

14 October 2022 (Day 8)
Dr Dewi Evans

CONTENTS

DR DEWI EVANS (sworn)
Examination-in-chief by MR DRIVER
Cross-examination by MR MYERS

Friday, 14 October 2022
(10.30 am)

(In the absence of the jury)

MR JUSTICE GOSS: (Inaudible: no audio feed from court) -- we'll have to have a break.

MR JOHNSON: Can we deal with it when we get there?

MR JUSTICE GOSS: Mr Myers?

MR MYERS: Just to assist with the arrangements there, Dr Hall and Dr Rahman are here today (inaudible) certainly for both of them to listen to this introductory phase because there are general matters we are dealing with. We certainly don't propose to bring them into the court for this initial iPad session, but I've discussed the matter with my learned friends and there is no objection to experts sitting in court whilst these proceedings take place so long as your Lordship is content with that.

MR JUSTICE GOSS: I am.

MR MYERS: So they will be brought into court just to sit with our instructing solicitors. They are not in court yet, my Lord --

MR JUSTICE GOSS: No, but is there room? That's what I'm looking at.

MR MYERS: We're making arrangements to create the necessary room. So they will both be here today and I'd be grateful, at the conclusion of the matters that Dr Evans is dealing with today, if I could be given just half an hour with them in the event there's anything we need to deal with at this stage that comes out of that. There may be some questions for Dr Evans, but limited to what he is dealing with today.

MR JUSTICE GOSS: Certainly. You can have as long as you need.

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

MR JUSTICE GOSS: Jury in.

(In the presence of the jury)

MR JUSTICE GOSS: Good morning, members of the jury. We are going to begin, as I indicated yesterday, with a tutorial in the use of the iPad. I'm not going to ask whether any of you are familiar or unfamiliar with the use of iPads or similar devices. We are going to proceed on the basis that at least one of you is not very familiar with an iPad, so we're going to take it very slowly. What I want is for none of you to be embarrassed if you want something to be done and shown again. So I've been speaking to the gentleman who's going to teach you this and I've said, go slowly, stop at each stage, make sure everyone is there because of course once you lose the thread of what's going on then it's hopeless.

So please, it's very important that you understand how to work these things. I've just had 20 minutes, it's not difficult, but don't be embarrassed, and if you want it doing again, just raise a hand and say, "Could you repeat that, please?" Same goes for you, Miss Letby, all right? Make sure you can follow it and if you want something repeating, please just raise a hand and it'll be gone over again. All right?

I'm now going to hand over -- thank you very much indeed.

(10.33 am)

(iPad tutorial given to the jury)

(11.05 am)

MR JUSTICE GOSS: I have never used one of these in a trial before, an iPad, so I'm a first-timer so far as this is concerned. So don't worry, I will probably be saying, "Slow down, I'm not there", that sort of thing. It's the facility. It's rather than having literally piles and piles of paperwork -- and of course you can instantly cross-reference because of the hyperlinks, essentially, so you can hyperlink to documents and it is far better, as you'll appreciate, and the environmental benefits as well.

Thank you very much indeed. Mr Johnson, I think before we proceed further -- are you able to proceed now or do you want a short break?

MR DRIVER: There's some printing taking place and the documents aren't in court yet and we can't sensibly proceed until they arrive. I'm guessing, I would hope they would be here in the

next 10 minutes or so, but we would welcome a break at this juncture.

MR JUSTICE GOSS: And we can use that time to get those screens working. So I'm sorry you're going to be going out.

Now, you have heard the estimate of 10 minutes. You will find that estimates are notoriously unreliable and I am conscious of the fact that it's not very nice out in that particular room. I'm going to leave it -- we have a very experienced usher here who will be looking after you during the trial. If you think it's -- I'll leave it to you to discuss with the jurors.

(Pause)

You'd better say 20 minutes.

MR DRIVER: Can I revise my estimate to 20 minutes?

MR JUSTICE GOSS: There you are, which will be better for you, but it's probably more realistic. All right? So a 20-minute break.

If you're all together, obviously you can talk about the case and you will all be together, but what I don't want any of you to feel is to be daunted by the technology. I'm sure you won't be. Thank you.

(In the absence of the jury)

Assuming that the photocopying is completed in this time, otherwise we can proceed, can we, Mr Johnson? The other issues that -- another issue that you mentioned doesn't stop us proceeding, at least in part?

MR JOHNSON: I don't believe so.

MR JUSTICE GOSS: Thank you very much.

I'm conscious that 20 minutes is, from your point of view -- means just in the room out there, if that's possible. I think it's better from everyone's point of view. Thank you very much. If something untoward takes place and we're not going to be ready in 20/25 minutes, we'll get a message to you. Thank you very much.

(11.10 am)

(A short break)

(11.37 am)

MR DRIVER: Thank you for the time.

MR JUSTICE GOSS: That's all right.

(In the presence of the jury)

MR JUSTICE GOSS: Yes.

MR DRIVER: Members of the jury, we will very short begin the phase of the trial where we call evidence for your consideration. But before we do so, might we just add some documents to your files, your jury bundles, to assist your understanding of the evidence as it's given.

Firstly, members of the jury, can I ask you to go behind divider number 2.

This might sound very familiar, but behind there is a bundle of paper headed "Operation Hummingbird Glossary" and since that version was put in your bundle, there's been further corrections and updates, so we're going to repeat the process by which we're going to ask you to remove the entirety of that section, section 2, the Operation Hummingbird glossary, take it out of your file, hand it to our usher. So behind divider 2.

(Pause)

Then we will hand out (inaudible) placed into the file.
(Handed). If we could put those back into the file behind divider 2. Once that's done I'm going to ask our usher to hand out some further documents that will go behind divider 3.
(Handed)

We will return to these documents shortly when appropriate, but next, please, I would like to call to give evidence Dr Dewi Evans, please.

DR DEWI EVANS (sworn)

Examination-in-chief by MR DRIVER

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

EVANS: Dr Dewi Richard Evans.

JOHNSON: Thank you. You are, I understand, a consultant paediatrician?

EVANS: I am.

JOHNSON: Could you please inform the jury when you first qualified medically?

EVANS: I qualified from the Welsh National School of Medicine in 1971 and I carried out my first paediatric post 18 months later, so my paediatric junior training took place in Swansea, initially, and then in Cardiff and in Liverpool. Each phase of my training involved specific training, working in a neonatal unit.

JOHNSON: Thank you. Having passed through the various stages of training, could you confirm that you later became a National Health Service clinical consultant paediatrician?

EVANS: Yes. I was appointed consultant paediatrician in Swansea in 1980. The most significant part of my brief, I think, was the development of newborn services for babies, particularly developing intensive care services for babies, which we did from scratch, really.

JOHNSON: How would you define your role in the development of those neonatal intensive care services in South Wales?

EVANS: Yes. Swansea was one of the bigger units in South Wales and so we covered the area extending throughout the whole of South-west Wales over time. Initially, it was very much a matter of getting on with it, trying to get good equipment, getting the nursing and medical colleagues up to speed with regard to baby care. We've heard already about levels of intensive care, so we dealt with all the babies who were really sick and needing life support, in other words, requiring periods of ventilation for days, sometimes weeks. So therefore we developed all of those services during the 1980s and 1990s in Swansea and the only babies we did not deal with were those that required cardiac surgery and babies who required surgery, general surgery. So they were transferred to Cardiff or Bristol.

But all the tiny babies who require intensive care were under my care and the care of my colleagues in Swansea from 1980 onwards.

JOHNSON: Thank you. We'll return to aspects of your clinical experience in due course.

MR JUSTICE GOSS: Could I just ask you to pause there? Would you like to sit down? I think in fact we would like you to sit down for the purposes of the camera. Is that all right? I think it'll be easier as well for you. The important thing is you have, if I may say so, a good strong voice, so that will carry across to the jury. It will be more comfortable for you to sit down, thank you, and helpful to us, apparently.

MR DRIVER: I'm obliged.

Dr Evans, could you confirm that you are a fellow of the Royal College of Physicians?

EVANS: I am.

JOHNSON: A fellow of the Royal College of Paediatrics and Child Health?

EVANS: I am.

JOHNSON: And you have obtained a diploma in obstetrics from the Royal College of Obstetrics and Gynaecology?

EVANS: Yes.

JOHNSON: So the jury understand your role in these proceedings, you've never been employed in the Countess of Chester Hospital?

EVANS: No.

JOHNSON: At no point you have been responsible for providing medical care or attention to any of the babies that we are to consider, in particular, in these proceedings?

EVANS: None at all.

JOHNSON: Thank you.

Before I took you back to your qualifications, you were explaining to the jury some of your contribution to the development of neonatal care and the establishment of services in South Wales and you were, I anticipate, touching upon the developments that you observed during your long period as a consultant. And in summary, how would you characterise the evolution of the service under your supervision?

EVANS: Yes. I think my generation were responsible, really, for the development, for the evolving of neonatal care in the UK. In the 1970s, babies who were small and ill died. There was very little care available for them, we did not have the expertise, we did not have the monitoring, we did not have the equipment, so therefore it was very much an essential and important part of our generation that we provided good services, you know, for these ill babies.

So a lot of my experience was based not on reading books or finding out what was happening in other places, but very much hands-on, in other words you were there, you had a sick baby in an incubator, you'd place this baby on ventilatory support, the

monitoring was nothing as good as it is now, and therefore very much of it was touch-and-go, really. It could be quite fraught because there were demands, other demands on children's services, but those of us who were really very passionate about these babies would go to places to get money to buy equipment and give stories in the press whenever one of our ill babies went home. In other words, just to get the publicity to get everybody involved with baby care.

I became involved with an organisation called Bliss because they were very supportive, collecting money for sick babies. So this was it in the 1980s.

Then in 1990, in Swansea, we built -- the health board built a brand new children's department, which included a brand new neonatal unit, which I helped design. So life became a bit easier because we had more space. By that time we had some fantastic -- well, we had some superb nursing staff who were excellent, and also by that time there were far, far more junior doctors who were developing an interest in baby care and therefore things took off from the 1990s.

JOHNSON: Thank you. How did that hands-on approach that you've mentioned, how did that evolve in this period?

EVANS: Well, babies arrived in the neonatal unit in all sorts of conditions. The most common problem were problems associated with prematurity and therefore one had to see them through, quite often, the first few days of life. Now, this meant giving oxygen. If giving oxygen was insufficient, one needed to give treatment called CPAP, continuous positive airway pressure, which has saved thousands of lives, I think, over the last few decades.

