

MR JUSTICE GOSS: Just so that you're not confused by it.

Witness statement of DR STEPHEN BREAREY (read)

MR ASTBURY: The next statement is from Dr Stephen Brearey.

In his statement dated 17 October 2018 he says:

"Following a request from Cheshire Police I conducted a review of baby records. The review highlighted [Baby F] and [Baby L] who had unusually high insulin levels and low C-peptide levels, suggestive of the babies having received exogenous insulin.

"I am not aware that insulin was prescribed for these babies. I obtained the blood result for [Baby L] from the trust Meditech system, which I now produce into evidence."

If I could just ask Mr Murphy, please, to go to tile 190 on [Baby L]'s sequence of events chart, please.

If we can scroll down. It's not this document, in fact. If we go down again. My Lord, it's this printout. We can see by the consecutive numbers -- the J numbers are still marked. We can see the J number, Mr Murphy. I think it's at the top rather than the bottom, unhelpfully. Back to the printout, sorry.

There we go.

If we go down -- I'm confusing things here. That's the printout. Then the label identifying it as Dr Brearey's exhibit appears below. As he says in his statement, it is given the reference SB/18:

"The result of this blood test would not have been immediately available to the doctor who requested it and I am unsure exactly when the result was available from the laboratory.

"The patient case notes for [Baby L] record that Dr Jessica Burke reviewed [Baby L] on 15 April 2016 and recorded the insulin and C-peptide result. This is likely to be the time the

result became available for viewing. If a baby is still on the NNU then junior doctors on the NNU will be responsible for checking the results and acting on them.

"Junior doctors look on the Meditech reporting system to check recent results. If the laboratory consider a result needs immediate action for certain results, they will phone the clinical team with the result and note this on the Meditech results page. If the result is reported after the baby has been discharged, a paper copy of the result is forwarded to the named consultant for the baby. I don't know when [Baby L]'s insulin result was reported and who received the result."

My Lord, there's one more statement to read and then the summary of the relevant interview relating to [Baby L], but I wonder whether, if there's to be a break, could we have a short break now for technical reasons?

MR JUSTICE GOSS: Yes. In other words, you would like to have a break. We will have a break. I know we started a bit late, but we'll just have a ten-minute break for comfort reasons, apart from anything else. Thank you very much.

(In the absence of the jury)

MR JUSTICE GOSS: Two iPad issues for the jury. I could overhear the usher. So if you can address them during the break, that would be very helpful. Thank you.

Sorry to trouble you, Mr Murphy.

(12.04 pm)

(A short break)

(12.17 pm)

MR DRIVER: My Lord, apologies for the delay. An oversight on my part.

MR JUSTICE GOSS: Not a problem. Thank you.

(In the presence of the jury)

Witness statement of MS GEMMA WEBSTER (read)

MR ASTBURY: My Lord, may I read one more witness statement, please, in the case of [Baby L]. It's a statement from Gemma Louise Webster dated 19 March 2018. She says:

"I am lead pharmacist for the Women and Children's Department for the Countess of Chester Hospital and have worked at the Countess of Chester Hospital for the last 12 years. I have been asked to comment with reference to insulin within the Countess of Chester Hospital and can say as follows.

"Insulin. Insulin is not a controlled drug as defined within the Misuse of Drugs Act 1971 and within the trust's extension of other drugs that the accountable officer deems high risk or open to abuse.

"The Countess of Chester Hospital holds a variety of insulins, some are fast-acting whilst others are slower-acting. Other insulins are a mixture of the two.

"Vials. Insulin comes in a variety of different sizes depending on how it is being used, where it is being used, and the device that is intended to be used to administer the drug.

"Insulin vials within wards at the Countess of Chester Hospital are 10ml for multi-dose use. Each vial has a strength of 100 units per millilitre.

"The neonatal unit has 10ml vials for multi-dose use. The children's ward has 10ml vials for multi-dose use as well as 3ml cartridges designed for use with an insulin pen. Both have strength of 100 units per millilitre.

"Doses. There is no standard dose of insulin. Everyone has a different response to insulin. Their food intake and body weight is different and everyone naturally produces different levels of insulin. Dosage of insulin for inpatients within the hospital is normally based on their insulin requirements prior to admission into hospital as well as measuring their blood sugar levels while in hospital.

"Insulin is also used for patients who do not have diabetes but have high potassium levels and is used to reduce such levels. Adults and children will self-administer insulin or it can be administered by a nurse.

"The strength of insulin for use by adults can range between 100, 200 and 300 units per millilitre. Dosage of insulin to babies within the neonatal unit is based on the baby's weight as well as their blood glucose levels. The insulin for babies within the neonatal unit is administered as a continuous infusion, usually of three different strengths, which are 0.2 units per millilitre, 0.5 units per millilitre and 1 unit per millilitre.

"The doses are adjusted according to their blood glucose levels, which are monitored every 30 to 60 minutes until within range or after any dose changes and then four-hourly thereafter. The prescribing and administering of insulin to any patient should be recorded on their prescription charts which are held within the medical notes."

That concludes her statement, my Lord. I should have said it was at page 21.

MR JUSTICE GOSS: Yes, thank you. Virtually the first thing to which you referred from that statement:

"Insulin is not a controlled drug as defined within the Misuse of Drugs Act 1971 and within the trust's extension of other drugs that the accountable officer deems high risk or open to abuse."

Does that mean "or" or is it -- I don't quite understand that second part.

MR ASTBURY: My understanding of the statement is that it falls into neither category: it's neither a controlled drug under the --

MR JUSTICE GOSS: So it should be "or" rather than "and"?

MR ASTBURY: I think so.

MR JUSTICE GOSS: Is that agreed?

MR MYERS: It is agreed. We can make the enquiry to confirm if your Lordship wishes. But certainly --

MR JUSTICE GOSS: It doesn't actually make sense as it is.

MR MYERS: One could be read as a positive and the other as a negative.

MR JUSTICE GOSS: Exactly.

MR MYERS: We can confirm that in any event so there can be no doubt.

MR JUSTICE GOSS: Yes.

Then the only other thing is in relation to this statement:

"The Countess of Chester Hospital holds a varieties of insulins, some are fast-acting while others are slower-acting."

We've heard evidence that there was only Actrapid there.

MR ASTBURY: In the NNU. I think that's a reference to the hospital.

MR JUSTICE GOSS: So that's the hospital as a whole?

MR ASTBURY: Yes.

MR JUSTICE GOSS: But the NNU only has Actrapid.

MR ASTBURY: That's how I read it and how I understand the evidence.

MR JUSTICE GOSS: It potentially can cause confusion, that.

Right.

MR JOHNSON: Thank you. A bit more housekeeping, please, first, if we may, before I turn to the interview summary in the case of [Baby L]. There are one or two pages missing from the jury's divider 15 in jury bundle 2.

MR JUSTICE GOSS: Right, thank you. I'll wait until they've been distributed for your instructions, Mr Johnson, as to where we're going to put these within section 15.

MR JOHNSON: Ladies and gentlemen, if you go to section 15, the first page to go in will be 17998, which is Dr Ukoh's note, handwritten note. You may want, just to avoid any confusion, to write on it yourself "This was written on the back of 18000", which is the next page.

The way these have been numbered is in effect the wrong way round. If you think about it, the front of the document is blood gas record, which is page 17998 -- sorry, no, it isn't.

MR JUSTICE GOSS: No, no.

MR JOHNSON: I'm making a mistake now. Sorry. This was on the back of 17997. So that was right, yes. I'm confusing myself, sorry. So written on the back of 17997.

The other page is to go at the back of divider 15.

It's page 26995. The very final page is actually page 26996. If you put it in before 26996, please. The reason we've given you this is because it makes page 18026 more legible. It's in effect a copy of the material on page 18026, but in a more legible format.

It doesn't give you anymore information, really, but it's more readable.

You may recall that as we were dealing with documents on the screens, we actually referred to that one from time to time, so it just gives you everything in paper copy.

If you've done that, I'll now read to you a summary of what Lucy Letby said in various interviews about the case of [Baby L].

Summary of interview with LUCY LETBY re [Baby L] (read)

MR JOHNSON: When she was first interviewed on 10 June 2019 about the case of [Baby L], Lucy Letby recalled attending at [Babies L & M]'s delivery but didn't remember much of their treatment thereafter. She was shown entries within [Baby L]'s notes and agreed that she had made a number of them. She'd conducted hourly observations throughout the shift on 8 April 2016 and there were no concerns for [Baby L].

Lucy Letby agreed that his blood sugar levels were low, explaining that anything under 3 is low. Whilst she wouldn't necessarily have expected this reading, it didn't come as a huge surprise. It could happen if a baby was cold or stressed at delivery. As an IUGR baby and a small baby she said they sometimes do have low blood sugar and that additional glucose and/or feeding would usually resolve the issue.

Looking at the prescription charts, she explained that whoever was logged into that baby's chart would appear as the administrator and whoever assisted would appear as co-signer. It didn't necessarily follow that that was an accurate reflection of the roles.

She couldn't recall if she gave [Baby L] medication at 15.09 hours on the afternoon of 8 April or whether it had been Mary Griffith. She did, however, agree that she had had significant involvement in [Baby L]'s care.

Lucy Letby said that a neonate would only be given insulin in the event of high blood sugar levels and that was not uncommon. She was familiar with the hospital's hyperglycaemia pathway, in other words high blood sugar -- well, I think it should say "hypoglycaemia"

policy pathway" -- to manage low blood sugar readings, and she was competent in this regard. It would be for a doctor to manage such a situation and to make decisions concerning the administration of insulin.

Lucy Letby would not have had decision-making responsibilities in that regard.

MR JUSTICE GOSS: Just pausing there, it should definitely be hypoglycaemia.

MR JOHNSON: Yes.

MR JUSTICE GOSS: You don't have a written copy, I have a written copy of this: low blood sugar, hypo.

MR JOHNSON: Correct.

Lucy Letby explained the specific process by which insulin would be administered if prescribed, requiring two nurses, one of whom would be sterile.

She said that although insulin was kept in a locked fridge on the unit in the equipment room of the NNU, the keys were not allocated to any individual and were simply passed between registered nurses and nursery nurses. She said that if you needed access to the fridge, you'd have to ask around the members of staff as to who had the keys and then the keyholder would either come with you to the fridge or give you the keys. There was a set of keys for use and a spare set of keys in the office for an emergency.

