Neutral Citation Number: [2023] EWHC 19 (KB)

QB-2019-004029

IN THE HIGH COURT OF JUSTICE
KING'S BENCH DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 11th January 2023

Before:

MR JUSTICE RITCHIE

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BETWEEN

CNZ
(SUING BY HER FATHER AND LITIGATION FRIEND MNZ)
Claimant

- and –

ROYAL BATH HOSPITALS NHS FOUNDATION TRUST (1)
THE SECRETARY OF STATE FOR HEALTH AND SOCIAL CARE (2)
Defendants

John de Bono KC (instructed by Boyes Turner LLP) for the **Claimant**
Jeremy Hyam KC (instructed by Bevan Brittan LLP) for the **Defendants**

Hearing dates: 5-9th and 13th December 2022

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APPROVED JUDGMENT

Mr Justice Ritchie:

The Parties

1. The Claimant is a 26 year old woman who suffers quadriplegic cerebral palsy.

2. The 1st Defendant runs the Royal United Hospital Bath. The 2nd Defendant is the Secretary of State for Health who is responsible for the antenatal care provided by the midwives in this case.

Bundles

3. For the trial the Court was provided with three lever arch files, the first containing the pleadings, orders and witness statements. The second containing the experts' reports. The third containing the medical notes and other relevant documents provided during disclosure. A video of part of the labour was made available.

4. During the trial the Court was also provided with various diagrams of the human brain and in addition the Claimant's mother's original ante-natal notes files.

Summary

5. The Claimant was born at about 01.03 hours on Saturday the 3rd of February 1996. She was a twin and her sister was born about 1 hour before her. As a result of acute profound hypoxic ischaemia, which she suffered before and for three minutes after her birth, she has cerebral palsy.

6. It is the Claimant's case that her mother requested caesarean section (CS) but her requests were refused or delayed. In addition the Claimant asserts that her mother was never offered elective caesarean section (ECS) despite (on her case) such being a reasonable treatment and additionally that when the hospital finally decided to deliver the Claimant by CS the operation was carried out negligently late and therefore the acute profound hypoxic ischaemia which the Claimant was enduring in the last minutes of her time in the womb before birth and for 3 minutes after her birth was not avoided or ameliorated as it should have been.

7. It is the Defendants' case that in 1996 ECS was not a reasonable treatment option to offer during the antenatal period, so it was not offered, that offering and advising normal vaginal delivery was the correct practice and that the Claimant's mother did not request caesarean section antenatally. In addition the 1st Defendant asserts there was no negligence during the labour and the parents' requests for CS were granted in a timely way.

Terminology

6. I will use the following abbreviations and defined terms in this judgment.

- Acute PHI: acute profound hypoxic ischaemia. The cessation of blood flow from the placenta to the fetus (ischaemia) causing a lack of oxygen to the fetal brain (hypoxia). The cause of which may, for example, be cord occlusion or placental abruption.
- AN notes: antenatal notes.
- ARM: artificial rupture of the mother's membranes.
- Cervix: the tissue at the lower end of the uterus which opens before birth due to pressure applied by the presenting part of the fetus or the amniotic sack.
- BPM: beats per minute.
- Cephalic: the position of the fetus when her is head downwards in the uterus.
- CP: cerebral palsy.
- CS: caesarean section, defined in more detail below.
- CTG: cardio tachograph used to measure FHR.
- ECS: an elective caesarean section offered by the treating doctors as a reasonable birth plan.
- CSMR: a caesarean section by maternal request agreed to by the obstetricians.
- EA: epidural anaesthesia provided by sticking a needle into the mother's spine.
- F: the Claimant's father.
- FHR: fetal heart rate.
- GA: general anaesthetic.
- IOL: induction of labour using various relatively non invasive procedures but not involving planned caesarean section leading to normal vaginal delivery.
- IPV: internal podalic version, a procedure by which the obstetrician inserts her hand and wrist into the mother's uterus and turns the baby around into a better birth position. Either EA or GA is generally required to effect this difficult procedure.
- LOC: loss of contact between the baby's heart and the receivers shown as a blank on the CTG trace.
- LW: labour ward or delivery suite.
- M: the Claimant's mother.
- MHR: maternal heart rate.
- MRI: magnetic resonance scan.
- NVD: normal vaginal delivery.
- Syntocinon: a man made chemical used to induce contractions in the mother's uterus similar to Oxytocin (a hormone).
- VE: vaginal examination.