If they did not respond to treatment with CPAP they required what we called intubation, in other words you are to pass a breathing tube into the lungs and place them on ventilatory support. In other words, put them on a breathing machine. And the initial breathing machines were, I suppose, primitive compared to the ones we have now, but they worked, and in addition to giving babies ventilation support you also had to give babies intravenous fluids because they were not well enough to absorb milk.

Therefore you had to -- well, give them cannulas, in other words pass a cannula, initially quite often into the umbilical vein and later into a vein in the hand or somewhere, wherever you could find a vein, really, to make sure that they were having adequate fluid, which on the whole consisted of glucose with electrolytes, in other words salt, and amino acids/protein. If you felt that they required intravenous nutrition for a long

time, we've heard of total parenteral nutrition, TPN, then you'd have to work out a cocktail of nutrition that was appropriate to each baby.

So those developments continued during the 1980s and during the 1990s.

JOHNSON: Thank you. We'll return to the detail in due course, but how did the infrastructure of these departments evolve over those decades?

EVANS: Well, all neonatal units are dedicated units, in other words they are responsible only for the care of newborn babies. So in other words, they're not responsible for infants of 3 months or whatever. So first of all they are neonatal units dedicated to small babies.

Usually, they're next door to the maternity unit, so therefore a baby can be transferred from the maternity unit to the neonatal unit promptly and quickly and they tend to be divided into sections. So you'd have the sickest baby in the intensive care area; I'll explain that in a bit more detail. Babies who were recovering would be in a high dependency area, and babies who were pretty well but too small to go home would be in the, if you like, the ordinary area, you know, what was called the growth area.

In terms of the intensive care, this was where all the equipment would be concentrated mainly -- so by equipment, I'm talking ventilation -- sorry, let's start with an incubator. These babies were all nursed in an incubator to maintain their temperature. And then they'd be attached to various monitoring systems, okay? Monitoring. And the monitoring would monitor heart rate, respiratory rate, later oxygen saturation, what we often call sats, oxygen saturation. Later, as things evolved, it became easier to monitor blood pressure in babies.

So those were the main features. So these babies were on continuous monitoring. You know, you'd look at a monitor, you could see exactly what the heart rate was like and you'd know immediately if the oxygen saturation, you know, was falling or whatever.

JOHNSON: Thank you. Shortly, we'll show the jury a video of such equipment. But just returning to your experience and your clinical responsibilities, could you confirm that you were the clinical director, that is to say the head of department, of paediatrics and neonatology in Swansea --

EVANS: Yes.

JOHNSON: -- for the period 1992 to 1997 and the period 2004 to 2006?

EVANS: Yes. 2008, actually.

JOHNSON: 2008, forgive me.

EVANS: Later on I took on being head of department that covered the maternity services as well, so you know -- so it was one organisation for one's maternity team and one's paediatric team.

JOHNSON: Thank you. Are you still a practising consultant paediatrician and neonatologist?

EVANS: No, no. I gave up my full-time clinical practice in 2009. I'd been in consultant practice for nearly 30 years, I thought that was enough, and that was my -- you know, that was the plan. I've done a few locums since then, short-term locums, but most of my input since then has been with preparing reports for the courts in relation to baby care and childcare. These reports -- well, first of all, I've dealt with loads of court cases where there were allegations of clinical negligence involving small babies. So my first time as an independent medical witness was in 1988 and I've done that more or less up until about now, really.

I don't take on cases of clinical negligence anymore. Then increasingly, from the time I gave up my full-time clinical practice, I've become more involved in preparing reports for family courts where there are concerns regarding childcare or baby care and also for the Crown Court, where there are serious allegations of, you know, involving babies who are suspected of having died suspiciously or have had injuries.

And I've prepared a report both for police authorities, usually via the NCA, the National Crime Agency, and I've also prepared reports for law firms representing defendants.

JOHNSON: Remind us of the times, please. So when did you begin appearing in civil and/or criminal courts as an expert witness?

EVANS: 1988.

JOHNSON: Until now?

EVANS: Until -- yes, until now, yes.

JOHNSON: Thank you. Pausing there for a moment, members of the jury, and forgive me, Dr Evans, if we could go, please, behind divider 3.

My Lord, whilst Dr Evans is still in court giving evidence, we're going to introduce some background agreed facts to give context to some of the evidence that Dr Evans will give in due course. So if I may, whilst Dr Evans remains with us, I'd like to introduce to the jury and read into the record some agreed facts.

MR JUSTICE GOSS: Yes. This is a legal direction in relation to agreed facts. They are what they say they are: facts that are agreed. In other words, the prosecution and the defence agree the facts that are set out here. So you can treat them as agreed evidence. The significance of the agreed facts, just as with any evidence and any findings that you make in relation to controversial evidence, evidence that isn't agreed, is entirely for you. You will decide the significance of any pieces of evidence or the insignificance of any piece of evidence and the way in which any piece of evidence assists you in your decision-making process. All right? But this is agreed evidence, so treat it as agreed evidence. You have it all written out here, you can refer to it as and when you need to if you need to at any stage, but it's obviously more helpful to have this than have a whole lot of evidence either called or read to you about these facts. It's a simple way of presenting agreed evidence.

MR DRIVER: I'm grateful.

Members of the jury, you'll see this document is divided into sections and the first section is headed "The Cheshire and Mersey Neonatal Network". This is intended to inform you of the context of the events that you're going to consider.

So agreed fact number 1 -- and forgive me, Dr Evans, this is behind divider 3 if you care to follow.

Agreed fact number 1 reads:

"Cheshire and Mersey Neonatal Network (sometimes referred to as the Mersey Cheshire Deanery) is a tiered network of hospitals. There are three tiers of hospitals designated to reflect how sick and/or premature a baby may be and the level of patient care required on a scale of 1 to 3. A level 3 unit is the most specialised and deals with the most difficult cases."

Sub-paragraph number 1:

"During the period June 2015 to June 2016, the Liverpool Women's Hospital (which is in Liverpool 8, close to the city centre) and Arrowse Park Hospital [which is in Upton, Birkenhead, Wirral] were designated as level 3 (also referred to as tertiary) neonatal intensive care units."

And you'll see the abbreviated form of that title in brackets:

"Those level 3 units routinely provided neonatal intensive care to babies with complex medical needs and babies of less than 27 weeks gestation."

Sub-paragraph 2:

"During the period June 2015 to June 2016, the Countess of Chester Hospital was designated as a level 2 unit and routinely provided care for babies of 27 weeks gestation and above and babies that required intensive care for up to 48 hours. Babies that required intensive care after 48 hours would normally be transferred to an intensive care unit (NICU) as described in the paragraph above. Babies of less than 27 weeks gestation born at or brought to the Countess of Chester Hospital would be stabilised and then transferred to a NICU on the same day."

Sub-paragraph number 3:

"During the period of June 2015 to June 2016, Leighton Hospital, Macclesfield Hospital, Ormskirk and District General Hospital, Warrington Hospital and Whiston Hospital were designated as level 1 units, sometimes referred to as local neonatal units."

Number 4:

"Alder Hey Children's Hospital was the designated neonatal surgical unit for the network."

So that's, in very broad terms, the structure of the Cheshire and Mersey neonatal network of hospitals at the time that we are interested in. Dr Evans, could you confirm that this tiered approach is the NHS standard for England and Wales?

EVANS: Yes, it is, yes.

JOHNSON: Thank you. Now, moving on through this document briefly, you'll see that the next section, which is numbered currently number 3, but we'll just overwrite the number 2 there, please. Section 2, "The Countess of Chester Hospital". So we're now zooming in, as it were, on to the Countess of Chester Hospital.

So agreed fact number 2 pertaining to that hospital:

"During the period of June 2015 to June 2016" -- JUROR: Sorry, did you say section 2?

MR JUSTICE GOSS: Yes, there's a typing error. Mr Driver did say overwrite section 2.

MR DRIVER: I was trying to skate over the typo but I didn't get very far.

MR JUSTICE GOSS: It's a typo, so just write 2 over the 3 there. My documents are stapled together. It's very difficult to have stapled together documents in a lever arch file and it's not easy, actually, to remove staples. It's easier, frankly, to separate them. So I think we'll just pause for a moment to enable people to separate them. There are two ways of doing it, either taking it out of the file... The trouble is that once you take documents out then you've got to put them back in again and with lever arch files it's best to keep them altogether within their sections but separated individually as pages.

(Pause)

MR DRIVER: So the content of section 2, the Countess of Chester Hospital. Agreed fact number 2 reads:

"During the period June 2015 to June 2016, the neonatal unit, the NNU [you'll become familiar with that abbreviation] of the Countess of Chester Hospital had four rooms, four nurseries: room 1 was the intensive care unit; room 2 was the high dependency unit; rooms 3 and 4 were special care units."

Agreed fact number 3:

"Premature births or very ill babies were initially placed in room 1 and transferred to room 2 after a period of stability and then to rooms 3 and 4 to establish their feeds and spend more time with their parents with the intention of them going home."

Number 4:

"There were 16 designated cots on the unit, two ICU beds, one stabilisation and transfer bed, three high dependency beds (HDU beds) and 10 neonatal or special care (SC) beds."

Agreed fact number 5:

"Additionally, there were four transitional care cots (TC cots) located on the postnatal ward where the baby would receive some neonatal nursing care and the mother would receive midwifery care in the same area."

Agreed fact number 6 deals with the access into and exit out of the hospital or the unit in the hospital, I should say:

"Entry to the NNU at the Countess of Chester Hospital was controlled by locked doors. One was accessed from the public

entrance side of the hospital, the other from the labour/maternity ward. From the outside, the door could be opened by use of an electronic pass or swipe card. From the inside, the door could be unlocked by pressing a button. Authorised staff at the NNU of the Countess of Chester Hospital were issued with individual electronic swipe cards, each with a unique reference number. Upon presentation of these cards to a door swipe reader, the secure door was opened and a record of location, time and date of that access was centrally recorded and stored on a database.

"Only the use of a card was recorded. Corresponding data for the period May 2015 to July 2016 has been retrieved, although no records between July 2015 and October 2015 were available."

That retrieved data and records is exhibited and there is the exhibit reference number cited. So that was the system.

But agreed fact 7 informs you:

"There were situations in which someone could enter the secure area and there would be no record. Examples of which are: 1, when someone, person A, opened the door with their pass and person B entered."

Two people entering at once with the use of one card.

"Example 2: someone, person A, opened the door by pressing the button from the inside and allowing person B to enter."

So in that example, the entry of person B would not be recorded because he or she hasn't used their card, obviously.