The fridge contained a variety of medication including antibiotics. There was no record of who had the keys or a requirement to keep a log of what was removed unless they were controlled drugs.

Asked about infusion bags, Lucy Letby said it was very rare that anything would be added. It would be added using a syringe via the port in the bag itself.

Any such addition would have to be prescribed by a doctor.

Lucy Letby denied deliberately administering insulin to [Baby L] and said that, to her knowledge, neither she nor Mary Griffith had accidentally administered insulin to [Baby L]. Lucy Letby did not believe that a mistake could have been made by administering the wrong medication with two people signing for the drug.

When it was suggested that the insulin was a deliberate act of sabotage, Lucy Letby replied, "That wasn't done by me". When asked if there was any explanation for the insulin in [Baby L]'s circulation, she thought it must have been in one of the bags or the fluids he was already receiving. She denied that she was

responsible for this. She was aware that prolonged low blood sugar levels could lead to brain damage and even death.

During the interview of 10 November 2020, Lucy Letby was asked about her telephone messaging after [Baby M]'s collapse, which had occurred on the same day. She agreed that she had thanked Mary Griffith for her help and support and she'd also messaged [Nurse E] to state that the unit was understaffed with a poor mix of skill sets during this set of shifts.

The understaffing was something that was regularly discussed amongst nursing staff and shift leaders.

So that's the [Baby L] position.

My Lord, moving on to [Baby M], we're going to put over, if we may, the expert evidence relating to [Baby L] until the conclusion of [Baby M]'s case, largely for logistical reasons, because Professor Hindmarsh can't be with us in the first part of this week. So in order to fill the time, we're going to move on to [Baby M]'s case now.

MR JUSTICE GOSS: All right. Understood. So there's still the expert evidence in relation to [Baby L], but that's going to wait until Professor Hindmarsh is available.

So we'll move on. There's a close connection between the cases in terms of events, in any event, obviously.

MR JOHNSON: Quite.

MR JUSTICE GOSS: So no difficulty there.

MR JOHNSON: No. Thank you. I'll call Kate Tyndall, please, to deal with the sequence.

MRS KATE TYNDALL (recalled)

Examination-in-chief by MR JOHNSON

MR JOHNSON: Welcome back. Would you just confirm your identity for the sake of the recording, please?

TYNDALL: Kate Tyndall, intelligence analyst.

JOHNSON: Thank you, Mrs Tyndall. Are you responsible for the production of the sequence of events in the case of [Baby M]?

TYNDALL: Yes.

JOHNSON: Thank you. This is count 16, my Lord.

At tile 1, have you put into the sequence [Baby L]'s birth at 10.13?

TYNDALL: Yes.

JOHNSON: He arrived a minute earlier than [Baby M], who in tile 2, as tile 2 shows us, was born at 10.14 on Friday, 8 April 2016.

TYNDALL: Yes.

JOHNSON: You have recorded there, if we just look at it, please, if we click on the tile, Mr Murphy, that:

"[Baby M] was born in good condition, crying, blue, good tone. Slow to pink up and occasional shallow breathing. His saturations were 60%, 3.5 minutes, albeit his heart rate remained at over 100 throughout. He was given five inflation breaths at 3.5 minutes."

Is that right?

TYNDALL: Yes.

JOHNSON: And then his sats improved, he pinked up and at 10 minutes, his saturations were 93%.

TYNDALL: Yes.

JOHNSON: The Apgar scores were 9 at 1 minute, 9 at 5 minutes and 10 at 10 minutes?

TYNDALL: Yes.

JOHNSON: Thank you. Tile number 3 records the admission of [Baby M] to the neonatal unit at 10.30?

TYNDALL: Yes.

JOHNSON: Tile number 4 records the fact that at that stage [Baby M]'s designated nurse was Amy Davies?

TYNDALL: Yes.

JOHNSON: And tile number 4 records [Baby M]'s vital signs at the time of his admission to the neonatal unit?

TYNDALL: Correct.

JOHNSON: Thank you. Tile number 6 is some blood gas results?

TYNDALL: Yes.

JOHNSON: Then tile number 7, timed at 11.15 hours, is Dr Bhowmik's clinical notes recording the circumstances of [Baby M]'s delivery?

TYNDALL: Yes.

JOHNSON: Is that right?

TYNDALL: Yes, that's right.

JOHNSON: And much of the material that we have already referred to in the previous couple of tiles?

TYNDALL: Yes.

JOHNSON: Just a different source for the same information. At tile number 8 is a continuation of Dr Bhowmik's notes; is that right?

TYNDALL: Yes, detailing her impressions and plan for him.

JOHNSON: Yes. Tile number 9, also at the same time, this time under the name of Dr Barrett, who's a junior doctor, records the insertion of a peripheral intravenous line, is that right --

TYNDALL: Yes.

JOHNSON: -- at the first attempt? Tile 10, at 12.00 hours, [Baby M]'s vital signs recorded?

TYNDALL: Yes.

JOHNSON: And at the same time the administration of -- I can't say this -- phytomenadione or something like that.

TYNDALL: Something like that, yes.

JOHNSON: We can see it written on the page anyway. Tile 12 is the fluid balance chart, also timed at noon?

TYNDALL: Yes.

JOHNSON: And tile 13 is the neonatal infusion prescription chart relating to the administration of dextrose at the rate of 3ml per kilogram per hour?

TYNDALL: Yes.

JOHNSON: Tile 14, timed at 12.23, concerns the taking of some blood for analysis?

TYNDALL: Yes, for bacterial samples.

JOHNSON: Yes. And as we've seen in the case of his brother, I think, no bugs were grown in that blood after 5 days?

TYNDALL: Correct.

JOHNSON: Tile 15, at 12.37, a further sample ordered for bilirubin, CRP and a full blood count?

TYNDALL: Correct.

JOHNSON: You have recorded the details of that analysis, but we'll leave that for the medics to interpret in due course.

Tile 16, at the same time, a gas sample or blood result sheet with results recorded?

TYNDALL: Yes.

JOHNSON: At tile 17, Dr Bhowmik's clinical notes --

TYNDALL: Yes.

JOHNSON: -- concerning the commencement of intravenous antibiotics for jaundice?

TYNDALL: Yes.

JOHNSON: At tile 18, more blood gas results?

TYNDALL: Yes.

JOHNSON: Then tiles 19 and 20, at 12.45 and 13.00 hours respectively, the taking of a sample and [Baby M]'s observations?

TYNDALL: Yes.

JOHNSON: Also at 13.00 hours, tile 21, the neonatal fluid balance chart?

TYNDALL: Yes.

JOHNSON: In that period of time that we've just dealt with, then at tile 22 do you record the fact that between 11.13 and 12.09 there had been text messaging between Lucy Letby and [Nurse A] and [Nurse E]?

TYNDALL: Yes.

JOHNSON: Do we come next to a message which is timed at 12.09, so I think it's -- sorry.

TYNDALL: 12.28, the message.

JOHNSON: Yes, sorry, it's the next one. I think it's slightly out of sequence, isn't it?

TYNDALL: That one is slightly out of sequence to provide the context to the ones that follow.

JOHNSON: Yes, okay. Is tile 23 a message from [Nurse A] to Lucy Letby timed at 12.28?

TYNDALL: Yes.

JOHNSON: Does she pose the question for Lucy Letby:

"Only if you get chance, could you let me know who's in management and ward-wise on Tuesday. I feel crap. Like a failure. Like I'm letting you all down."

TYNDALL: Yes.

JOHNSON: And did that then provoke a response from Lucy Letby at 13.05 at tile 24?

TYNDALL: Yes, it reads:

"GP signed you off? I haven't had chance to look. It's mad. Don't feel like that. It can't be helped and you've got to put yourself first and get yourself well."

MR JUSTICE GOSS: We've gone through these in the --

TYNDALL: Yes.

MR JOHNSON: Yes.

MR JUSTICE GOSS: I'm not saying all of them, but these two certainly.

MR JOHNSON: And the next couple as well, yes.

TYNDALL: Yes, all of the text messages in this sequence are in [Baby L]'s.

MR JUSTICE GOSS: Could you say that a bit louder? I think you were almost whispering there to Mr Johnson.

You're basically saying that all these text message tiles are also in [Baby L]'s, so that's why they were ringing bells --

TYNDALL: Yes.

MR JUSTICE GOSS: -- to me and no doubt to you, that we've already seen them.

MR JOHNSON: I'm sure. We'll skate over them if we can then.

MR JUSTICE GOSS: We will note them but no need to read them all out.

MR JOHNSON: Up to tile 26 is a continuation or a further conversation with [Nurse E].

TYNDALL: Yes.

JOHNSON: And then at tiles 27, 28 and 29, they're all timed at 14.00, do they concern Dr Bhowmik's updating of [Father of Babies L & M]?

TYNDALL: Yes.

JOHNSON: Amy Davies, who's the nurse, her conversation with [Father of Babies L & M]?

TYNDALL: And [Mother of Babies L & M], yes.

JOHNSON: And then at tile 29, [Baby M]'s vital signs?

TYNDALL: Yes.

JOHNSON: Still at 14.00 hours, tile 30, [Baby M]'s fluids?

TYNDALL: Yes.

JOHNSON: Then a record at tile 31 of continuing text messaging, social type text messaging, between 13.08 and 14.39?

TYNDALL: Yes.

JOHNSON: The next three tiles, that is 32 through to 34, are all timed at 15.00 hours; is that right?

TYNDALL: Yes.

JOHNSON: They record [Baby M]'s vital signs, his fluids, and medication given to him in the form of gentamicin?

TYNDALL: Yes.

JOHNSON: At tiles 35 and 36, timed at 15.09 hours, is that the paperwork or the prescriptions for gentamicin and benzylpenicillin?

TYNDALL: Yes, they're the electronic prescriptions.

JOHNSON: These are signed and co-signed by Amy Davies and Lucy Letby?

TYNDALL: Yes.

JOHNSON: Tile 37, timed at 15.46, is that a pathology sample sent for MRSA screening?

TYNDALL: Yes.