Reading and interpreting a CTG trace:

- Accelerations on the CTG: transient increases in the FHR above the baseline by more than 15 BPM enduring for over 15 seconds.
- Baseline FHR: the FHR shown on the CTG through the middle of the high and lower points.

- Deceleration: dropping of the FHR shown on the CTG trace lasting over 15 seconds and dropping sufficiently down to qualify (>15 BPM reduction from the baseline). Late deceleration - occurring or enduring until after the maternal contraction has ended.
- Variability of FHR baseline: a base line FHR which shows fluctuations seen as peaks and troughs as it progresses through each minute.

8. **Caesarean section:** The final term to define is caesarean section. The history of caesarean section is very long and goes back to historic Hindu, Greek and Egyptian texts. The Roman *Lex Caesaria* decreed that women who were dying or who died during childbirth should have their babies saved by surgical birth. In 1996 caesarean section involved major abdominal surgery with the mother under epidural (spinal) or general anaesthetic.

The Issues

Antenatal issues

9. Did M request a CSMR during the antenatal meeting with any midwife or Doctor?

10. Was M offered ECS during the antenatal meetings by any obstetrician?

11. Did M agree to NVD having properly discussed the risk and benefits of NVD compared with CS with an obstetrician?

12. If CS was not discussed but should have been discussed, would M have chosen it contrary to the advice given by an obstetrician to choose NVD and only to have CS as a fall back when medically indicated?

13. Should M have been offered ECS during the antenatal meetings with an obstetrician? Was ECS a reasonable alternative treatment for M who was healthy, carrying twins who were healthy and lying head down and who had given birth twice before by NVD but who did not wish to have an ARM or an EA?

14. Did the obstetricians seek to persuade M to have NVD instead of CS in a way which breached M's right to make an informed choice between reasonable alternative treatments?

Labour issues

15. Did the obstetricians fail to grant the parents' choice for a CS during labour after midnight on 3.2.1996?

16. Did the obstetricians negligently fail to perform a CS quickly enough?

Pleadings and chronology of the action

17. In April 2018 the Claimant's lawyers sent a draft set of particulars of claim to the first Defendant as a sort of pre-action protocol letter. It was not a normal letter before action. In that document, which was drafted by counsel, the Claimant asserted the following facts: that there was a planned IOL for her birth by NVD. M arrived at Bath hospital on the 2nd of February 1996. It was specifically pleaded that there was a plan to break the M's membranes but in fact they broke spontaneously for twin 1. M then requested epidural anaesthesia but the Doctor's attempts to site the needle failed. She was given Pethidin. The first twin, Bethany, was born in good condition at one minute past midnight on the 3rd of February. It was pleaded that Oxytocin was started and decelerations were shown in the FHR on the CTG trace at 00.05 and 00.09 but these were incorrectly labelled as LOC. It was pleaded that from 00.20 the CTG improved. It was pleaded that at 00.35 after a VE some discussion took place and M stated that she did not want an ARM and wanted CS under GA. The Doctor went for advice from a consultant and returned with a plan for transfer to theatre and then a further assessment to see if an ARM could safely be performed. Transfer to theatre occurred by 00.45 and then the parents requested a CS again. The Doctor telephoned the consultant again who agreed to CS and it was performed with delivery at 01.03. 13 minutes had passed since induction of anaesthesia.

18. The allegations of negligence focused solely on the Doctor's failure to deliver the Claimant quickly enough. It was asserted that the interval between delivery of twin 1 and twin 2 should not normally be greater than 30 minutes. It was asserted that no reasonable obstetrician would have failed to decide to take M to theatre at 00.20. It was pleaded that there were only two realistic options for delivery at that time namely: ARM or CS both of which required transfer to theatre and therefore no delay was permitted after 00.20. It was pleaded the obstetrician failed to recognise three decelerations on the CTG at 00.05, 00.09 and 00.17 and that these were misinterpreted as LOCs. The doctors failed to attach an oximeter to measure M's pulse which would have disclosed that in theatre the CTG transducer was not recognising the FHR but instead picking up the MHR. It was pleaded that the CS should have been started earlier and the Claimant should have been born by 00.43. In addition it was pleaded that at 00.35 M had requested a CS which should have been agreed at that time. Finally, it was pleaded that 13 minutes from induction of GA at 00.50 to delivery at 01.03 was too long.