"3. When people attended at the unit and pressed the entrance bell, the phone could operate the door and allow it to open and buzz the individual into the unit and therefore individuals entering in this manner would not be recorded."

I'm sure you are all familiar with that sort of process.

Dr Evans, could you confirm that you are familiar with those systems?

EVANS: Yes.

JOHNSON: They are commonplace?

EVANS: Yes, the norm these days.

JOHNSON: Thank you.

Members of the jury, you've heard something about the systems in place at the Countess of Chester Hospital. Now we're going to play you, with the assistance of Mr Murphy, a walk-through of the neonatal unit at the Countess of Chester Hospital. It's just short of 10 minutes long. This was recorded at a time when there were no patients or staff and there's commentary from a member of staff to explain to you the rooms and where the filming takes place.

(Video played to the court)

MR DRIVER: My Lord, when we call witnesses from the Countess of Chester Hospital, the treating doctors and nurses, we'll introduce a plan of the neonatal unit so the jury can orientate themselves as the witness moves from room to room that we've just seen recorded on screen.

Members of the jury, that's the place. As to the staff who worked within the Countess of Chester Hospital, if we go back to the agreed fact document briefly, you'll see the subtitle "Medical staff", the doctors. Agreed fact 8:

"The doctors attached to the neonatal unit fell into three broad categories of descending seniority and experience: consultants, registrars and senior house officers."

To expand upon that a little, number 9:

"Registrars and senior house officers are sometimes referred to as junior doctors. In this context 'junior doctor' means doctors who are not consultants. The registrars and senior house officers were often further categorised by the use of the term ST followed by a number. In this context ST plus means specialty training and the number that follows the ST plus is a reference to the number of years that the registrar or senior house officer had been doing paediatric training, having qualified as a doctor. Therefore a registrar who was ST plus 5 would have carried out 5 years of post-qualification paediatric training."

Dr Evans, can you confirm that they are standard titles applied across the National Health Service?

EVANS: Yes, they are.

JOHNSON: Thank you. Agreed fact number 10:

"During the period June 2015 to June 2016, the paediatric medical staff attached to the neonatal unit at the children's ward and the postnatal ward of the Countess of Chester Hospital consisted of seven consultants and a team of junior doctors, including nine middle grade doctors [that's to say registrars or

specialty training 3 years plus], 11 senior house officers, which included foundation doctors, the ST1-3 years level, paediatric and general practitioner trainees."

As to the level of service provided, agreed fact number 11:

"Around the clock there would be a doctor covering the paediatric and neonatal departments who would carry a bleep so that they could be contacted without delay. The doctor would not necessarily be in the neonatal ward. There were two types of bleep. One, non-urgent, whereby an audible bleep will sound and a telephone number will be displayed in order to contact the necessary ward or department, or 2, urgent known as a crash bleep. The audible sound is more of an alarm and it is followed by an instruction to attend a specific location as a matter of urgency."

Dr Evans, could I ask you, please, to explain to the jury the distinction between neonatal and paediatric in this context?

EVANS: Yes. The neonatal service is just for babies. The term neonatal applies to a baby up to 4 weeks of age, and then children, obviously, everyone above this age up to the age of about 16 years.

JOHNSON: Thank you.

Finally for this part, members of the jury, the last feature of the agreed facts. We've looked at the doctors, now we look at the nurses.

"Nursing staff", agreed fact number 12:

"The paediatric nursing staff worked on a rota within a day/night shift system, which typically consisted of, (1), a ward manager, (2), senior neonatal practitioners. There would be shift leaders and they would be band 6 [ie band 6 nurses] and R23 enhanced neonatal trained nurses."

You'll hear more about this later:

"3. Neonatal practitioners. That would be band 6 nurses without that specific enhanced qualification or band 5 nurses. Additionally, at 4, there would be nursery nurses, also referred to as band 4 nurses."

Dr Evans, a little earlier, when you were telling us about the developments in the infrastructure and the equipment and the like that would be used within the neonatal service you made reference to a development in monitors.

EVANS: Yes.

JOHNSON: Are you familiar with the Philips monitor?

EVANS: We didn't use it in Swansea at the time, but I know what it is.

JOHNSON: In a sentence or two, could you tell the jury what such monitors perform?

EVANS: We're talking now about the heart rate, et cetera?

JOHNSON: Yes.

EVANS: Yes, right. This is the monitor that will be attached to a baby by a system of leads and the monitoring set-up measures a number of clinical features: heart rate, respiratory rate, oxygen saturation, SAO2, some of them measure end-tidal CO2, carbon dioxide, blood pressure. So therefore, they measure lots of parameters. In addition to measuring these parameters, there is a normal range for each of these values. So for heart rate, for instance, you can set a higher heart rate, 160, say, beats per minute, and a lower heart rate, which could be 80 or 90, it varies with each patient.

So therefore if any patient's value falls or goes behind this normal range, alarms go off, and that alerts your nurse or doctor to the fact that there's something the matter with the baby and the alarms -- they go off quickly, they don't... So if the leads that attach them to the baby fall off for any reason, the alarms will go off. So therefore, this is a very, very effective way of monitoring a baby continuously. It's not something you do every 10 minutes or whatever, it's continuous. Temperature maybe is another routine measurement as well.

So therefore these monitors measure a number of things and that gives you continuous information regarding any baby who may be or is deemed to be vulnerable or unwell.

JOHNSON: Thank you. I'm going to ask Mr Murphy to play us another demonstration video. Dr Evans, if you want to add anything, you can ask Mr Murphy to pause, I'm sure he will, or if you want to make your contribution at the end of this edited version -- it's been edited, my Lord, because it's very technical and there's a risk of an overload of technical information to the layman.

(Video played to the court)

Pausing there, please, Mr Murphy, the commentator said it was configured for neonatal profile only. Could you expand upon that for us?

EVANS: Yes, I can. Can you go back 10 seconds to show -- to freeze the monitor? Thanks.

Right. The normal values for babies are different to values for children which are different to values for adults. Therefore what may constitute a normal heart rate for a baby would be far too fast for a child. Therefore these parameters are geared towards -- well, babies. So you can see that's the heart rate there, it measures 120. That's fine. But if the heart rate is 140 for a baby, that's fine as well. Whereas if it is 140 for an adult, you know, you'd have quite a sick patient. So therefore, these are neonatally specific. Same for respiratory rate. A rate of 55 for a baby, a small baby, that's fine. But if it is an adult, you'd be pretty unwell.

Then the other one is the saturation, which is the 95%, which is at 95% there. The normal saturation is 96 to 100, but -- an important but -- if you over-oxygenate small babies, it can lead to blindness, therefore you have to be far more careful in the way you monitor oxygen saturation in babies because you don't want your treatment to cause additional problems.

The same applies to blood pressure -- I can't see the monitor. Blood pressures in babies are lower and one measures three values of blood pressure: the systolic pressure, which is the highest; the mean or average, which is the middle one; and then the diastolic pressure, which is the... Therefore, these values are specific to newborn babies.

JOHNSON: Thank you. Could you remind us all in layman's terms, if you could, what you mean by oxygen saturation levels?

EVANS: Yes, this is the concentration of oxygen in the blood. One's normal oxygen concentration is more or less 100%, you know, the norm is 96 to 100%. Therefore that's the norm hopefully that applies to all of us here when we are breathing normal air. Air, by the way, is 21% oxygen. So therefore, one's oxygen saturation is high, near to 100%.

JOHNSON: Thank you.

(Video playing continued)

Pausing there, please, Dr Evans, anything you want to expand upon on that?

EVANS: I'll do it after the respiratory rate.

JOHNSON: Thank you.

EVANS: Yes, I do, actually, but let's do this first.

(Video playing continued)

EVANS: If we could go back a couple of seconds to show the monitor. Right. Yeah, that's fine.

I think there's some important additional features for this, which are useful. If you look to the left of the 120, you can see a load of waves, which is the ECG monitoring. Therefore, not only can you see the heart rate, this monitor also shows you that the heart is beating regularly. In other words, nice, normal beats, there aren't any abnormal heart beats present. So that's quite important because there are all sorts of cardiac irregularities that can affect sick patients.

The same for the 55. That is the respiratory rate, but the waves, the white waves that you can see, give you an indicator of the pattern of breathing because small babies don't always breathe regularly, their breathing may slow down, may stop actually, apnoea, pick up again, and therefore it's very useful to record the trend of breathing. And the saturation, well, that's 95 or whatever it is, so that's fine.

JOHNSON: Thank you.

(Video playing continued)

EVANS: Just a point there. If we could go back a couple of seconds, please. You can't monitor blood pressure continuously unless you have an indwelling catheter in an artery. Therefore the blood pressure is checked on a regular -- you know, regularly.

The 80 measures the higher pressure, what I called the systolic pressure earlier, the 50 is the lower pressure, and in brackets, the 60, that is what we call the mean BP, the mean or average blood pressure. So those are the values and they would be recorded whenever you press the appropriate button.

JOHNSON: But unlike the other readings, that's not monitored constantly?

EVANS: Yes, your blood pressure is checked every, whatever, every few hours or according to need.

JOHNSON: Thank you.

(Video playing continued)

Pausing there, extreme tachy, could you...

EVANS: Tachycardia is a fast heart rate. That's over 160, it may go up to 200.

JOHNSON: In the workplace, the abbreviation tachy is commonplace?

EVANS: Tachy is tachycardia, yes.

JOHNSON: And the opposite?

EVANS: Brady, bradycardia, slow heart rate.

JOHNSON: Thank you.

(Video playing continued)

Pausing there, please, Dr Evans. We've just heard the commentator say that an example of when the alarms would be paused would be when the treating staff are carrying out a procedure on the patient. Could you just illustrate that a little bit?

EVANS: Yes, I can. For instance, if a baby is on ventilatory support, in other words has a tube into the lungs, one of the nursing procedures is to, what we call, suction. You pass a tube through the endotracheal tube to remove any fluid that may be living, sitting, in the endotracheal tube or down the main bronchus because babies can -- you know, lungs are wet organs, so therefore the ventilatory system is a damp system, it's a humidity-based system, and therefore you have to be careful that you're not pushing too much fluid into the baby's lungs. So therefore, you apply this procedure called ET, endotracheal, suction, and if you do that the baby -- you know, all the alarms will go off, so you turn the alarm off whilst you're doing it and an experienced nurse would carry out suction very, very promptly and not take too long over it.

The same applies if, for instance, you're passing a cannula into a baby, that could be painful, that could push the heart rate up because it hurts, and therefore you may switch the alarm off maybe just for that period of time.