JOHNSON: Which has the name of Lucy Letby attributed to it.

At tiles 38 and 39 and indeed 40, do we have three tiles relating to [Baby M]'s vital signs, his blood glucose at 4.6, and the neonatal fluid balance chart?

TYNDALL: Correct.

JOHNSON: At tiles 41 and 42, do we have further observations and blood gases relating to 18.00 hours on Friday, 8 April?

TYNDALL: Yes.

JOHNSON: At 18.15, on the neonatal fluid balance chart, this is tile 43, do we see that [Baby M]'s blood sugar had dropped to 2.2?

TYNDALL: Yes.

JOHNSON: As indeed it had, as a matter of fact, on the previous tile, 42, in the blood gas results?

TYNDALL: Yes.

JOHNSON: Are there then two tiles with social type messaging between Lucy Letby, [Nurse E] and [Nurse A] --

TYNDALL: Yes.

JOHNSON: -- which we've seen before?

Then at tiles 46 and 47, timed at 18.40, do we have a bilirubin level reading for [Baby M] together with the same material from the lab?

TYNDALL: Yes.

JOHNSON: Thank you. Moving on to tile 48, do we have Amy Davies' nursing note update concerning the time between [Baby M]'s admission to the neonatal unit at 10.30 that morning and the time, which is 18.52?

TYNDALL: Yes.

JOHNSON: Then so far as this particular shift is concerned, do we have an outgoing and incoming text message, first from Lucy Letby to her mum, and then from her mum back to Lucy Letby?

TYNDALL: Yes.

MR JUSTICE GOSS: No, it's [Nurse E].

TYNDALL: No, it is to her mum. That's incorrect on...

MR JOHNSON: So is the tile incorrect?

TYNDALL: Yes.

JOHNSON: We need to correct -- this is one that's slipped through the net?

TYNDALL: Yes.

JOHNSON: All right. I think we did see these again in [Baby L]'s sequence, didn't we?

TYNDALL: Yes.

MR JUSTICE GOSS: We certainly had that tile, but I can't recall now whether it was the same error or not, whether it said it mum or to --

TYNDALL: I didn't notice it for [Baby L], so I assume it was correct on that one.

MR JUSTICE GOSS: I think this is just an error on this one.

TYNDALL: Yes.

MR JUSTICE GOSS: So we just bear that in mind because obviously then her mother responds, "Great", in the next tile.

TYNDALL: Yes.

MR JOHNSON: I think it's correct on the other one. It is in the paper version anyway, but we'll check the electronic version just to be sure.

At 51, do you record the handover to Tracey Jones at between 19.30 and 20.00 hours on Friday, 8 April?

TYNDALL: Yes.

JOHNSON: Then at 52, at 20.00 hours, do we have Tracey Jones' record of [Baby M]'s observations at 20.00 hours?

TYNDALL: Yes.

JOHNSON: Followed by the normal type of data recorded on the neonatal fluid balance chart?

TYNDALL: Yes.

JOHNSON: And then a text message at 54, timed at 21.04, from Sophie Ellis to Lucy Letby about her new house?

TYNDALL: Yes.

JOHNSON: At 55, at 21.15, further information recorded on the neonatal fluid balance chart, which records a blood sugar level of 4.5 for [Baby M]?

TYNDALL: Yes.

JOHNSON: Then from 56 to 61, is there a series of text messaging between Lucy Letby and Sophie Ellis concerning her new house, all of which we've seen, and other material relating to work, all of which we've seen in [Baby L]'s sequence?

TYNDALL: Yes, and the one at 61 is a message with [Nurse E].

JOHNSON: Thank you. So moving on to 62, please, and 63, both at 22.00 hours, do we have [Baby M]'s vital signs recorded together with the fluid balance chart data?

TYNDALL: Yes.

JOHNSON: At 64 and 65, both at 23.55 hours, do we have the results of a blood sample which has been taken to measure bilirubin?

TYNDALL: Yes.

JOHNSON: Then at 66 and 67, do we have vital signs recorded and the fluid balance data, both at midnight?

TYNDALL: Yes.

JOHNSON: Do we have the same data recorded at 02.00 hours in both tiles 68 and 69?

TYNDALL: Yes.

JOHNSON: Then at tiles 70 and 71, a minute apart, at 03.07 and 03.08 respectively, a record or prescriptions for benzylpenicillin and sodium chloride?

TYNDALL: Correct.

JOHNSON: At 72 and 73 at 04.00 hours, again vital signs and the fluid balance data recorded?

TYNDALL: Yes.

JOHNSON: At 74, at 04.41 hours, do we have Tracey Jones' notes, timed at 04.41, setting out what she had done for [Baby M] during the shift up to that point?

TYNDALL: Correct.

JOHNSON: Do those notes record, amongst other things, that he had been receiving enteral feeds of donor-expressed breast milk, his abdomen was soft, he passed meconium and urine and that intravenous antibiotics had been administered as prescribed?

TYNDALL: Yes.

JOHNSON: At tiles 75 and 76, both timed at 06.00 hours, do we have [Baby M]'s vital signs and the neonatal fluid balance data?

TYNDALL: Yes.

JOHNSON: Then from tiles 77 down to 82, do we have door swipe data for the people that we are about to see were coming on for the day shift on Saturday, 9 April?

TYNDALL: Yes.

JOHNSON: They include, at tile 78, Lucy Letby, who is timed by the data as having passed into the unit at 07.25 hours?

TYNDALL: Yes.

JOHNSON: Thank you. Do we come next to tile 83, which records the staff on duty or on call for that Saturday day shift?

TYNDALL: Yes.

JOHNSON: Thank you. I'd like just to -- well, we've seen this, actually, in the context of [Baby L]'s case, haven't we?

TYNDALL: Yes, it's the same.

JOHNSON: It's exactly the same. If we could just remind ourselves of who's where, if we scroll down, please, Mr Murphy. We see that [Baby L] and [Baby M] were in nursery 1 together with two other children for whom -- Mary Griffith was their designated nurse and the other two children, their designated nurse was Lucy Letby.

TYNDALL: Yes.

JOHNSON: Thank you. I don't think we need to go into any more detail given that we've already been through that information.

Moving on, please, to tile 84. That, together with tile 85, both timed at 08.30, records first [Baby M]'s vital signs and, second, his fluid balance data?

TYNDALL: Yes.

JOHNSON: Do we then see at tile 86 some door swipe data, timed at 08.45, recording Lucy Letby coming into the NNU?

TYNDALL: Yes.

JOHNSON: The same type of data involving Lucy Letby 3 minutes later at tile 87?

TYNDALL: Yes.

JOHNSON: Then at tile 88, at 10.25, clinical notes made by Dr Ukoh?

TYNDALL: Yes.

JOHNSON: That's 10.25. At 10.30, tiles 89 and 90, first of all, do we have observations and data from the fluid balance chart recorded by Mary Griffith?

TYNDALL: Yes.

JOHNSON: Together with, at 91 at the same time, Mary Griffith's record of the fact that she'd taken blood from [Baby M] for a bilirubin reading and blood glucose?

TYNDALL: Yes.

JOHNSON: And a record there of the fact that his blood sugar was 3.9 at that stage?

TYNDALL: Yes.

JOHNSON: At 92, timed at 10.34, is there an outgoing message we've seen before from Lucy Letby to Ailsa Simpson concerning Ailsa Simpson's day at the races?

TYNDALL: Yes.

JOHNSON: Then at 93 and 94, further tests for bilirubin timed at 10.56?

TYNDALL: Yes.

JOHNSON: 95, Mary Griffith's nursing note, timed at 11.00 hours, recording one small posset at that time?

TYNDALL: Yes.

JOHNSON: Then at tile 96, timed at 12.15, a further note recording that at that time, in other words at 12.15, it was noted that [Baby M]'s stomach was a little distended and his work of breathing was increased?

TYNDALL: Yes.

JOHNSON: Then at 12.30, in both tiles 97 and 98, [Baby M]'s vital signs recorded together with the data in the fluid balance chart, but this time by [Nurse B]?

TYNDALL: Yes.

JOHNSON: The reason for that, the reason, in other words, for [Nurse B] having done it, may be revealed by the information recorded by Mary Griffith in the nursing notes at tile 99, where she has written:

"Was then sent for my break."

And [Nurse B] did the 12.30 feed and:

"Font temp raised and had an aspirate of 5ml, stomach acid with partly digested milk. This was discarded and feed given temperature reverted to normal and baby settled."

TYNDALL: Yes.

JOHNSON: Do you then record the fact that at tile 100, between 11.12 and 12.33, there'd been various messages of a social nature sent and received by Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 101 at 12.52 and 102 at 12.53 and 103 at 12.56, is there -- have you recorded some text messages which appear to concern betting on the Grand National?

TYNDALL: Yes.

MR JUSTICE GOSS: I'm sure we'll all remember these, and she won, in fact.

MR JOHNSON: She did.

Followed by social messages and more horse messages at 104 and 105?

TYNDALL: Yes.

JOHNSON: 106, timed at 13.15, [Baby M]'s vital signs are recorded?

TYNDALL: Yes.

JOHNSON: Followed by more texts, which we've seen before, down to tile 113?

TYNDALL: Yes.

JOHNSON: Then at tile 114, timed at 13.48, the door swipe data recording the entrance into the unit of Lucy Letby?

TYNDALL: Yes.

JOHNSON: Some more WhatsApp. Then at 116, further door swipe data timed at 14.02, recording Lucy Letby's entrance into the unit?

TYNDALL: Yes.

JOHNSON: Followed by more messaging?

TYNDALL: Yes.

JOHNSON: Then at 14.15, tile 118, [Baby M]'s vital signs recorded by Mary Griffith?

TYNDALL: Yes.

JOHNSON: Fifteen minutes later, 14.30, tile 119, the fluid balance chart data?

TYNDALL: Yes.

JOHNSON: Then at 15.00, tile 120, retrospective nursing notes written by Mary Griffith, recording this:

"At next feed the aspirate was 1.5ml and bile stained. Shown to registrar and baby put nil by mouth. Nasogastric tube on free drainage. 10% dextrose commenced at 75ml per kilogram. IV antibiotics given at 15.00."

TYNDALL: Yes.