19. The 1st Defendant's letter of response dated June 2019 denied negligence. The 1st Defendant complained that sending draft particulars of claim was not compliant with the pre-action protocol. It was denied that the interval between delivery of twins was not permitted to be greater than 30 minutes. It was asserted that at 00.20 hours no specific action was required because contractions had only recently started to develop after the administration of Syntocinon and it that was reasonable to wait. The response letter admitted that there were decelerations in the FHR after the first twin was born but asserted that these were neither sinister nor significant. It was pointed

out that after transfer to theatre there was no CTG applied so the allegation in relation to the Oximeter was denied. In relation to the CTG taken on the labour ward it was asserted that it had a normal baseline with accelerations. It was asserted that the doctors were reasonable to allow 20 minutes following commencement of Syntocinon to see if spontaneous delivery occurred and that the transfer to theatre was appropriate thereafter and that assessment at theatre was appropriate in case the baby had descended into the pelvis. The time taken for the decision and the execution of the CS was reasonable. It was also asserted that the consent process involved explanations of benefits and risks for the various reasonable treatments and that this process took time.

20. The Claim Form was issued in November 2019 and the Particulars of Claim (POC), drafted by counsel, were dated March 2020 and signed by F. It was asserted that the Claimant lacked capacity to conduct the litigation. By this time the claim had been substantially changed. It was asserted for the first time that the Defendant had failed to offer ECS which was pleaded to be a reasonable alternative treatment to NVD. In addition it was asserted that the Defendant had failed, following the delivery of twin one, to agree to M's request for a CS. The previous allegations of clinical negligence due to delay in performing the CS were maintained. The Claimant pleaded out her mother's previous pregnancies in 1981, 1985 and 1990. In relation to the Claimant's antenatal period it was asserted that M had told a community midwife that she wanted a CS and M believed the midwife had written this into the AN notes. It was asserted that no steps had been taken by any midwife to arrange a discussion about a CS with a Doctor. M asserted she had told a midwife that she did not want an ARM or an EA. The reason for these views was as a result of her two previous pregnancies in 1981 and 1985.

21. It was specifically pleaded that on the 19th of January 1996 M had requested a CSMR but she was told that this was *not an option* so she then expressed her preference for natural labour without an ARM or and EA.

22. It was pleaded that on the 30th of January 1996, at the hospital antenatal clinic, a birth management plan of induction of labour (IOL) was agreed. M understood this was because of a bad pregnancy rash she had developed over the preceding week. It was pleaded that M was not offered an ECS at that meeting. (I note that no allegation was made in this pleading about a CSMR on the 30th of January 1996 at that clinic.)

23. In relation to events at the hospital it was pleaded that M attended for IOL and when first seen by a midwife she reconfirmed that she did not wish an ARM or an EA. M pleaded that she stated she was not happy about having IOL. Later that day M requested an EA but attempts to site the needle failed. Bethany was born and the Claimant relied on a video of events between Bethany's birth and 00.30. Thereafter the Claimant pleaded that the CTG and the video showed decelerations in the FHR

around 00.05, 00.11, 00.14 and 00.17. It was pleaded that after 00.20 the CTG had improved and was discontinued at 00.41. At 00.27 Doctor Tristram left the labour ward room and while she was away the video showed M continuing to push with midwife encouragement and then having her legs put in stirrups, M was distressed and crying. It was pleaded that at 00.35 Doctor Tristram returned, performed a VE, found that the cervix was closing and started a discussion with the parents. It was pleaded that M did not want an ARM and said she wanted a CS under GA. The Claimant asserted that at 00.35 the only reasonable treatment option was a CS under GA. In the alternative it was pleaded that if CS was not the only treatment option then it was a reasonable alternative treatment and should have been offered. Because the Claimant was requesting it she clearly would have accepted an offer of CS. It was pleaded that the Doctor then telephoned the consultant who advised transfer to theatre with subsequent assessment to see if an ARM could safely be performed. It was pleaded that this decision ignored M's request for a CS. It was pleaded that by 00.45 M was in theatre and the midwife noted the parents' next request for CS. After an assessment by Doctor Tristram she then again phoned the consultant and CS was finally agreed. GA induced at about 00.50 and the Claimant was delivered at 01.03 some 13 minutes after the induction of anaesthesia.

24. The Claimant alleged negligence on the following bases. Firstly it was alleged that the 1st Defendant failed to offer M an ECS. Secondly it was alleged that the 1st Defendant ignored M's request for a CSMR and thirdly it was alleged that the CS eventually performed by the 1st Defendant was done too late. In more detail it was asserted that by 00.20 CS was a reasonable alternative treatment which had to be offered to M but was not. In addition it was pleaded that by 00.35 when M requested CS the 1st Defendant delayed agreeing.