JOHNSON: Thank you.

My Lord, we'll consider both of those procedures later this afternoon.

We'll just continue what's left of this video, please.

(Video playing continued)

We heard mention there of an ECG arrhythmia. Could you explain to us what that means?

EVANS: Yes, certainly. If we could go back a few seconds on this monitor. Back a bit more to get rid of the white stuff in the middle, please.

If you look to the left of the 120 figure, you'll see a lot of little spikes going -- yes, as the arrow is pointing out. Now, that is an ECG tracing.

JOHNSON: ECG being?

EVANS: Echocardiogram. Sorry, not echocardiogram: electrocardiogram, sorry. So each little peak is a heartbeat. The heartbeat is normally regular. Babies -- there might be slight variations, but it's pretty regular. So if you have an arrhythmia, in other words a rhythm that is not regular, arrhythmia, that will show up on that ECG, so instead of having -- if you look at all the spikes, they're all more or less the same distance apart. But if you have an arrhythmia, the distance between each individual one will vary. So that's your arrhythmia. There's more than one type of arrhythmia, but you know...

JOHNSON: Thank you.

EVANS: So that's what it shows.

JOHNSON: Thank you. Mr Murphy, if we could return to where we were and just watch the last chapter of this, "Screen brightness".

(Video playing continued)

Dr Evans, anything you want to add about your experience and practice of the noting of the observations taken from the screen, converted to paper?

EVANS: Not really, simply to say that this monitor -- that the monitoring systems available have evolved over a period of 40 years. They've become more sophisticated, you know, better, if you like. We had none of these in the early 80s and now they're all on one screen. So all of this has evolved during my clinical career.

MR DRIVER: Thank you.

My Lord, would that be a convenient moment?

MR JUSTICE GOSS: Certainly. Just one question whilst it's in my mind, confirming what I have understood from the demonstration. These are simply live displays of current data --

EVANS: Yes, my Lord.

MR JUSTICE GOSS: They don't record anything?

EVANS: They -- right. I need to check on that. At the bottom there, you saw a little table, which I think does... They're live data which you need to write down. Whether they...

MR JUSTICE GOSS: You can find out the answer. It's just --

EVANS: I'll have to check that to find out what happened 6 hours ago, okay.

MR JUSTICE GOSS: Thank you very much.

Right, members of the jury. Can we say 2.10 then, please? Almost an hour and 10 minutes. Thank you very much.

2.10, Dr Evans.

(In the absence of the jury)

Thank you very much.

MR JOHNSON: My Lord, there's going to be one recurrent issue that perhaps I can deal with immediately and it's the fact that both the expert witnesses and, of course, the analysts in due course will be coming and going from the witness box. And normally, of course, a warning is given to a witness not to discuss their evidence, but I wonder whether an exception could be made in terms of these witnesses for material that's yet to come.

MR JUSTICE GOSS: Yes, well, Dr Evans will have given evidence countless times, I imagine. He'll know the rules.

MR JOHNSON: Yes.

MR JUSTICE GOSS: But if it is agreed that, unless indicated otherwise, a witness is exempted from the usual prohibition on discussing their evidence whilst it is ongoing --

MR MYERS: This is in terms of the expert witnesses and the analysts?

MR JUSTICE GOSS: Yes.

MR MYERS: Or until such time as I can see an issue with that, as matters proceed now, we don't raise any issue with that at this stage, my Lord.

MR JUSTICE GOSS: All right, thank you very much.

MR JOHNSON: Often the defence want to talk to analysts as well as they're giving there evidence.

MR JUSTICE GOSS: I know. Between you, if an issue arises, alert me to it. Otherwise, with experts and analysts, that will be the normal position.

(Pause)

It's sort of linked to the question I asked. I'll hand it down to you. (Handed)

MR DRIVER: The question is --

MR JUSTICE GOSS: The defendant is not present.

MR DRIVER: Apologies.

MR JUSTICE GOSS: Thank you.

(1.06 pm)

(The short adjournment)

(2.08 pm)

(In the absence of the jury)

MR JUSTICE GOSS: I was early, Mr Myers. No problem.

(In the presence of the jury)

MR DRIVER: My Lord, before the luncheon adjournment your Lordship asked a question of Dr Evans and a little later a member of the jury posed a question in writing, both of which went to the issue of whether or not the monitor that we have looked at is also a recording device in that does it retain data.

We may read further into those questions and pose the question whether the monitors used in the Countess of Chester Hospital in 2015/2016 worked in that way.

MR JUSTICE GOSS: That's what we need to know. It doesn't matter how they work now, we need to know how they work then.

MR DRIVER: Exactly, which is of course outside Dr Evans' knowledge.

MR JUSTICE GOSS: It's just an issue that has been raised.

Just for the benefit of the rest of the jury, they may have discussed it, is there a printout of when alarms are turned off?

MR DRIVER: Both those questions can and will be answered, but not by Dr Evans.

MR JUSTICE GOSS: So an answer will be provided, but Dr Evans doesn't know? Right, thank you.

MR DRIVER: My Lord, I'm now moving to a slightly difficult part of evidence which can be found at page 457 of Dr Evans' statement.

Members of the jury, we're now going to, with Dr Evans' assistance, consider some medical terminology and some more corresponding videos.

If we could go behind divider 2. It's a matter for you but I am going to take my mini-bundle out because it's kept together by treasury tags, this piece of green string, and if it's outside the folder, it's easier to turn the pages.

Page 1 of that document. You know, Dr Evans, the jury heard a lot of reference to the term air embolism during my learned friend Mr Johnson King's Counsel's opening speech. And here we have a definition:

"Air (or more accurately gas) embolism occurs when one or more gas bubbles enter a blood vessel (vein or artery) which may or can block the passage of blood and can be life-threatening."

In the context of neonatology, is there anything you want to add to that or is that in your opinion a sufficient definition?

EVANS: No, that's fine.

JOHNSON: Thank you very much.

Over the page, second entry on page 2, "Apnoea". You made reference to this before lunch. A simple definition here:

"Suspension of breathing or absence of respiration."

In the context of neonatology, is there anything you want to expand upon there?

EVANS: No, that's fine.

JOHNSON: Thank you very much.

Blood gases. If we could please go to page 3 or, more precisely, "Blood gas tests":

"Obtaining a sample of blood from an artery, a capillary or a vein or a heel prick."

What's a capillary, Dr Evans?

EVANS: A capillary is a small blood vessel and they're the tiniest blood vessels that, if you like, connect the vein and the artery. So they're the smallest blood vessels around.

JOHNSON: Thank you. So the sample having been taken from one of those sources, we're told, is then inserted into a blood gas machine --

EVANS: Yes.

JOHNSON: -- to measure blood properties, including oxygen concentration, carbon dioxide content, the acid content of the blood, sodium, haemoglobin and a lactate level. This test is a bedside test taken on a gas machine. Can you expand upon that process for us?

EVANS: Yes, the neonatal unit will have a machine, which is the size of a monitor, size of a TV, you know, you insert the -- the doctor or the nurse takes the sample, squirts it into the machine, and the reading is carried out automatically. And you'll get all these results here.

JOHNSON: Thank you. We'll look at --

MR JUSTICE GOSS: Sorry to interrupt you. Just for the avoidance of doubt, everything that Dr Evans is saying is apposite to 2015/2016; is that right?

EVANS: I don't know. I would think so. I think so. Yes, oh yes. I think all units had specific blood gas machines long before then, yes.

MR DRIVER: Over the page to page 4, two related terms: cannula and cannulate. A cannula being a soft sterile plastic tube inserted into a blood vessel and cannulate being the process of

the insertion of that. There we have a description of how it's done and what it's done for. But before we consider any further, we can play a video to demonstrate the process to the jury, please, Mr Murphy.

(Video played to the court)

Having watched that and looked at the definition on page 4, anything you'd like to add, Dr Evans?

EVANS: No, that's perfectly clear, thank you.

JOHNSON: Further down page 4, we have a cardiac arrest:

"The absence of a central arterial pulse, no breathing, no sign of circulation, or the presence of a central pulse less than 60 beats per minute in a child who does not respond, does not breathe and with poor perfusion."

Could you expand upon that, Dr Evans?

EVANS: I think that describes it very nicely: the heart has stopped functioning properly, yes.

JOHNSON: Thank you.

Then if we turn the page, you'll see the response to such a presentation: cardiopulmonary resuscitation. CPR.

EVANS: Yes.

JOHNSON: "Medical procedure involving repeated cycles of compression of the chest and artificial respiration performed to maintain blood circulation/oxygenation in a person who has suffered cardiac arrest or extreme bradycardia."

I won't do it again, but remind the jury what extreme bradycardia is.

EVANS: A very, very low heart rate, under 60 -- and maybe even lower than that.

JOHNSON: In the opening presented to the jury over the last few days there was repeated reference to Neopuffing, more commonly referred to, or perhaps inelegantly, as bagging of patients. In a nutshell, can you convey to the jury what that is?

EVANS: Yes. Is there a video on this?

JOHNSON: Yes.

EVANS: I think if we show the video first, it'll be easier to explain it afterwards.

JOHNSON: Absolutely. Mr Murphy, if you would, please.

(Video played to the court)

There is a second video that is a companion to the one we've just watched, RC522, which deals with what the medics call Neopuff consumables. It's only short, if we watch this.

(Video played to the court)

Dr Evans, is there anything you want to add to that?

EVANS: No, that's very clear, actually. That's fine.

JOHNSON: Thank you. So we were informed there that the Neopuff can be used in response to the collapse of a baby. In this context what do medics mean by a collapse?

EVANS: Any baby who stops breathing, essentially. If a baby stops breathing, ie has an apnoea episode, then you need to get that baby breathing. So this Neopuff system will be available in the resuscitation room, in the labour ward, just in case babies fail to breathe after birth, following birth, and it's also available in any neonatal unit so that if a baby's unwell and deteriorates, ie stops breathing, this is what you do to get the baby breathing again.

JOHNSON: Thank you. So we looked at this in the context of CPR, of resuscitation, and obviously this is respiratory support in that context. What else is involved in CPR in the neonatal context?

EVANS: CPR is cardiopulmonary resuscitation. The pulmonary is the lung bit, which is what we've just seen, and the cardio bit is cardiac massage. There are ways of delivering cardiac massage to a baby whose heart isn't working anymore. It basically involves chest compressions. So you can do chest compressions on a baby by getting two fingers and pressing on the chest. That's one mechanism. The other mechanism is you put both hands around the chest and then press the sternum, the breastbone, with your thumbs. So both options are used routinely.