JOHNSON: Is there then a sequence of tiles from 121 to 126, ranging in time between 15.15 and 15.27, concerning the comings and goings of Doctors Anthony Ukoh and Cassandra Barrett?

TYNDALL: Yes.

MR JOHNSON: My Lord, that may be a good moment to pause.

MR JUSTICE GOSS: Certainly. Thank you very much. We'll break off until 2 o'clock, please, members of the jury.

(In the absence of the jury)

MR JUSTICE GOSS: [Baby L]'s tile was correct. You checked it and it was correct, so it was just on this one that it needs changing?

MR JOHNSON: Yes.

MR JUSTICE GOSS: Thank you.

MR MYERS: My Lord, may I briefly mention a couple of matters relating to tomorrow? They're administrative matters, they don't concern Mrs Tyndall. I don't say that to be rude.

MR JUSTICE GOSS: You go if you wish to, thank you.

MR MYERS: The first is this, communicated to your Lordship, that it may be that tomorrow morning would provide an opportunity for

the defendant to familiarise herself with the position in the witness box should that in due course be of assistance. We understand, I'll check, that so far as the staff caring for her are concerned, that can be accommodated if the court can accommodate it.

MR JUSTICE GOSS: The court can and will.

MR MYERS: Thank you, we're grateful.

MR JUSTICE GOSS: May I suggest that there is further liaison -- there has already been liaison -- from the court clerk with the staff, so that arrangements can be made.

MR MYERS: We'll deal with that, my Lord. Thank you.

One other matter with regard to Ms Letby.

Your Lordship noticed, as we all did on Thursday, that at one point she left court quickly and she felt particularly unwell at that point.

I've taken the liberty of explaining to her that if she is unwell and feels she will become very unwell -- she felt sick at that point -- then the court will understand if she has to leave quickly, with apologies for any interruption, but rather than waiting for me to raise the point when who knows what may happen if she remains in the dock. It's to be hoped that that isn't something that presents an ongoing problem with any regularity but these things can happen. And if she feels unwell, with that in mind, I've explained that if there's urgency, she must go and deal with whatever has to be dealt with. I let your Lordship know so that the court is aware that if that happens, that's something that we have dealt with.

MR JUSTICE GOSS: Thank you very much. I think the senior officer, I'm sorry if I'm not getting the order -- yes, I thought the lady who essentially dealt with it at the time was dealing with it and the solicitor was checking.

I just wanted to make sure she was all right and fit to continue. But certainly if at any time she feels unwell and has to leave the court as a matter of urgency, then that should be permitted, facilitated, and we'll get explanations later.

MR MYERS: We're very grateful for that, my Lord, thank you.

We're grateful, of course, to the court and to the staff who are looking after Ms Letby to ensure these can be dealt with in that way.

The final matter relates to an arrangement that I'm faced with. There's an application I have been asked to deal with.

MR JUSTICE GOSS: Which you have acquainted me with.

MR MYERS: That was the best of all possible dates because it didn't clash with a day with a full day of sitting.

It's listed at 12 noon. It will be brief, certainly from me if will be brief if we start then, and so therefore I hope it doesn't create an issue with matters running from 13.00 in this court.

If there's any question of matters running over by a matter of minutes, a very short period of time, I'll of course keep your Lordship updated and would ask for that indulgence if there's only going to be a short delay. If for any reason there's to be any lengthier delay than that then we will, of course, let the court know and we shall make arrangements with the prosecution to deal with matters as best we can without causing any delay to the court. That's the position with tomorrow.

MR JUSTICE GOSS: Thank you. A matter of 5 or 10 minutes isn't going to make any difference, but we can't... The commitment that you have then is highly unlikely that there wouldn't be a break at 1 o'clock in any event?

MR MYERS: That's right.

MR JUSTICE GOSS: Speak to Mr Johnson and Mr Driver as well, who I think does a lot of the marshalling of the order.

MR MYERS: We have been in touch about this and that's quite right, there will be an opportunity anyway at 1 o'clock to take stock. Thank you, my Lord.

MR JUSTICE GOSS: Thank you very much. Do you want to go on until five past or can you be ready for 2 o'clock?

MR JOHNSON: I'm happy to start at 2.00. We may run slightly short today because I think the only business we have is to complete this.

MR JUSTICE GOSS: I thought that. But we might as well unless people want, very reasonably, a conventional one hour rather than 55 minutes. That will be sufficient for you? Good, thank you very much. 2 o'clock then.

(1.05 pm)

(The short adjournment)

(2.00 pm)

MR JUSTICE GOSS: Mr Johnson.

MR JOHNSON: My Lord. First of all, can we just return to tile 49, just to show that we've made the correction to the correspondent; that's correct, isn't it?

TYNDALL: Yes, that's correct.

JOHNSON: Thank you. Taking up where we left off, please, at 127.

This is an infusion prescription chart timed at 15.30 relating to the administration of 10% dextrose to [Baby M]; is that right?

TYNDALL: Yes.

JOHNSON: And signed by both Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: Also at the same time, similar data recorded in the fluid balance chart at tile 128?

TYNDALL: Yes.

JOHNSON: Followed by swipe data relating to [Nurse B]?

TYNDALL: Yes.

JOHNSON: Just to put this into context, the jury heard, didn't they, about Mary Griffith preparing some more concentrated dextrose for [Baby L] in the lead-up to [Baby M]'s collapse?

TYNDALL: Yes.

JOHNSON: What we're looking at now is the 30 minutes or so leading up to [Baby M]'s collapse and, to a degree, we can see some of what people were up to during this period of time, which we will also come to in the neonatal review, won't we?

TYNDALL: Yes.

JOHNSON: Right. With that context in mind, and in particular that [Baby M]'s collapse is timed at 16.00 hours, so 4 pm, we're coming into those 30 minutes immediately preceding.

So at tile 129, first, do we see a record of the entry of [Nurse B] into the unit?

TYNDALL: Yes.

JOHNSON: Then at tile 130 at 15.34, a record of medication given to [Baby L] by Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: Followed by an update to the computer in that respect at tile 131, a minute later?

TYNDALL: Yes.

JOHNSON: Followed at 132 by a record of fluid given to [Baby L] at 15.40, attributed to Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: Then at 15.41, in two separate tiles, 133 and 134, both timed at 15.41, Dr Henton going out of one of the maternity wards and into the neonatal unit?

TYNDALL: Yes.

JOHNSON: Tile 135, at 15.45, the administration of benzympenicillin to [Baby M]?

TYNDALL: Yes.

JOHNSON: At tile 136, at the same time, the update on the computer made in respect of the benzympenicillin by both Mary Griffith and Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 137, a prescription signed by Lucy Letby and Mary Griffith at 15.45 for sodium chloride in the case of [Baby M]?

TYNDALL: Yes.

JOHNSON: At the same time, that fact updated on the computer at tile 138?

TYNDALL: Yes.

JOHNSON: Then at 15.50 through to 15.56, the movements of Dr Henton into ward 29 and then an internal door in ward 29?

TYNDALL: Yes.

JOHNSON: Then Belinda Simcock, the maternity labour ward doors by the lift, in, and then --

TYNDALL: Yes.

JOHNSON: -- into the labour ward itself at 15.56?

TYNDALL: Yes.

JOHNSON: Then at 143, a WhatsApp incoming message from [Nurse E] to Lucy Letby?

TYNDALL: Yes.

JOHNSON: Then at 16.00, data at tile 144 relating to the entrance of Angela McShane into the maternity neonatal entrance?

TYNDALL: Yes.

JOHNSON: We then have the event tile at 145 relating to the collapse of [Baby M]?

TYNDALL: Yes.

JOHNSON: Followed at 146 by Mary Griffith's retrospective note made later that evening at 20.11, which records at 16.00 hours:

"Baby went apnoeic and had profound brady and desat"?

TYNDALL: Yes.

JOHNSON: At the same time, 16.00 hours, a record made by [Nurse B]. If we just look at this, please.

This is an entry, as I say, at 16.00 hours, which we can see has been written on -- if we could look at it sideways, so to speak. You see it says:

"Transferred to ITU chart."

TYNDALL: Yes.

JOHNSON: Thank you. To the left, or below if it was in normal landscape, it says "3ml bile [Initials of Nurse B]".

TYNDALL: Yes.

JOHNSON: Thank you. Next, at 148, please, at 16.02, back to Mary Griffith's note saying:

"Full resus commenced at 16.02. See medical notes for resus details and EMAR for drugs given. Care handed over to SN L Letby."

TYNDALL: Yes.

JOHNSON: Then at 149, Dr Ukoh's notes concerning [Baby M]'s collapse?

TYNDALL: Yes.

JOHNSON: At 150, Dr Jayaram's notes made retrospectively at 17.40 concerning -- and his entry timed at 16.04 relating to the crash call he received?

TYNDALL: Yes.

JOHNSON: Which data we see recorded by the automated electronic material in the next tile at 151?

TYNDALL: Yes.

JOHNSON: At 152 Lucy Letby's retrospective note written later at 21.14, saying:

"Care taken over by myself during resuscitation. Drugs given by myself and SN Griffith."

TYNDALL: Yes.

JOHNSON: At 153, 16.05 hours, Dr Ukoh's retrospective notes concerning the first administration of adrenaline?

TYNDALL: Yes.

JOHNSON: 154 is a prescription for that in the automated system?

TYNDALL: Yes.

JOHNSON: 155, further notes of Dr Ukoh, a second administration of adrenaline (inaudible: coughing) intubation --

TYNDALL: Yes.

JOHNSON: -- with the corresponding prescription in the electronic reported at tile 156, timed at 16.10?

TYNDALL: Yes.

JOHNSON: 157, also timed at 16.10, an infusion of saline, signed and countersigned by Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: Then at 158, the third dose of adrenaline, timed at 16.12?

TYNDALL: Yes.

JOHNSON: With the corresponding prescription at tile 159?

TYNDALL: Yes.

JOHNSON: A prescription for sodium bicarbonate at tile 160?

TYNDALL: Yes.

JOHNSON: Then at 161, at 16.14, swipe data showing the entrance of Belinda Simcock into the neonatal unit?

TYNDALL: Yes.

JOHNSON: At 162, an incoming message for Lucy Letby from someone called Amy Turner?

TYNDALL: Yes.

JOHNSON: At 163, Dr Jayaram's notes concerning his arrival at 16.15 hours --

TYNDALL: Yes.

JOHNSON: -- showing that [Baby M] was in cardiorespiratory arrest?

TYNDALL: Yes.

JOHNSON: 164, a further bolus of saline timed at 16.16?

TYNDALL: Yes.

JOHNSON: 165 and 166, a minute apart, two entries, first of Angela McShane, the second of Dr Jayaram, into the neonatal unit?

TYNDALL: Yes.

JOHNSON: Tile 167, Dr Ukoh's note of the fourth dose of adrenaline given to [Baby M] at 16.19 hours?

TYNDALL: Yes.

JOHNSON: The corresponding prescription in the next tile, 168?

TYNDALL: Yes.

JOHNSON: At 169, the saline infusion signed by Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: 170, Dr Ukoh's further notes relating to blood gas and putting [Baby M] on a ventilator?

TYNDALL: Yes. That's the blood gas results prior to -- 20 minutes into resuscitation before being placed on his ventilator.

JOHNSON: Yes. Do we see those blood gas results recorded at 171 --

TYNDALL: Yes.

JOHNSON: -- by [Nurse B]?

TYNDALL: Yes.

JOHNSON: At 172, timed at 16.23, a further bolus of saline given by Dr Ukoh to [Baby M]?

TYNDALL: Yes.

JOHNSON: A further blood gas at tile 173, timed at 16.24?

TYNDALL: Yes.

JOHNSON: Then a fifth dose of adrenaline at tile 174, timed at 16.25?

TYNDALL: Yes.

JOHNSON: The prescription for that adrenaline, timed the same, appears at tile 175?

TYNDALL: Yes.

JOHNSON: At 176, there's bicarbonate of soda, I think.

TYNDALL: Yes.

JOHNSON: Sodium bicarbonate, 16.26, with the prescription at 177?

TYNDALL: Yes.

JOHNSON: 178, the arrival of Dr Henton into the maternity ward?

TYNDALL: Yes.

JOHNSON: Then at 179, the sixth dose of adrenaline recorded by Dr Ukoh --

TYNDALL: Yes.

JOHNSON: -- at 16.30, with the corresponding prescription at tile 180?

TYNDALL: Yes.

JOHNSON: At tile 181, Dr Ukoh's note concerning [Baby M]'s heart rate being over 100 at that time?

TYNDALL: Yes.

JOHNSON: And the fact, in tile 182, of the CPR continuing, requiring three more doses of adrenaline and other substances?

TYNDALL: Yes, that's Dr Jayaram's record and then he says at 16.31, "Heart rate is greater than 100".

JOHNSON: "Plus gasps"?

TYNDALL: Plus gasps.

JOHNSON: At 183, Dr Ukoh recording the fact that [Baby M], on the ventilator, appeared stable?

TYNDALL: Yes.

JOHNSON: And was he holding on to the ET tube --

TYNDALL: Yes.

JOHNSON: -- and was "pink plus". So:

"Having collapsed, he was pink plus, intermittently holding on to the ET tube with good chest movement and good air entry"?

TYNDALL: Yes.

JOHNSON: Tiles 184 and 185, door swipe data concerning Dr Henton?

TYNDALL: Yes.

JOHNSON: Then continuing in the same theme with door data from 186 through to 192, various uses of their entry cards being recorded by the system for Dr Henton, Dr Jayaram and Dr Ukoh?

TYNDALL: Yes.

JOHNSON: At 193 is there an X-ray report for [Baby M]?

TYNDALL: Yes, following the intubation.

JOHNSON: At 194, door swipe data for Lucy Letby, showing her entrance into the maternity neonatal entrance doors?

TYNDALL: Yes.

JOHNSON: Followed by Dr Ukoh, tile 195, 17.09, through the same doorway?

TYNDALL: Yes.

JOHNSON: 196, the neonatal infusion prescription chart records the administration of morphine sulphate to [Baby M], signed by Lucy Letby and [Nurse B]?

TYNDALL: Yes.

JOHNSON: That's timed at 17.25 with an incoming text message about the Grand National 3 minutes later?

TYNDALL: Yes.

JOHNSON: At 198, the infusion bag was changed?

TYNDALL: Yes.

JOHNSON: 199, also at 17.30, observations taken by [Nurse B]?

TYNDALL: Yes.

JOHNSON: That data recorded on the neonatal fluid balance chart at tile 200?

TYNDALL: Yes.

JOHNSON: And the intensive care chart, at the same time, tile 201, recording the administration of two boluses of morphine?

TYNDALL: Yes.

JOHNSON: At 202, still at 17.30, door swipe data for Belinda Simcock?

TYNDALL: Yes.

JOHNSON: Followed by a further text to Lucy Letby and then door swipe data at 204 concerning Dr Jayaram?

TYNDALL: Yes.

JOHNSON: At 205 through to 208 do we have two sets of records recording -- sorry, four sets of records recording the administration of morphine and sodium chloride --

TYNDALL: Yes.

JOHNSON: -- signed by Nurses [Nurse B] and Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 209, door swipe data for Mary Griffith?

TYNDALL: Yes.

JOHNSON: That's at 17.38. Then at 210, Dr Jayaram's retrospective note, which covers events since his arrival shortly after 16.00 hours?

TYNDALL: Yes.

JOHNSON: And also covers his, that is Dr Jayaram's, discussion with [Baby M]'s parents?

TYNDALL: Yes.

JOHNSON: Just looking at that, please, or your transcription of what he has recorded, it concludes:

"Discussion with parents to explain that sudden collapse led to arrest but no obvious cause."

TYNDALL: Yes.

JOHNSON: "Could be due to infection or abdominal problem. Explained that due to arrest, potential problems with kidney function, blood pressure and seizures and will need close observation."

There's then a record of blood gas readings and the plan?

TYNDALL: Yes, that's correct.

JOHNSON: At 211 is Dr Jayaram's review of the X-ray --

TYNDALL: Yes.

JOHNSON: -- timed at 17.50? At 212, door swipe data for Nurse Simcock or Williamson?

TYNDALL: Williamson, yes.

JOHNSON: At 213, a further prescription for morphine sulphate?

TYNDALL: Yes.

JOHNSON: 214, timed at 17.58, blood gas results recorded by Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 215, door swipe data timed at 17.59 for Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 216 and 217, the vital signs and the fluid balance chart for [Baby M] at 18.00 hours?

TYNDALL: Yes.

JOHNSON: At 218, the intensive care chart also timed at 18.00 hours --

TYNDALL: Yes.

JOHNSON: -- also recorded by Lucy Letby?

At 219, a sample taken for pathology?

TYNDALL: Yes.

JOHNSON: Which appears to be a blood sample?

TYNDALL: Yes, a blood sample.

JOHNSON: With results and the results sheet appears at 220?

TYNDALL: Yes.

JOHNSON: 221 and 222 are Lucy Letby's messages to [Nurse E] and some of her other friends relating to her having won money on the Grand National?

TYNDALL: Yes.

JOHNSON: At 223, at 18.05 hours, Lucy Letby and [Nurse B] sign the neonatal infusion prescription chart?

TYNDALL: Yes, for saline.

JOHNSON: Thank you. At 224, a further incoming message about the horse racing?

TYNDALL: Yes.

JOHNSON: 225, an update on the computer concerning morphine sulphate given about 25 minutes earlier?

TYNDALL: Yes.

JOHNSON: 226, texts. 227, an update made by Dr Jayaram about adrenaline given at 16.19 and 16.25?

TYNDALL: Yes.

JOHNSON: At 228 a prescription for metronidazole, signed by Nurses [Nurse B] and Lucy Letby?

TYNDALL: Yes.

JOHNSON: 229 is the update concerning the giving of metronidazole?

TYNDALL: Yes.

JOHNSON: At 230, 18.53, blood gas results recorded by Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 231, the on-the-hour hourly observations for [Baby M] recorded by Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 232 and 233, the intensive care chart and neonatal fluid balance chart at the same time --

TYNDALL: Yes.

JOHNSON: -- also recorded by Lucy Letby?

At 234, also at 19.00 hours, a record of the insertion of a UVC by Dr Ukoh?

TYNDALL: Yes.

JOHNSON: At 235, with no time, Dr Ukoh's notes, which seem to relate to that event which is recorded elsewhere at 19.00 hours?

TYNDALL: Yes, related to the UV insertion.

JOHNSON: Yes. 236, a further sample for pathology?

TYNDALL: Yes.

JOHNSON: At 237, timed at 19.12 hours, an X-ray to determine the position of the UVC?

TYNDALL: Yes.

JOHNSON: At 238, Lucy Letby recorded at 19.28 as entering the neonatal entrance doors?

TYNDALL: Yes.

JOHNSON: 239, timed at 19.30, the neonatal infusion prescription chart signed by Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: At 240, more door swipe data related to Lucy Letby?

TYNDALL: Yes.

JOHNSON: At 241, the nursing handover at which Samantha O'Brien became [Baby M]'s designated nurse?

TYNDALL: Yes.

JOHNSON: Thereafter, at 20.00 hours, the nutrition prescription and observation charts signed by Nurses [Nurse C] and O'Brien, tiles 242 and 243, at 20.00 hours?

TYNDALL: Yes.

JOHNSON: Together with the fluid balance chart at 244 and the intensive care equipment settings at 245?

TYNDALL: Yes.

JOHNSON: At 246, also timed at 20.00 hours, Samantha O'Brien's nursing note relating to her taking over the care of [Baby M]?

TYNDALL: Yes.

JOHNSON: Then at 247, some clinical notes made retrospectively concerning the X-ray of [Baby M] made by Dr Ukoh?

TYNDALL: Yes.

JOHNSON: At 249 and 250, messages between Lucy Letby and her mum?

TYNDALL: Yes.

JOHNSON: 251, Mary Griffith's retrospective note made later in the shift -- sorry, made later on that evening concerning having taken over at 19.45 and checking all the equipment?

TYNDALL: Yes. That is her full record of the care of [Baby M] during the shift.

JOHNSON: Okay. So this is a note she's made at the end of her shift relating back to the beginning of the shift on that Saturday morning?

TYNDALL: Yes, and everything that's happened throughout.