JOHNSON: Thank you. Cardiac arrest. What in the neonatal context would you interpret that as a sign of?

EVANS: Well, a baby -- it's a terminal marker. You know, if you cannot correct the cardiac arrest, the baby will die within a matter of minutes.

JOHNSON: Unless your Lordship has any questions on that topic, I'm going to move to a different subject entirely.

Let's go to feeding. If we can look at page 15, please, of the glossary. Before we consider feeding we'll consider the nasogastric tube, the NGT, as it is sometimes referred to. Here we have a brief definition:

"A narrow bore tube passed into the stomach via the nose, used for short or medium-term nutritional support, feeding."

Is that right?

EVANS: Yes, yes.

JOHNSON: And also the administration of drugs?

EVANS: Yes.

JOHNSON: And in certain circumstances it may be used to aspirate the contents of the drugs (sic) and in this context, can you remind the jury what to aspirate means?

EVANS: Right. In all contexts it's how you aspirate the stomach and aspirate the stomach simply means removing any fluid or milk or anything that is in the stomach. You do it by connecting a syringe to the top end of the nasogastric tube and just sucking up on the syringe to see if any fluid or milk comes out. That's it.

JOHNSON: Thank you. Before we look at a demonstration video, we heard in the opening how it is protocol, can you confirm this, for a nurse to routinely seek to aspirate a neonate in these circumstances prior to each feed?

EVANS: Yes. Any baby who needs feeds via NG tube, and prior to the feed you would connect the syringe to the top end of the tube and aspirate the stomach, in other words empty the stomach. And the reason for doing this is that if there is a lot of residual milk in the stomach, then that baby is not well and is not -- and its digestive system is not working. So therefore, you have to have an empty stomach prior to the next feed.

JOHNSON: Thank you. I wonder whether we could look at the NGT demonstration video, please.

(Video played to the court)

EVANS: Can we go back a few seconds just to make a point that may come in handy some time in the next few weeks? Just to make

this point. If you look at the syringe, it's purple in colour and if you look at the top end of the nasogastric tube, that is also purple in colour. The reason for pointing this out is this: this kind of syringe can only be used in relation to oral or nasogastric feeds. You cannot connect a syringe of this type to an intravenous system and the importance of that is that you cannot inject milk into a vein by accident. So therefore, this colour coding is very important and has been around for some time.

JOHNSON: When you say it cannot be used for that purpose, is that because of the shape?

EVANS: Yes, the two connections are incompatible.

JOHNSON: Thank you.

(Video playing continued)

EVANS: This is known as a gravity feed and the important thing is, you allow the milk to trickle through at its own rate, and that's quite important. You don't use the syringe to sort of force the milk through, you let it take its time.

JOHNSON: Thank you.

(Video playing continued)

Pausing there, Dr Evans, we saw the manual aspiration technique and then we've just been referred to free drainage. Can you explain to the jury the process by which free drainage achieves the required end?

EVANS: Free drainage is very simple: you leave the nasogastric tube in, one end is in the stomach, and the other end is open and it's not covered, in other words it's an open end. And therefore if you get any air in the stomach for any reason, it can escape through the NG tube and that's it, yes.

JOHNSON: Thank you. I think we'd reached the end of the video, but let's press play in case there's something I've forgotten. Thank you.

We've just dealt with the tube being used to take materials out of the baby. It's also used as part of the feeding process. Can we just think for a moment or two about what babies are fed with in the context of the unit. With reference to milk, we've also heard reference to EBM.

EVANS: Right. EBM is expressed breast milk. Therefore this is milk expressed by the mother to give to the baby. There's

another term, DEBM, which is donor-expressed breast milk, which is milk from other mothers that is collected in what's often called a milk bank.

So in terms of which babies are fed by the nasogastric tube, most commonly babies who are premature. Premature babies have not acquired an effective sucking reflex, so they can't suck on a teat or on a nipple, and this does not develop until, you know, term, until around the time they should be born. Therefore a baby who is, for instance, born 10 weeks early may require nasogastric feeds for many, many weeks.

The other type of baby that would require -- may require nasogastric feed is a baby who's sustained neurological damage, brain damage, affecting its sucking reflex and also its swallowing reflex, because if you can't suck and you can't swallow, you will choke if anybody gives you oral feeds. But the most common reason why babies are fed nasogastric feeds is to do with prematurity.

JOHNSON: Thank you. You have dealt with breast milk, either from the baby's mother or from a donor. What about in circumstances where there isn't either any available or the baby is given some other feed?

EVANS: The other milk is formula feed. There are specialist milks designed for small babies and they tend to be higher in calories than the milk you buy in the chemist.

So therefore they tend to have a calorie content on the whole of 80 calories per 100ml whereas ordinary milk is about 65 calories per 100ml. It's a higher calorie milk and there are a number of specialist milks available for prem babies.

JOHNSON: And the jury heard earlier this week repeated reference to what Mr Johnson referred to as Babiven; is that such a formula?

EVANS: Now, there are loads of makes. I'm not familiar -- there are a load of commercial makes. I'm not familiar with Babiven, but...

JOHNSON: Thank you. What about lipids? We heard about babies being given lipids. What are they?

EVANS: Lipid is fat, it's the medical term for fat. Naturally milk contains fat, contains lipid. But in this context, when one is talking about lipid, you're talking about intravenous lipid, which one requires in babies who are unable to take any nutrition orally. So for whatever reason, they cannot absorb milk, they cannot take milk or any nutrition orally and

therefore you have to feed them intravenously, what we call TPN, total parenteral nutrition.

There are two bits usually to the TPN. The main one is a collection or cocktail of fluids that contains electrolytes, salt, and amino acids and a few additives, vitamins. So that is given intravenously, usually through a long line via a syringe pump. We can talk about the syringe pump another time.

Lipid has a far higher calorie content than the other solution and therefore that is usually given in a separate system intravenously to up the -- to increase the calorific requirement of a baby to as normal a value as one can achieve.

JOHNSON: Thank you. I'm not going to read it out, but members of the jury, if you go back a page and look at page 14 you'll see a definition of lipids at the top of page 14 and examples of the content are set out there.

Are you content with the accuracy of that definition?

EVANS: Yes, that's fine.

JOHNSON: Thank you very much.

Coming back to page 15 of the glossary, towards the bottom of the page there's a reference to necrotising enterocolitis, again something that was referred to repeatedly during the opening. Abbreviated for good reasons to NEC. In the business you call it "neck" do you?

EVANS: We do, NEC, yes.

JOHNSON: Good. It is defined here as:

"A serious gastrointestinal disorder where a portion of the bowel becomes inflamed and that portion of the bowel may die."

EVANS: Yes.

JOHNSON: Could you --

EVANS: It's a condition that affects mainly the small intestine. In other words, that's the part of the intestine immediately following the stomach. The small intestine is pretty long. There is still contention as to what causes NEC, but it's probably the result of a combination of poor perfusion, poor blood supply, to that part of the intestine. It maybe associated with infection. So you know, there are two things, but sometimes you can get it without being sure why.

The sicker the baby, the greater the risk of NEC. That's the important thing. The early symptoms tend to be those of a bit of abdominal distension, maybe babies being irritable. More seriously you'll get blood in the poo, in the stool, and you also can get bile from the nasogastric tube.

JOHNSON: Bile aspirates?

EVANS: Bile aspirates. So early diagnosis is crucial because the earlier the diagnosis and the earlier you can get treatment, the more likely you are to arrest the development of the condition and then the baby will settle without the need for surgery. The treatment on the whole consists of a combination of antibiotics, including metronidazole, which is in this list, a combination of antibiotics and stopping oral feeds.

So you stop oral feeds, give antibiotics, maintain fluid intravenously, and hope that everything settles.

JOHNSON: Thank you. We'll stay with this definition a little longer because we're going to hear a lot of reference to NEC, we know, in the evidence. Alongside the hole punch we see a list of potential symptoms, some of which you've already referred to. If we go through them:

"Feed intolerance, abdominal distension, abdominal pain, blood in the stool [you've told us about], vomiting bile aspirates."

It speaks for itself. It says "symptoms may include": do all of those always feature or do some of them feature sometimes and not others?

EVANS: Yes. The more serious the condition, the greater the number of symptoms. So this is why doctors usually, if they suspect NEC, you'll get in with treatment quickly. So stop feeds, antibiotics. Even if you're not absolutely sure of the diagnosis, because it is better to treat early than to risk it. There's another entry there, by the way, with mural bowel gas. In serious cases, an X-ray of the abdomen will show abnormalities where you can see air within the intestine itself.

JOHNSON: As a symptom of NEC?

EVANS: As a symptom of NEC. That's a significant, serious sign, and the most serious sign of all is if you get perforation, in other words a rupture of the intestine, which causes peritonitis. And the mortality rate in that situation is pretty high because some of these babies are so ill they are not well enough to tolerate surgery. So if it's a perforation, they have to get to a surgical unit, and the surgeons will do their best to remove the damaged bowel and hope that the baby will recover.

JOHNSON: And hence in simple language, it's asserted at the end of this definition that it is a serious gastrointestinal emergency?

EVANS: It is.

JOHNSON: Hence, as you said to us, if there's any symptoms of it, doctors assume the worst and treat for it?

EVANS: And treat promptly.

JOHNSON: Moving topics, please. We also heard a lot of references to doctors observing rashes or skin discolouration, changes in the appearance of skin. Without going to the specifics of any of the babies that we shall concentrate on, if we just in general terms deal with skin discolouration. At page 19 of the glossary, members of the jury, there is a general definition of a rash. In the simplest terms:

"Any discolouration on the skin that is of a new onset."

EVANS: Yes.

JOHNSON: And there within our definition is a whole host of varieties of rashes, "Descriptions include", and there they are listed.

EVANS: Mm.

JOHNSON: We won't go into them one by one. Then in the final paragraph, there's reference to a purpuric rash, purpuric in this context meaning purple. What can you tell us about that?

EVANS: Right. The first loads of rashes, they reflect discolouration of the skin for whatever cause. And on the whole, if you press on the skin, the discolouration fades. The difference with a purpuric rash is that it's caused by the leakage of blood, blood spots, underneath the skin. So therefore if you press on the skin, the rash does not fade and it is usually a pretty worrying sign.

JOHNSON: Yes.