JOHNSON: Thank you. Dr Ukoh made his notes at 20.25. That practice is recorded at tile 252?

TYNDALL: Yes.

JOHNSON: You have put in the relevant notes at the times that he noted things as having happened?

TYNDALL: Yes.

JOHNSON: At 253, blood gases timed at 20.27?

TYNDALL: Yes.

JOHNSON: At 254, timed at 20.30, further notes made by Nurse Samantha O'Brien?

TYNDALL: Relating to the blood gas results.

JOHNSON: Yes. And a minute later, the family communication noted?

TYNDALL: Yes, by Mary Griffith.

JOHNSON: Thank you. At 256 at 20.34 and at 257 at 20.58, Mary Griffith had updated [Baby L]'s notes?

TYNDALL: Yes.

JOHNSON: At 258 and 259, observations and the fluid balance chart for [Baby M] completed by Samantha O'Brien at 21.00 hours?

TYNDALL: Yes.

JOHNSON: Nurse O'Brien's nursing notes for that time appear at tile 260?

TYNDALL: Yes.

JOHNSON: Followed at the same time by tile 261, which are the intensive care chart, equipment settings data?

TYNDALL: Yes.

JOHNSON: At 262 and 263, a long note made in relation to [Baby M] by Lucy Letby?

TYNDALL: Yes.

JOHNSON: If you would, please, can you take us through that long note?

TYNDALL: Yes:

"Care taken over by myself during resuscitation. Drugs given by myself and SN Griffith. Intubated with size 3 ET tube, 8.5 centimetres at the lips. Ventilation weaned as charted due to over-ventilation. At 20.00, SIMV 16/4, rate 20 breaths per minute, inspiratory time 0.4 in air. Clear bilateral air entry and chest movement. Baby making good respiratory effort. Observations as charted. Blood pressure maintained. Capillary refill 2 seconds. 1x 10ml/kilogram sodium chloride 0.9% bolus given as prescribed. Metabolic acidosis and raised lactate. X2 100 micrograms/kilogram morphine boluses given due to agitation and unsynchrony with ventilator."

JOHNSON: I think that is followed by --

TYNDALL: It continues on the next tile.

JOHNSON: So this is over two tile because of the capacity of the software to take the data?

TYNDALL: "20 micrograms/kg/hour morphine commenced. Reduced to 10 micrograms/kg/hour at 19.00. All given via peripheral line along with 10% glucose, 75ml/kg/day. UVC sited by reg and position confirmed on X-ray. Fluids initiated by [Nurse C]. Blood sugar elevated. Phototherapy unable to be continued due to

procedures. Baby noted to have stiffened posture in all limbs, particularly upper limbs. Fingers and toes curled and [feet] and hands inwardly rotated. Respiratory effort noted to have declined from 19.00. Baby sucking on ET tube. Metronidazole given as prescribed."

JOHNSON: Thank you, then at 264, timed at 21.22, is there a family communications entry update made by Lucy Letby?

TYNDALL: Yes.

JOHNSON: Does that say:

"Parents and family members present for resuscitation and fully updated by medical and nursing staff. Parents have remained with the twins"?

TYNDALL: Yes.

JOHNSON: Thank you. Three minutes later, at tile 265, were [Baby L]'s notes updated by Mary Griffith?

TYNDALL: Yes.

JOHNSON: At 266, timed at 21.35, did [Dr A] update the clinical notes?

TYNDALL: Yes.

JOHNSON: At 267 and 268, finally, as far as Lucy Letby on this shift at least is concerned, do we have a record of the fact that the medication administration updates were made on the computer at 21.43 and 21.44 respectively?

TYNDALL: Yes.

JOHNSON: And they concern the administrations of adrenaline and sodium bicarbonate given in the immediate aftermath of [Baby M]'s collapse?

TYNDALL: Yes.

JOHNSON: At 269, 270 and 271, do we have Nurse O'Brien's records of [Baby M]'s vital signs, the neonatal fluid balance chart and the intensive care chart?

TYNDALL: Yes.

JOHNSON: Do we then have a series of four sent and received text messages, all relating to Lucy Letby but also concerning her colleagues, Belinda Simcock or Williamson and Sophie Ellis?

TYNDALL: Yes.

JOHNSON: We've been through those in [Baby L]'s case?

TYNDALL: Yes.

JOHNSON: At 276 and 277, timed at 22.30, a neonatal parenteral nutrition prescription and nursing note made by Samantha O'Brien?

TYNDALL: Yes.

JOHNSON: Followed by blood gases at tile 278 timed at 22.48?

TYNDALL: Yes.

JOHNSON: Then at 23.00 hours, tiles 279 and 280, we have [Baby M]'s vital signs together with the neonatal fluid balance chart data completed?

TYNDALL: Yes.

JOHNSON: A note made by Samantha O'Brien at the same time at tile 281?

TYNDALL: Yes, concerning the commencement of lipids in the fluid balance chart.

JOHNSON: Yes. At 282, 23.00 hours, Samantha O'Brien's note of the ventilation being given to [Baby M]?

TYNDALL: Yes.

JOHNSON: At 283, 23.53, are pathology samples and blood test results recorded?

TYNDALL: Yes.

JOHNSON: Some of the same data also recorded in the following tile at 284?

TYNDALL: Yes, that's the handwritten entries.

JOHNSON: Yes. And at 285, an update to the nursing notes made at midnight?

TYNDALL: Yes, regarding some action that they want to take at that time.

JOHNSON: Regarding what, sorry?

TYNDALL: It's regarding [Dr A] reviewing [Baby M].

JOHNSON: Yes. And saying happy --

TYNDALL: "Happy to stop morphine."

JOHNSON: At the same time, so 00.00 hours, we have three tiles, 286, 287 and 288, relating to [Baby M]'s vital signs, the fluid balance chart and the intensive care chart equipment settings?

TYNDALL: Yes.

JOHNSON: 30 minutes later, tiles -- I'm told we may need a break, I'm sorry.

MR JUSTICE GOSS: Right. We'll just have a 5-minute break then, please.

(In the absence of the jury)

MR JOHNSON: I'm told that one of the jurors was giving the impression of being asleep.

MR JUSTICE GOSS: Right. I'm not being critical, Mr Johnson. Your voice is very soporific, in fact.

It is a flat monotone and a lot of this is similar material that they're very familiar with, there's quite a lot of -- I know there's a lot of new data here, but there's some old data as well. So we'll have a five-minute break now, but -- you're three-quarters of the way through now, aren't you, almost?

MR JOHNSON: Yes.

MR JUSTICE GOSS: I think we probably -- I haven't looked ahead, but I imagine there are quite a lot -- I think there's an iPad issue as well, actually. Is it number 3?

MR JOHNSON: There's not an awful lot of text material in the rest of this.

MR JUSTICE GOSS: We'll complete it after we've had a five-minute break. So I'll say about 20 to then, thank you very much.

(2.35 pm)

(A short break)

(2.40 pm)

MR JUSTICE GOSS: The iPad has been fixed.

MR JOHNSON: Thank you.

289 next, please. Is that a nursing note updated by Samantha O'Brien concerning the treatment of [Baby M]?

TYNDALL: Yes, and the same on 290. It's just again spread over two tiles.

JOHNSON: Yes. Thank you. 291, a further pathology sample received, this time at 00.45?

TYNDALL: Yes.

JOHNSON: Together with results for a blood sample at the same time, tile 292?

TYNDALL: Yes.

JOHNSON: At 01.00 hours we have three tiles, 293, 294 and 295, concerning observations, the fluid balance chart and the intensive care chart?

TYNDALL: Yes.

JOHNSON: At 296, social messaging?

TYNDALL: Yes.

JOHNSON: 297, 298 and 299, three standard sets of charts on the hour at 02.00 hours?

TYNDALL: Yes.

JOHNSON: 300, [Dr A]'s clinical notes?

TYNDALL: Yes.

JOHNSON: At 301, at 03.00 hours, [Baby M]'s vital signs recorded?

TYNDALL: Yes.

JOHNSON: His extubation recorded by [Dr A]'s note, timed at 03.20, tile 302?

TYNDALL: Yes.

JOHNSON: At tile 303 at 03.30 hours, the extubation also recorded on the intensive care chart?

TYNDALL: Yes.

JOHNSON: And a record made at tile 304 on the apnoea/brady/fit chart of an apnoea and desaturation down to 25%?

TYNDALL: Yes.

JOHNSON: At 305, timed at 03.30 hours, Samantha O'Brien's nursing note?

TYNDALL: Regarding that desaturation.

JOHNSON: Yes, thank you. Then at 306 down to 309, the administration or the recording of prescriptions for gentamicin, benzylpenicillin and sodium chloride?

TYNDALL: Yes.

JOHNSON: At 310, timed at 04.00 hours, we have that tile together with the succeeding two tiles recording what we've been calling from time to time the standard three?

TYNDALL: Yes.

JOHNSON: Timed at 04.10, tile 313, a further entry on the apnoea/brady/fit chart?

TYNDALL: Yes.

JOHNSON: 314, receipt of a pathology sample, timed at 04.29?

TYNDALL: Yes.

JOHNSON: 315, at 04.30, a nursing note?

TYNDALL: Yes, regarding the taking of the blood sample and a request to repeat in one and a half hours.

JOHNSON: Yes. And the results or some results from a blood sample on the succeeding tile, 316 --

TYNDALL: Yes.

JOHNSON: -- at 04.31? At 05.00 hours, the standard three at tiles 317 to 319?

TYNDALL: Yes.

JOHNSON: Followed, at tile 320, at 05.07 hours, by Samantha O'Brien's nursing note?

TYNDALL: Yes.

JOHNSON: Together with, at tile 321, family contact recorded?

TYNDALL: Yes.

JOHNSON: At 06.00, we have four tiles, 322 through to and including 325, which are in effect the standard three together with [Dr A]'s note?

TYNDALL: Yes. [Baby M] is put on to CPAP.

JOHNSON: Yes, thank you. At 326, timed at 06.03, blood gas results?

TYNDALL: Yes.

JOHNSON: Messages at tile 327?

TYNDALL: Yes.

JOHNSON: At 328, 329, 330, 331 and 332, the standard three, together with [Dr A]'s update -- when [Dr A] updated his notes and also Samantha O'Brien's nursing note?

TYNDALL: Yes.

JOHNSON: Resuming at tile 333, is that a further entry on the apnoea/brady/fit chart?

TYNDALL: Yes.

JOHNSON: Concerning a desaturation down to 30%?

TYNDALL: Yes, for 30 seconds.

JOHNSON: At 334, timed at 07.15, Samantha O'Brien's nursing notes recording that further apnoea --

TYNDALL: Yes.

JOHNSON: -- together with other information?

At 335 you've simply recorded the fact that it was at 07.46 that Samantha O'Brien made her notes, which have previously been inserted in the preceding 46 minutes of the chronology?

TYNDALL: Yes.

JOHNSON: At 336 through to 339, do we have the standard three together with an update in the notes made by [Dr A]?

TYNDALL: Yes.

JOHNSON: At 340, the nursing handover to Laura Eagles between 07.30 and 08.00 hours?

TYNDALL: Yes.

JOHNSON: 341, timed at 08.05, further blood gases, this time recorded by [Dr A]?

TYNDALL: Yes.

JOHNSON: Then at 342, timed at 08.40, a further entry on the apnoea/brady/fit chart relating to a desaturation to what was recorded as "60 for 30 seconds" --

TYNDALL: Yes.

JOHNSON: -- recorded by Laura Eagles?

At 343 and 344, prescriptions for metronidazole and sodium chloride?

TYNDALL: Yes.

JOHNSON: At 345 through to 347 at 09.00 hours, the standard three?

TYNDALL: Yes.

JOHNSON: At 348 at 09.35 hours, Dr Gibbs' notes concerning an examination of [Baby M]?

TYNDALL: Yes.

JOHNSON: At tile 349 through to 351, we've got the standard three recorded by Laura Eagles?

TYNDALL: Yes.

JOHNSON: At 352, at the same time, a further entry on the apnoea/brady/fit chart concerning a desaturation down to 58, this time for 45 seconds?

TYNDALL: Yes.

JOHNSON: At 353, 10.15, Dr Gibbs' update to his clinical notes concerning that desaturation?

TYNDALL: Yes.

JOHNSON: Then at 354 and 355, prescriptions timed at 10.31 and 10.32 for caffeine and sodium chloride?

TYNDALL: Yes.

JOHNSON: We've then got some text messages between 356 and 359 which we've already dealt with in the context of [Baby L]'s case?

TYNDALL: Yes.

JOHNSON: Then at 360, timed at 11.00, the intensive care chart together with, at 361 and 362, the neonatal fluid balance chart and the observations?

TYNDALL: Yes.

JOHNSON: More messages at 363?

TYNDALL: Yes.

JOHNSON: At midday, the standard three, together with blood gas results?

TYNDALL: Yes.

JOHNSON: That's tiles 364 to 367. A further blood sample sent for analysis at 368, also at midday?

TYNDALL: Yes.

JOHNSON: Results of a blood gas at 369 timed at 12.04?

TYNDALL: Yes.

JOHNSON: The standard three timed at 13.00, being tiles 370 to 372?

TYNDALL: Yes.

JOHNSON: Repeated an hour later at 14.00 hours at tiles 373 to 375?

TYNDALL: Yes.

JOHNSON: Then between tiles 376 and 385, messages that we've seen in the context of [Baby L]'s case?

TYNDALL: Yes.

JOHNSON: At 386 and 387, timed at 14.54, prescriptions for benzylpenicillin and sodium chloride?

TYNDALL: Yes.

JOHNSON: Then at 15.00 hours, tiles 388 to 390, the standard three?

TYNDALL: Yes.

JOHNSON: Followed by more messages that we've seen in the context of [Baby L]'s case from tile 391 onwards?

TYNDALL: Yes.

JOHNSON: Ending at 394 because at 395 to 397 we've got the standard three at 16.00 hours?

TYNDALL: Yes.

JOHNSON: Repeated in the succeeding three tiles at 17.00 hours?

TYNDALL: Yes.

JOHNSON: Then at tile 401, at 17.28, Laura Eagles' nursing notes, which set out her care for [Baby M] from 08.00 hours that morning?

TYNDALL: Yes.

JOHNSON: At tile 402, Nurse Eagles' notes of her contact with the [Surname of Babies L & M] parents?

TYNDALL: Yes.

JOHNSON: At tiles 403 to 405, timed at 18.00 hours, the standard three?

TYNDALL: Yes.

JOHNSON: And in the succeeding three tiles, 406 to 408, the same material at 19.00 hours?

TYNDALL: Yes.

JOHNSON: At tile 409, is there an addendum to the nursing note timed at 19.24 hours?

TYNDALL: Yes.

JOHNSON: Is that Laura Eagles' record saying:

"[Baby M] has a swollen area on the right side of his face and neck, position altered to help drainage"?

TYNDALL: Yes.

JOHNSON: Do you then record at tile 410 the fact that [Baby M]'s care continued in the neonatal unit from 10 April through to 3 May?

TYNDALL: Yes.

JOHNSON: Between those two dates, there are some more text messages recorded between tiles 411 and 420, all of which are contained also in the sequence for [Baby L]?

TYNDALL: Yes.

JOHNSON: At 421 and 422, some messages on 24 April, again contained in [Baby L]'s sequence?

TYNDALL: Yes.

JOHNSON: And then at 423, the discharge of [Baby M] on 3 May?

TYNDALL: Yes.

MR JOHNSON: Thank you very much.

I don't know whether there are any questions.

MR MYERS: No, thank you.

MR JUSTICE GOSS: Right. Thank you very much. Are you doing the neonatal -- you're staying. Thank you.

MR JOHNSON: We can deal with the next neonatal review as well.

This will require the big black files, please.

We've put a divider on each one already for you.

(Handed)

Mrs Tyndall, it's self-evident I know, but for the sake of the record, this sequence covers both cases of [Baby L] and [Baby M]?

TYNDALL: Yes.

JOHNSON: Therefore on the front sheet it says:

"NNU review: events 17 and 18"?

TYNDALL: Yes.

JOHNSON: It follows the same conventions that apply to all the other documents of this type; is that right?

TYNDALL: Yes.

JOHNSON: Thank you. Starting, therefore, so far as the data is concerned on the second page, page 2 of 12, do we see that at the start of the relevant shift, which in this case is Saturday, 9 April, the day shift --

TYNDALL: Yes.

JOHNSON: -- do we see on that page the locations of the various children who were in the unit?

TYNDALL: Yes.

JOHNSON: As I think we've pointed out a couple of times at least now, both [Surname of Babies L & M] boys in nursery 1?

TYNDALL: Yes.

JOHNSON: Having been born the day before?

TYNDALL: Yes.

JOHNSON: Their designated nurse, Mary Griffith?

TYNDALL: Yes.

JOHNSON: And the other two children, GT and TSB, their designated nurse was Lucy Letby?

TYNDALL: Yes.

JOHNSON: If we can move on to page 3, this sequence is slightly different in the sense that because it deals with two separate children, [Baby L] is -- his entries are highlighted in a sort of a dusky pink or salmon-y sort of colour?

TYNDALL: Yes.

JOHNSON: And [Baby M]'s are in the more usual yellow colour that we've seen with all the other reviews?

TYNDALL: Yes.

JOHNSON: So we see on page 3 of 12 that Mary Griffith was responsible for all the pieces of information which appear on that page for those two children?

TYNDALL: Yes.

JOHNSON: We see that Lucy Letby was dealing with AW and GT. GT was her child in nursery 1; is that right?

TYNDALL: Yes.

JOHNSON: And AW was a child whose designated nurse was Ashleigh Hudson in nursery 2?

TYNDALL: Yes.

JOHNSON: Moving on to page 4 of 12, we see that, so far as [Baby L] was concerned, all the entries, save for one which relates to Dr Ukoh at line 63, are Mary Griffith?

TYNDALL: Yes.

JOHNSON: The [Baby M] entries follow a very similar pattern in that all but one, which relates to Dr Ukoh, are also Mary Griffith?

TYNDALL: Yes.

JOHNSON: And for Lucy Letby, there are a few entries relating to -- five entries, I think, in total relating to the child TSB who was her other child in nursery 1?

TYNDALL: Yes.

JOHNSON: Moving on to page 5 of 12, there we see -- first of all, picking out the highlighted lines, which are 98 to 102, first of all, they're the [Baby L] lines. Do we see that Lucy Letby was involved in starting the infusion for [Baby L] at midday?

TYNDALL: Yes.

JOHNSON: Tile 100?

TYNDALL: Yes.

JOHNSON: Otherwise, so far as [Baby L] was concerned, the other entries, the other four entries at that same time, insofar as

they're attributable directly to anyone, are Mary Griffith's responsibility?

TYNDALL: Yes.

JOHNSON: So far as [Baby M] is concerned, we have four lines, 188 and 122 to 124, for which Mary Griffith was responsible for two and [Nurse B] for the other two?

TYNDALL: Yes.

JOHNSON: We see what may be the reason for that at line 122, a reminder of what we've just seen in the sequence, that Mary Griffith was sent on a break at 12.30?

TYNDALL: Yes.

JOHNSON: Otherwise, do we see that Lucy Letby, prior to assisting in putting up the dextrose for [Baby L] at midday, had been involved with her child, TSB --

TYNDALL: Yes.

JOHNSON: -- between lines 89 and 93?

TYNDALL: Yes.

JOHNSON: And those are an infusion and prescription between 11.25 and 11.35?

TYNDALL: Yes.

JOHNSON: Subsequent to being involved in putting up the infusion for [Baby L], we see that she was involved with the child GT and the child TSB?

TYNDALL: Yes.

JOHNSON: Which are the other two children in nursery 1. That's lines 103 down to 109, with a couple of exceptions?

TYNDALL: Yes.

JOHNSON: Thereafter, at 117, at 12.11 hours, do we see she signed for a prescription with Mary Griffith for the child TSB?

TYNDALL: Yes.

JOHNSON: Thank you. Moving on, please, to page 6 of 12, adopting the same sequence, starting this time with [Baby L], because his

entries are nearer the top of the page, at 13.00 hours do we see entries relating to actions noted by Mary Griffith?

TYNDALL: Yes.