EVANS: There are a number of causes. It's associated with sepsis or septicaemia and it's also associated with problems of blood clotting, coagulation problems. Babies with a low platelet count develop purpura and of course the two conditions often go together. Babies who are severely ill with sepsis will often frequently have coagulation problems, in other words the blood

is slow to clot. So a purpuric rash is a serious clinical problem.

JOHNSON: Thank you. We'll return to rashes and your study of any learning in this regard later. We'll move on.

At the bottom of the page, we've got "respiratory arrest", which of course we've dealt with in part already. We'll look at a video now, please, RC1221, intubation. We could have looked at it with CPR, but we'll play it now.

(Video played to the court)

Pausing there, on the animation we've just seen the process by which the clinician seeks to render the airway visible. What is it anatomically that is taking place there?

EVANS: Right. It's easier to do this than to explain it. You pass the laryngoscope with your left hand, you push it forward to expose the vocal cords -- the vocal cords are at the top of the trachea. The trachea is at the front of the oesophagus. If you get it wrong the tube, instead of going into the trachea, will go into the oesophagus, you know, the back of the throat. Therefore, you get the laryngoscope, put it forward a little bit, and then that exposes the vocal cords. You then get the endotracheal tube, which you link to an introducer to stiffen it because endotracheal tubes are quite supple, soft. And the introducer is on the inside of the endotracheal tube and you pass the tube, the endotracheal tube through the vocal cords into the trachea and you make sure they go beyond the vocal cords but not too far, because if they go too far they go down into one lung, which is not a good idea.

Therefore once you know that the endotracheal tube is through the cords, you fix the tube, remove the laryngoscope, remove the introducer, and then you do the fixings as described there.

JOHNSON: Thank you. So this is a necessary step in the provision of ventilatory support?

EVANS: Yes.

JOHNSON: So moving on to types of support that the jury have heard reference to. If we go to page 6 of the glossary, you'll see a reference to CPAP.

EVANS: Yes.

JOHNSON: The jury have also heard of BiPAP.

EVANS: Yes.

JOHNSON: And also full ventilation.

EVANS: Yes.

JOHNSON: Could you, in a sweep, describe those three for the jury, please?

EVANS: CPAP is the least invasive form of giving babies respiratory support. So you fix the system over the airways and that allows the mix of oxygen and air that the baby requires at a higher pressure than atmospheric pressure. And we heard earlier about pressures of 5, 5 centimetres of water. Therefore, a baby on CPAP would be placed on a pressure of about 5 or 6.

The purpose of this is that when the baby breathes out, the lungs don't collapse, because the baby's lungs at all times are under a slightly increased pressure to keep it up. Okay?

BiPAP is the same but the pressure regulates, so it regulates from, say, between 12 and 6, so it's a more sophisticated method.

Then what's been described as full ventilation -- clinical notes will talk about IPPV, intermittent positive pressure ventilation, which you can only deliver in a baby where an endotracheal tube has been passed. This requires a very sophisticated ventilator, breathing machine, which you connect to the baby. You set the relevant pressures, so you need a higher pressure to inflate the lung, you require a lower pressure to stop the lung collapsing. You need a rate -- in other words a rate of 30 per minute or whatever and you set all of that up.

Then you ensure that the baby's chest is moving up and down and you can hear air or air -- well, gas going into the lungs. And hopefully, the baby will improve. The first sign -- and the signs of improvement would be that the oxygen saturation will return, become normal, over 90, and the heart rate will settle, hopefully, and the respiratory rate is then controlled by the ventilator setting.

If the baby fights the ventilator, as we say, in other words breathes against the ventilator, then that baby will receive sedation, with a drug such as morphine, to settle him down. That that allows the baby to benefit most from the ventilator.

JOHNSON: What's the problem with the baby breathing against the ventilator or fighting the process?

EVANS: Right, good question. If the baby's fighting the ventilator, you wonder whether he requires ventilation in the first place. That's the first point. But if it means that -- it means that the ventilator is not coordinating with a baby's normal or baby's effort to breathe and therefore the baby does not benefit from the additional support that the baby is getting. Because one thing we should emphasise here: most of the time, babies on ventilators are not paralysed, they're not paralysed. A patient having an operation in a theatre receives pancuronium, a paralysing drug, therefore the anaesthetist and the ventilator takes control completely.

We don't do this in babies. They're small, so usually, one can manage, can get away without paralysing the baby, simply by giving sedation.

JOHNSON: Could you further define the distinction between sedation and paralysing the baby in this context?

EVANS: Yes. Paralysing means the baby wouldn't be able to move at all, in other words all the muscles stop moving, therefore there is no movement whatsoever. Sedation means the baby is quieter, more relaxed, morphine has an effect, and so it's like having a baby asleep.

JOHNSON: Thank you. There is a short video that demonstrates CPAP. We may have seen a little bit of it already. It's 3.5 minutes long.

(Video played to the court)

EVANS: Can we stop there?

JOHNSON: Of course.

EVANS: Just to explain, because there's no noise on this, there's no sound --

MR JUSTICE GOSS: No commentary.

EVANS: No commentary, thank you, my Lord.

This is a very nice system, actually. I know it's a mannequin. It's a very nice system because what you see is to my right, that's the oronasal area.

MR DRIVER: You're pointing to the mouth and nose there?

EVANS: Where the pink colour is. So that creates the seal, the seal between the bits of plastic and the baby's nose and mouth. And then the item to the -- and then the beige colour to the

left, that exists to fix the system to stop the baby pulling it out. So it's a very nice system and I suspect that it's all held together by Velcro, so you know, it's a -- there's more than one way of delivering CPAP, but this is as good as any. Right.

JOHNSON: Thank you.

(Video playing continued)

Pause on that slide, please. Issues you've already touched upon, distension of the stomach, CPAP belly, and the language of this slide:

"To try and avoid this, a nasogastric or orogastric tube is inserted into the stomach to help ventilate excess gases."

Is that the free drainage process that you were telling us about before?

EVANS: Yes. CPAP is an incredibly safe procedure because it's relatively non-invasive, you are not passing anything into the lungs. And this thing about CPAP belly, on the whole you will get more air into the stomach in a baby with CPAP, but because you've got free drainage and because the pressures one uses in CPAP are relatively low, in my experience it does not -- it's pretty unusual for it to compromise a baby. It doesn't interfere with its breathing -- well, it improves its breathing. That's because we're talking low pressures and because babies have got this nasogastric tube in the stomach, which is open to air. So if there is more air in the stomach then it'll escape through the NG tube.

JOHNSON: Thank you. Could we continue with the -- thank you.

(Video playing continued)

The commentary attached to that. Do you want to expand on that at all?

EVANS: Not really. Babies on CPAP who do not move on to require more invasive ventilatory support tend to recover well, they are stable. Babies who develop NEC are ill babies. You're always on the lookout for NEC, as we discussed earlier, but on the whole you're pretty safe with CPAP. If a baby stabilises on CPAP, that's a pretty stable, well baby.

JOHNSON: Thank you. Could we continue with the remainder of this?

(Video playing continued)

Thank you, Dr Evans. They are the only questions of general application that I wish to ask you this afternoon. Thank you.

MR MYERS: My Lord, I have just about 20 minutes of questions. There are a number of topics that have been dealt with. The general medical ones are ones that I'll deal with later on when we deal with them in situ with the cases we're looking at. There are some general topics. I wonder if I could just take 10 minutes first to confirm one or two matters and then I can move on to that, but it won't take me more than 20 or 25 minutes once I commence, if that isn't going to delay matters too much.

MR JUSTICE GOSS: No, that's fine, we'll have a 10-minute break for you to confirm matters you want to confirm and then we'll come back and we should be able to complete this afternoon.

MR MYERS: I will.

MR JUSTICE GOSS: All right. Thank you very much.

(In the absence of the jury)

Thank you, 10 minutes.

(3.26 pm)

(A short break)

(3.35 pm)

MR JUSTICE GOSS: Yes, thank you.

(In the presence of the jury)

Yes, Mr Myers.

Cross-examination by MR MYERS

MR MYERS: Thank you.

Dr Evans, as you heard me say, I'm not going to go over all the medical topics you have dealt with, just some general topics to close today.

The first thing I would like to ask you about is some general points about the videos -- I'm not going to go through them. There are other videos to come that we are going to look at, aren't there? Those aren't the entirety this afternoon?

EVANS: I understand that, yes.

MYERS: Okay. Just as a general point to set the scene, it would be a very different thing doing some of the procedures that we've seen on the videos at, for example, 3 o'clock in the morning in a neonatal unit from doing it in a lecture setting with the type of mannequin that we saw then, would you agree?

EVANS: Well, the mannequin one is artificial, but the procedure for intubating a baby is very standard wherever you are.

MYERS: I mean more the surrounding atmosphere would be quite different from the calm of a training room like that.

EVANS: The settings are geared towards resuscitating babies. So you've got all the equipment, you've got staff who know what they're doing, you've got good light. Yes, you know. So you've got all the facilities that you require. They're there at hand. It'd be different in an ambulance or whatever, but if it's in a neonatal unit or the resuscitation area of a delivery room, anywhere in the country the setting would be pretty much the same and everything will be checked on a regular basis.

MYERS: Just like we saw in the videos there?

EVANS: Well, there's a limit to what you can learn from videos. Nothing wrong with those videos. Some of those videos are very good, but they're animations. Fine, there's nothing wrong with animations, but they are animations, so you're not comparing like with like. The important thing is that if you're involved in the resuscitation of a baby in a specialist unit, a neonatal unit is a specialist unit, then you have everything you need to hand.

MYERS: Will there be, as a rule, more surrounding noise in a specialist unit than the quietness of those rooms?

EVANS: Not particularly, no.

MYERS: Alarms going off, things like that?

EVANS: It depends.

MYERS: Will there be other tasks going on around sometimes with other practitioners?

EVANS: No, no. What you have is if you have a baby that requires resuscitation, by definition that's the sickest baby in the unit and therefore you're going to have you're most experienced people dealing with it, nurses and doctors. Alarms going off all the time is neither here nor there. Alarms don't go off all the time by the way. So therefore you've got your set-up right and from my experience, before junior doctors and junior nurses get

involved with the resuscitation of a baby, they've been through a good teaching programme to ensure that they know what they're doing.

MYERS: To make it clear, I'm not just talking about resuscitation, Dr Evans, I mean generally when it comes to fitting a mask or headwear for CPAP, putting in a cannula, aspirating.

EVANS: There's a way --

MYERS: Please may I finish the question. Would the atmosphere in a neonatal unit, a busy functioning neonatal unit, not be rather different from what we see on those videos?

EVANS: Well, of course it's different to a video, yes.