JOHNSON: The same at 14.00 hours, line 152?

TYNDALL: Yes.

JOHNSON: Further down the page, still keeping an eye out for [Baby L], lines 176 and 179 being entries at or just before 15.00 hours?

TYNDALL: Yes.

JOHNSON: Turning our attention to [Baby M], starting at 143, all entries made by Mary Griffith, these, so at 143, 162, 169 and 178, between 13.59 and 15.00 hours?

TYNDALL: Yes.

JOHNSON: Otherwise do we see Lucy Letby picked out in that blue font concerned with the other two children in nursery 1, GT and TSB?

TYNDALL: Yes.

JOHNSON: Thank you. On page 7 of 12 we see the collapse of [Baby M] picked out at line 213, don't we?

TYNDALL: Yes.

JOHNSON: So concentrating on [Baby M] first of all, on the page, do we see that at line 194 Lucy Letby and Mary Griffith sign for starting an infusion for [Baby M]?

TYNDALL: Yes.

JOHNSON: At lines 209 and 210, do we see that Lucy Letby also co-signed for prescription medication given to [Baby M] at 15.45?

TYNDALL: Yes.

JOHNSON: I'll ignore what happens after the event just for now, I'm concentrating on what happened before. So far as [Baby L] was concerned, do we see that at 15.00 hours, line 180, Mary Griffith made an entry on one of his charts?

TYNDALL: Yes.

JOHNSON: But that otherwise, of the four -- sorry, of the -- yes, of the four other entries relating to [Baby L] that didn't involve a doctor, in other words that aren't -- so what I'm looking at now is lines 212 -- sorry, 201, 202, 203 and 205, those four events which took place between 15.34 and 15.40, they were signed and co-signed by Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: And that 203 is signed for just by Mary Griffith?

TYNDALL: That's because it's a retrospective nursing note entry about what happened at that time.

JOHNSON: So the contemporaneous material all co-signed by Lucy Letby?

TYNDALL: Yes.

JOHNSON: The exception to that position being at line 211, which is a medical note, which is a document or something sent for pathology for --

TYNDALL: Yes, it's the computer-timed entry on the pathology system for [Baby L].

JOHNSON: Yes. Otherwise, and I'm still looking above the black line at the moment, do we see that other entries for which Lucy Letby has a responsibility concern the two other children in nursery 1, GT and TSB?

TYNDALL: Yes.

JOHNSON: With the exception of AW, who was one of the children in nursery 2 at line 189, where Lucy Letby's the co-signer for medication given to that child?

TYNDALL: Yes.

JOHNSON: After [Baby M]'s collapse, do we then see that immediately after, at 214 and 215, there are entries -- there's an entry on a chart and then a nursing note made by [Nurse B] and Nurse Mary Griffith respectively?

TYNDALL: Yes, the entry made by [Nurse B] is that note that he has been transferred to the ITU chart and the nursing note is the retrospective one about [Baby M]'s collapse.

JOHNSON: Thank you. We see at line 216 a note made on the neonatal fluid balance chart made by Belinda Williamson?

TYNDALL: Yes.

JOHNSON: Which is what she told us or to do with what she told us about making up the new 12.5% dextrose solution for [Baby L]?

TYNDALL: Right, yes.

JOHNSON: Then we see at 218, 221 and 222 notes and observations recorded which are made by Lucy Letby for the children GT and TSB?

TYNDALL: Yes.

JOHNSON: Thank you. Over the page, please, just after 4 pm, this whole page covers a period of almost exactly an hour from 16.01 to 17.00 hours. Do we see many entries highlighted in yellow relating to [Baby M], who had just collapsed?

TYNDALL: Yes, these are all to do with the resuscitation.

JOHNSON: We see that in relation to most of those, where they are signed by nurses, most are attributable to Lucy Letby and Mary Griffith?

TYNDALL: Yes.

JOHNSON: They include, at 228, the fact that the care of [Baby M] was handed over to Lucy Letby consequent on his collapse?

TYNDALL: Yes.

JOHNSON: Otherwise we see many medical entries made for [Baby M] by either Dr Jayaram or Dr Ukoh?

TYNDALL: Yes.

JOHNSON: Otherwise, so far as [Baby L] is concerned, do we see a total of five entries at 16.24, 16.30 and 17.00?

TYNDALL: Yes.

JOHNSON: And those are all signed by either Mary Griffith or Belinda Williamson?

TYNDALL: Yes.

JOHNSON: Thank you. Moving on then, on page 9 of 12, starting with [Baby M], do we see the first entry for [Baby M] on the page is at 17.25?

TYNDALL: Yes.

JOHNSON: Signed by Lucy Letby, [Nurse B] and Dr Barrett?

TYNDALL: Yes.

JOHNSON: There are some prescriptions countersigned by Lucy Letby at lines 280 and 281?

TYNDALL: Yes.

JOHNSON: And further down the page at 288, together with blood gases and intensive care equipment charts and the like at 289, 292, 307 and 309?

TYNDALL: Yes.

JOHNSON: There are three entries on that page concerning [Baby L] at 293 to 295?

TYNDALL: Yes.

JOHNSON: Otherwise, so far as Lucy Letby is concerned, we can see towards the top of the page at line 267 an entry made at 17.00 hours in respect of the child TSB?

TYNDALL: Yes.

JOHNSON: And further down the page, 284 to 286, concerning the child GT, which are some prescriptions signed by Mary Griffith, countersigned by Lucy Letby?

TYNDALL: Yes.

JOHNSON: Over on page 10, here there is a fairly even split between [Baby M] and [Baby L].

Dealing with [Baby M] first and the yellow-shaded boxes, do we see that most of these entries have gone to the more normal type of entries, in other words medication being given or charts being noted with vital signs or observations?

TYNDALL: Yes.

JOHNSON: The exception so far as -- the exceptions for [Baby M] so far as this page is concerned, in other words the ones that don't concern Lucy Letby, are an e-prescription at 324 made by Dr Jayaram?

TYNDALL: Yes.

JOHNSON: And the insertion of the line at line 331 by Dr Ukoh?

TYNDALL: Yes, and then a radiology X-ray at line 343.

JOHNSON: Yes. So far as [Baby L] is concerned, do we see that Mary Griffith and/or Belinda Simcock, so far as the nursing staff are concerned, appear to be signing the material relating to him?

TYNDALL: Yes.

JOHNSON: So far as the medical staff are concerned, we see an entry made by Dr Jayaram at line 345?

TYNDALL: Yes.

JOHNSON: Otherwise in the top quarter or fifth of the page, do we see a few entries relating to the child AW for which Ashleigh Hudson and Lucy Letby have signed and co-signed respectively?

TYNDALL: Yes.

JOHNSON: Thank you. Then the final page, please. This covers the period of time from 20.02 hours to 21.26. For [Baby M] do we see that Mary Griffith, her name appears but that's because it relates to nursing notes that she was making at this time concerning what had happened to [Baby M] --

TYNDALL: Yes.

JOHNSON: -- earlier in the shift? Otherwise, so far as [Baby M] was concerned, and with the exception of the single entry made by Dr Ukoh, do we see that this page really concerns nursing note updates made by Lucy Letby?

TYNDALL: Yes.

JOHNSON: So far as [Baby L] is concerned, do we have a similar picture but that this time it's only Mary Griffith, but these all relate to nursing note updates?

TYNDALL: Yes, correct.

JOHNSON: Thank you. We then have the other two children in nursery 1, GT and TSB, and do we see a similar position given that this is after the shift has nominally ended after 8 pm, that these are all nursing note updates made by Lucy Letby in respect of those two children?

TYNDALL: Correct.

MR JOHNSON: Thank you very much. I don't know whether there are -- no, there are no further questions for you.

Does your Lordship have any questions?

MR JUSTICE GOSS: No, thank you very much.

(The witness withdrew)

MR JOHNSON: Your Lordship knows we've had a few difficulties recently with choreographing witnesses.

MR JUSTICE GOSS: Yes.

MR JOHNSON: Although we're moving on and have moved on to the case of [Baby M], we're going to interpose some nurses this week who will give very short evidence relating to [Baby L] as well. But short of closing the neonatal unit at the Countess of Chester, I'm afraid we can't produce them today.

MR JUSTICE GOSS: No. I'm sure that's understood. So tomorrow, are we... Are we going back to nurses in relation to [Baby L] or -- no?

MR JOHNSON: Yes, we're carrying on with [Baby M]'s case tomorrow.

MR JUSTICE GOSS: Right, and then going back later, good, all right.

Tomorrow, of course, is an unconventional start time, 1.00. I hope that's realistic for the juror concerned, that you will be able to here at 1.00. If not, please, if possible, phone in to say that there's a delay. Otherwise, everyone else will be here ready to go at 1.00. We'll have a mid-afternoon break, probably a 15-minute break or something like that. Will that be all right? I'm sorry, it's out of the pattern but it makes use of the day and we can get on and make some progress or continue to make progress.

Thank you very much indeed. Please remember your responsibilities: no communication unless you are all sitting together talking about the case together in a private place and no research about anything to do with the case.

(In the absence of the jury)

MR JUSTICE GOSS: Mr Johnson, as you indicated to the jury, helpfully you had tagged the jurors' -- were my tags that you provided helpfully last week removed for that purpose?

MR JOHNSON: No.

MR JUSTICE GOSS: I seem to have lost them.

MR JOHNSON: You've lost them all by yourself, my Lord.

MR JUSTICE GOSS: I wasn't being critical, I thought it was very useful because there were a lot of them, but I don't seem to have them here. I just wanted one to put on the -- to flag the first one as well because I know we're going to put another one in behind, in between the two. Could I borrow those? I'll only take the one I need, then I'll return them. Thank you.

MR JOHNSON: Take a few spares.

MR JUSTICE GOSS: Yes, all right. I will just take the one.

Thank you.

Nothing else? So Mr Myers, we hope we'll see you at 1 o'clock.

MR MYERS: Yes, I hope so too. We'd be grateful if we could speak to Ms Letby this afternoon, my Lord.

MR JUSTICE GOSS: Yes. Thank you very much.

MR MYERS: Thank you very much.

(3.20 pm)

(The court adjourned until 1.00 pm on Tuesday, 21 February 2023)