MYERS: Right. And in a unit like that, let's say somebody is fitting a cannula around them, then there would be other tasks going on, mightn't there?

EVANS: Whoever is fitting the cannula would have support, so it's a doctor fitting a cannula then there'd be a nurse in support and that is all they would be doing. They wouldn't be doing other things.

MYERS: Are the mannequins that we saw on those videos the same size as a preterm baby?

EVANS: Well, preterm babies vary significantly in size. The smallest baby I looked after was 600 grams. The large preterm babies are over 2 kilos. So they vary significantly in size according to their gestational age.

MYERS: When we are talking about babies in this case of the size of 800 grams or a kilo, would that be smaller than the mannequin we're looking at in those pictures?

EVANS: Yes, I think so.

MYERS: And that would make the tasks more intricate than they would be on a mannequin of that size?

EVANS: Yes.

MYERS: With regard to intubation, when we were watching the intubation video you said there are a number of things the practitioner should record. You included the number of attempts; yes?

EVANS: That was said on the video, that's correct, yes.

MYERS: And whether there is a good view of the cords?

EVANS: Yes.

MYERS: Yes. Why might there not be a good view of the cords?

EVANS: Because if there's swelling in the throat, if there are secretions in the throat which could be blood or mucus, yes -- so if the laryngoscope is in the wrong size or the wrong place, so there are -- if the intubator is insufficiently experienced -- let's hope that's unlikely. But the commonest problem is poor view of the throat because of swelling around the surrounding area. That's probably the commonest technical problem.

MYERS: And by "surrounding area" you mean around the cords?

EVANS: Around the cords, yes.

MYERS: Is the epiglottis in that area?

EVANS: The epiglottis is the back of the throat, yes.

MYERS: Moving to something different. Neonatology, Dr Evans, is a particular specialty within medicine and nursing, isn't it?

EVANS: It is.

MYERS: And you've explained to us that's focusing upon babies up to about 4 weeks in age?

EVANS: That is the definition of neonatology, yes.

MYERS: And that means that in neonatology, you are dealing with specifics for that particular group of patients, particular issues and the ways they present?

EVANS: Yes.

MYERS: And just to explain, I know you can assist, neonates have, for example, specific anatomical or physiological features, don't they?

EVANS: Yes.

MYERS: And obviously they tend to be smaller and less heavy, lower weight, than other patient groups?

EVANS: Yes.

MYERS: And there will be particular items of equipment that might apply to neonates that might not apply with other patient groups?

EVANS: That's correct.

MYERS: And when it comes to interpreting the readings, for instance, looking at blood gas and the readings we get from that, that may be specific to neonates, mightn't it?

EVANS: It depends, yes.

MYERS: Yes. And things like the vital signs, breathing or heart rate and things like that, as we've seen, are particular to neonates and dosing of drugs and what have you?

EVANS: Yes.

MYERS: And indeed, feeding them is different?

EVANS: Correct.

MYERS: A doctor who specialises, I'm talking about doctors at the moment in this area, is called a neonatologist?

EVANS: Yes.

MYERS: Now, when a doctor specialises in a particular area, she or he will, one anticipates, have training --

EVANS: Yes.

MYERS: -- that fits them for that area. They will work in an environment where they learn the skills and build them up in that area; is that correct?

EVANS: Yes.

MYERS: And they also gain experience and knowledge from doing the work itself --

EVANS: Yes.

MYERS: -- in a clinical setting?

EVANS: Yes.

MYERS: For those who aren't doctors, which certainly is me, to explain what you mean by the experience, clinical experience means the kind of daily exposure to patients and issues with patients that give the doctor a working knowledge of that area?

EVANS: Yes.

MYERS: It also covers, doesn't it, things like discussions with colleagues day to day?

EVANS: Yes.

MYERS: A lot is learnt from the people alongside whom you work?

EVANS: Mm-hm.

MYERS: And then also if you are doing the work, you will see variations in the different conditions and patients, won't you --

EVANS: Yes.

MYERS: -- over the years?

EVANS: Yes.

MYERS: And sometimes the differences in conditions and how you approach them may be quite subtle, would you agree?

EVANS: Well, you take every item on its own merit, really. It's too general a point to be specific.

MYERS: The more experience, the more exposure a doctor has had to a particular specialty, the greater his or her knowledge?

EVANS: Hopefully, yes.

MYERS: And ability to interpret and deal with what they encounter?

EVANS: Yes.

MYERS: The case we're dealing with and going to be dealing with for some months here, so far as we expect, revolves primarily around neonatology, doesn't it? You are not a consultant, this isn't to be rude, we'll go through your experience and specialty in a moment, but you are not a consultant neonatologist, are you.

EVANS: I'm a consultant paediatrician.

MYERS: That's correct. You're a consultant paediatrician and you have had significant experience of neonatology?

EVANS: Over 30 years, yes.

MYERS: And we'll come and have a look at that in a moment but I make it plain my questions are not intended to be discourteous or in any way minimise the extent of your knowledge, I make that quite plain, this isn't that, it's just to look at the extent of that, I hope that's clear, as you'll see.

The bulk of your experience in neonatology is via the unit that you'd set up in Swansea?

EVANS: Correct.

MYERS: And that was during the 1980s into the 1990s?

EVANS: And the 2000s.

MYERS: And in 2004 to 2008?

EVANS: No, no, from 1980 until 2007/2008.

MYERS: It's the 1980s through to the 1990s when you were most heavily involved in that; is that correct?

EVANS: Yes.

MYERS: And the work you did as a neonatologist was done alongside other paediatric duties?

EVANS: Yes.

MYERS: And so in that sense, you weren't someone who was working exclusively in neonatology?

EVANS: That is correct.

MYERS: We have the benefit of your CV, Dr Evans. Just to confirm with you, the way it's described, just over the period 1980 to 2009, and you've got a entry -- it's under "Clinical experience and interests":

"General paediatrics. Singleton Hospital Child Health Department in Swansea was responsible for the care of over 6,000 acute admissions per year and a similar number of outpatient referrals. The department has lead consultants in all the mainstream paediatric sub-sections. My clinical duties included regular acute admissions, service weeks and out-of-hours on-call responsibilities. Until July 2009 I had an extensive outpatient practice throughout my consultant career. Many of my patients had significant neurodisability or other developmental problems and were seen by me throughout their childhood."

You also have an entry for diabetes and endocrinology, that might feature later, I'm not going to that right now. And it says this under neonatology:

"Development of services for the newborn and the establishment of the Neonatal Intensive Care Centre for South-west Wales, lead consultant in neonatology 1980 to 1994, and shared neonatal duties with three consultant paediatricians until 2007."

And that unit provided facilities for a population of over 800,000 people. So to make it plain, I'm not disputing you have extensive experience, but it's not solely experience in neonatology; that's correct, isn't it?

EVANS: That's correct, yes.

MYERS: And your duties, even during that period, are shared with your duties as a consultant paediatrician?

EVANS: Yes.

MYERS: And as you've said, a paediatrician will deal with the span of patients from babies through to the age of 16?

EVANS: Correct.

MYERS: Would you agree that you will not therefore have the day-to-day exposure of someone who has been, for instance, a consultant neonatologist and solely a consultant neonatologist over a period of decades?

EVANS: I don't really agree. I'll tell you why I don't agree. We were where we were in the 1980s -- I'm not going to go on about this. Neonatology was a new discipline during the 1980s and, as I've said earlier, my generation were inspired to improve the services. We've heard how large a population we covered. You've also heard how few in number were the consultants compared to where we are these days everywhere.

Therefore, because there were so few consultants around, you had greater contact with -- we had contact with a greater number of babies than if you were, for instance, one of, I don't know, 10 neonatologists maybe. So therefore you dealt with all sorts of problems.

Now, the other issue, which is quite important, from my -- as far as my neonatology development is this. My senior consultant, the other -- there were three of them during the 1980s and 1990s, they deferred to my interest in neonatology in terms of developing services. Right? They deferred to my interest in terms of appointing staff and training staff.

So therefore, my input into neonatology in terms of the babies I dealt with was huge. It did not -- and the other point that needs to be said, our on-call system was one in four. So in other words, I was on call every fourth weekend and every fourth weekday. And on top of that, we were, in the 1980s and 1990s, not only looking after neonates in Swansea, I was also looking after neonates in Neath. And the set up in Neath at that time was we only had a junior doctor, in other words the most junior GP trainee on the whole, and therefore when there were issues, you did not call a middle grade registrar, you called -- at weekends and so on, you called a consultant. And I can recall a number of occasions when I was called in because I was the only one really who could deal with this.

So therefore, my hands-on experience of developing neonatal services from a clinical perspective, I am more than happy to say that it was as extensive as anybody's.

I'm sorry, and on top of that I made sure that I attended neonatal courses. I remember going to the founding -- the initial meeting that Dr Peter Dunn, the Bristol neonatologist, one of my heroes, I remember going to a number of those meetings -- in fact the first one was when I was in Alder Hey, from memory, before I went to Swansea. So I carried on doing these neonatal course attendances, I visited Bristol on several occasions to top up my thoughts, et cetera, top up my knowledge.

So therefore, it was full-on, let's make sure that we've got the best system going, best service going. Yes? So you can attach labels as long as you want, but in terms of my neonatology hands-on practice I am very, very comfortable with the expertise that I developed.

The other point in terms of hands-on expertise is this: I reckon I could intubate a baby today. It's one of these things, like riding a bicycle, that you don't forget how to do. Therefore I did quite a lot of hands-on stuff in terms of connecting ventilators, putting IV lines in, long lines in, umbilical catheters, all that sort of stuff, which I suspect in a bigger unit would be carried out by experienced junior doctors.

So therefore I am very happy, Mr Myers, with my neonatology experience, expertise and background.

MYERS: You described to us that the field of neonatology evolved during your clinical career.

EVANS: It did, it has.

MYERS: That follows, doesn't it, that therefore, if we consider the state of neonatology at the time we're looking at in this case, for a large part of your career your experience was not in that setting and of that type, was it?

EVANS: From what I've seen from these cases and from 2015, I think the big changes occurred in the 1990s and the early part of this century. We've discussed in detail, correctly, things like monitoring, blood gas machines in units, that sort of thing. That's been around for over 20 years.

MYERS: You told us you didn't use that Philips IntelliVue MP30 monitor, did you?

EVANS: No.

MYERS: You didn't use that?

EVANS: No. I haven't seen it before today --

MYERS: Right.

EVANS: -- before yesterday.

MYERS: So notwithstanding what you've said, that isn't something you used.

EVANS: No, no, there are different machines. That machine had a heart rate, an oxygen saturation and a respiratory rate monitor. We used, from memory, Hewlett Packard machines. It doesn't matter which make they are, but those monitors were in use in Swansea long -- you know, well, let's be blunt about it, I introduced them. I was the one who brought them in.

MYERS: Did you work throughout your career in neonatology with all the types of equipment that we are going to be looking at, specifically that equipment that we're going to look at in this case?

EVANS: Every one expect end-tidal CO₂s. That's the little thing that you put to make sure that the CO₂ changes colour. So that's a minor technical extension, a very important one, and they came in -- I can't remember when they came in, but I think they came in about 10 years ago. But every other principle in terms of ventilatory support that was in use in Chester in 2015, I was familiar with all of them. I am familiar with all of them I should say.

MYERS: Familiar in the day-to-day use of them?

EVANS: Yes.

MYERS: Did you have a neonatal surgical unit attached to your hospital in Swansea.

EVANS: No, they went to Cardiff.

MYERS: So in terms of working alongside neonatal surgeons and discussing matters with them day in, day out, you would not have done that?

EVANS: No, we only discussed things with surgeons when we thought we needed a surgical opinion. The one thing we did do for a number of years is we held joint meetings between the paediatric surgeons in Cardiff and the paediatricians in Swansea, yes.

MYERS: You retired from clinical practice in 2009, didn't you?

EVANS: I did from full-time clinical practice, yes.

MYERS: And you were not working in neonatology over the period that we're dealing with in this case, 2015 to 2016, were you?

EVANS: That is correct.

MYERS: Since retiring from clinical practice, a principal interest of yours has been in clinical negligence as an expert?

EVANS: Yes.

MYERS: Is that correct? And also, particularly child protection?

EVANS: Child safeguarding more than clinical negligence, really, yes.

MYERS: Child safeguarding?

EVANS: Safeguarding, yes.

MYERS: This case has involved you with a great deal of work in reviewing neonatology issues, hasn't it?

EVANS: It has.

MYERS: The bulk of your work in the years that you've been an expert has not been in neonatology?

EVANS: A lot of it has, actually. A lot of it has. A lot of my -- for instance, my last clinical negligence case, which is fairly recent, is fairly recent, so yeah, so... If you get involved with, you know, the clinical negligence side, most of

those -- most of the children I've dealt with were babies. So I've made absolutely sure that I've kept fully up to speed with neonatal practice and small baby practice. So quite happy with that.

MYERS: Would you agree that the optimum position for someone dealing with expert evidence is to be in clinical practice at the time of making his or her report?

EVANS: Not necessarily. I think what's important is your clinical experience. I think if you look at doctors generally, you know, we have careers of 40 years or more and those careers evolve. You don't do the same job for 40 years. So therefore, during my career, as we have heard, I was the head of department and the clinical director, I was involved with setting up the baby unit, doing other things. So you develop your professionalism over -- throughout the whole of your career, which is fine. You do not spend the whole of your 40 years attached to an exclusive clinical scenario, you do not.

MYERS: Medicine and medical practice changes constantly, doesn't it?

EVANS: It does.

MYERS: You described how it evolved in your career.

EVANS: Yes.

MYERS: It's important to be in clinical practice, so far as being an expert is concerned, because it enables you to find out more and develop your knowledge in the actual practice of your discipline, doesn't it?

EVANS: Absolutely.

MYERS: And therefore if you're not in practice, you're at a disadvantage, aren't you?

EVANS: I am not at a disadvantage because one's experience is over such a long time and so extensive in the work that I did, you don't simply forget all of that the day you finish. In fact, you never forget it.

MYERS: I'm not suggesting you forget it, Dr Evans, but if you haven't been in practice at the time there is a new approach to things or people are dealing with it in a different way, you won't have experience of that, will you?

EVANS: If you care to tell me of any new approach with which I'm not familiar, I'd be happy to explore that. In terms of all the

cases I have dealt with and the issues that occurred and the clinical issues that they presented with, babies do not change in terms of the illnesses they get over a period of 10 years. Babies have the same problems now that they had 100 years ago or more; it's simply that the way we deal with these problems changes.

Now, in terms of the basics of neonatology, the basic principles apply whether you're working in the 1980s or 2022. The basic principles remain the same.

MYERS: The current recommendations for respiratory pressure for preterm babies, Dr Evans --

EVANS: Sorry?

MYERS: The current recommendation for respiratory pressure, resuscitation pressure, for preterm babies is in fact 25 centimetres, not 20 centimetres of water, isn't it?

EVANS: It varies, actually. It varies with the size of the baby. You saw that video where it said 30 centimetres of water and with prem babies it's 20 centimetres of water. This is where your clinical experience comes in: you have to deal with every patient on its merits. That is what clinical practice is all about. And being pedantic about whether something is 25 or 30 doesn't get you anywhere if you're trying to be an effective clinician.

MYERS: Small differences can make big differences with 20 babies(?), can't they?

EVANS: Absolutely. Therefore when you're talking 20, 25 or 30, I'm sure that in my time I've used all of those pressures depending on the problem at hand.

MYERS: Can I finally ask this on this topic: is it your view that not being in clinical practice makes no difference to the experience and knowledge you can bring to bear on what you're talking about?

EVANS: No. The difference is this: that if I am not in clinical practice -- I have not retired, I should remind everybody -- if I'm not in clinical practice I have time to explore other aspects of medicine or children's medicine, that is as important. I could for instance -- it would be very difficult for me to be here if I was a hands-on neonatologist working 5 days a week in Swansea or anywhere else. So therefore the experience I have accumulated over a long period of time has been crucial to my being able, in my opinion, to give you an

objective and clear opinion on all of the cases that we are going to be discussing over the next few weeks and months.

MYERS: Last topic I want to deal with this afternoon is this in terms of what your time is spent doing and what you do. Since 2009, being an expert witness has in fact been your chief activity, hasn't it?

EVANS: Um... Yes, I suppose it has, actually, yes.

MYERS: Just looking at what you say in your statement about this, it's at page 4555, but I'm going to read it so we have this:

"I have prepared reports relating to safeguarding issues for over 20 years and have given evidence in courts in civil cases in Wales, England, Ireland and Northern Ireland and in criminal cases in Wales and England. Between 2008 and August 2018 I have prepared over 220 reports relating to safeguarding issues at the request of the various participants. They include reports for courts (in excess of 70 cases), police authorities or the National Crime Agency (in excess of 60), solicitors for parents (in excess of 30), the defendant (in excess of 30), and the guardian and the local authority and the health board and the coroner."

Your focus has been on being an expert witness, hasn't it?

EVANS: Yes.

MYERS: And you've studied that, you've undergone the necessary training, haven't you?

EVANS: Yes, I have.

MYERS: If I look at your CV at page 4, just so we can see, you have done training with Bond Solon --

EVANS: I have.

MYERS: -- in 2017, 2019, 2020, 2021? Bond Solon offer training for people who are going to be giving evidence in courts; is that correct?

EVANS: Correct.

MYERS: I see 1 to 2 March 2018, you have attended a course at the Royal Society of Medicine, "Expert witness skills masterclass: how to avoid the pitfalls". The pitfalls of giving expert evidence does that mean?

EVANS: Well, you know, how to make sure you present yourself properly, really.

MYERS: You have expertise in writing reports?

EVANS: I do.

MYERS: And expertise in coming to court and giving evidence?

EVANS: I do.

MYERS: Would you agree with me if I suggest really that the main thing you are an expert in doing at the moment, Dr Evans, is being an expert?

EVANS: What does that mean?

MYERS: As an expert witness.

EVANS: I think that's far too flash for me. I would say that I am here as a children's specialist with a huge experience of looking after small sick babies and I'm pleased -- and my role here is to assist the court in sorting out some extremely challenging issues. So I do not call myself -- you know, today, for instance, I have called myself an independent medical witness. I have not, from this, called myself an expert anything. So I call myself an independent medical witness and that and my opinion is based not on being an expert, my opinion is based on being a doctor. Okay?

MYERS: We make no disagreement with the assessment that they are extremely challenging issues.

EVANS: Absolutely.

MR MYERS: My Lord, those are the questions that we ask at this stage.

MR DRIVER: I have no re-examination. Does your Lordship have any questions for Dr Evans at this stage?

MR JUSTICE GOSS: No, just one of clarification for the benefit of the jury. A few minutes ago it was put to you that when you were going through the various reports you prepared and who you've acted for, on whose instructions, that sort of thing, you referred to solicitors acting for parents, the defendant, the guardian. The local authority health board, the guardian, it's not the newspaper it's called a guardian ad litem, it's a person appointed by the court to represent the issues of the child.

EVANS: That is correct, my Lord, yes.

MR MYERS: I should have clarified that, my Lord.

MR JUSTICE GOSS: All right, thank you.

Thank you very much. That completes your evidence at this stage. You'll be required to come back and you'll obviously be alerted as to when you are required to come back.

EVANS: Yes, my Lord.

MR JUSTICE GOSS: Thank you very much at this stage.

Members of the jury, you'll remember I said we couldn't start until 11 o'clock on Monday. I remind you of that. It's not a rail strike day, I don't think, is it? No, it's not. Someone will tell me when the next one of those is and we'll address that if we get one on a court working day.

Thank you very much. That's it, the end of the week, the weekend is coming. My advice to you is -- of course, you can't put out of your mind entirely what role you are fulfilling in this very serious and very important case, but don't dwell on matters too much. There's a long, long way to go, there's a lot of material to be placed before you for to you assess, so do other things, obviously, at the weekend and I'll see you, I hope, at 11 o'clock. If I'm a few minutes late, I apologise in advance. It will be my responsibility, but it's probably because something else has occurred that's impeded my movement. So 11 o'clock, please, be ready to start then. Thank you very much.

And remember those vital instructions: no conversation by any means with anyone about anything to do with this case. No research about anyone or anything to do with this case. Thank you.

If you haven't already done it, I did it earlier this afternoon, plug your -- yes. Plug it in. As Mr Murphy said, he'll come around and do it all.

(In the absence of the jury)

Is your iPad plugged in? You've got it there, thank you very much. Thank you.

MR MYERS: Just some confusion about what to do with some paperwork, I think. That's all it was.

MR JUSTICE GOSS: That's all right. Are both of you going down to see her?

MR MYERS: Yes, that will happen.

MR JUSTICE GOSS: Thank you.

(4.13 pm)

(The court adjourned until 11.00 am on Monday, 17 October 2022)