25. In relation to negligence during labour it was asserted that without satisfactory monitoring labour should not have been permitted to continue so long. Decelerations on the CTG especially at around 00.16 and those at 00.11, 00.14 and 00.19, which were all audible, should have led Doctor Tristram by 00.25 to conclude that the only reasonable course of action was to start making arrangements for transfer to theatre at that time. In addition it was pleaded that the most realistic option at that time was delivery by CS. The Claimant asserted it was negligent to delay transferring M to theatre between 00.25 and 00.40 and that the obstetrician failed to recognise decelerations in the FHR at 00.05, 00.09 and 00.17 (the times are different from those set out earlier in the pleading) and negligently characterised those as LOCs. Finally, it was alleged there was negligent delay in delivering the Claimant.

26. In relation to causation the Claimant pleaded that delivery should have taken place by 00.46 which would have avoided all injury and in the alternative that delivery by any time before 01.03 would have made a material contribution to reduction in injury.

27. In August 2020, before service of the defence, the POC were amended to add the Secretary of State for Health as the 2nd Defendant, responsible for the relevant midwives.

28. In the defence dated September 2020 the breaches and causation were denied. In relation to causation the Defendants put the Claimant to proof that the Claimant's brain damage was "indivisible" (and hence, had she been born earlier and found to have been materially less injured as a result of earlier delivery, the Claimant would recover the totality of her damages).

29. An amended defence was served on 20th December 2021 in which the Defendants changed their case on causation. It was admitted that if the Claimant had been born by 00.55 hours all injury would have been avoided. But the Defendants asserted that birth between 00.56 and 01.01 hours would have led to a reduction in the Claimant's injuries which is assessable and apportionable in law and so damages should be apportioned between the non negligent brain damage and the negligently caused brain damage.

30. Various interlocutory orders were made and on the 26th of April 2022 Lambert J made an anonymity order. It is for that reason that I refer to the parents herein without using their names.

31. On the 9th of May 2022, at the start of the first trial, the Claimant disclosed a handwritten note by F purporting to be a record made in April 1996, two months after the Claimant's birth which contained an account of the events that occurred during the Claimant's birth. The Claimant wished to rely upon that note and by an order made on the 16th of May 2022 Lambert J adjourned the first trial and permitted the Claimant to rely on it. Permission was also granted to re-amend the POC. The Claimant's solicitors admitted negligence in failing to disclose the relevant note and were ordered to pay the costs. Permission was granted for further witness statements from M and F and the Defendants' witnesses.

32. The pleaded case for trial is set out in the Claimant's re-amended POC dated 12th May 2022. I shall focus on the deletions and additions in the light of my summary above. In relation to ante-natal assertions, the previous allegation that the 1st Defendant failed to offer M an ECS was deleted. Instead the Claimant's case changed to an allegation that the midwives failed to make arrangements for a discussion between the parents and an obstetrician about the birth plan despite being aware that M wished to have a CS. In addition it was asserted that on the 30th of January 1996 Doctor Dunlop should have discussed CS with M because it was a reasonable alternative treatment to NVD. The Claimant relied on the late disclosed handwritten note. The Claimant asserted that M understood from her discussions with the midwives antenatally that she would be able to have a CS. As evidence of that the

parents asserted that at a meeting on the 18th of April 1996 with a consultant, Mrs Tonge, both the parents and the consultant saw a separate sheet of paper in the antenatal notes file which was a note by a midwife stating that M was to have a caesarean section. Mrs Tonge, it was asserted, commented on that note stating that the midwife had no authority to agree the birth plan or a CS.

33. In relation to the midwife visit on the 19th of January 1996 the assertion pleaded in the amended POC that the midwife told M that CS was *not an option* was deleted. In its place the Claimant asserted that the midwife stated that she agreed that M *should have* a CS because of her size.

34. In relation to the antenatal visit on the 30th of January 1996 the new assertion was that during a discussion between Doctor Dunlop and M the latter made clear she did not wish an ARM because it had been causative of her stillborn baby's death. In response Doctor Dunlop told M she should have her waters broken rather than have a CS. M replied she would rather have a CS than have her waters broken. In response Doctor Dunlop "laughed". The Claimant relied on the late disclosed note written by F in April 1996 and on a letter from her former solicitor's file dated 2001- 2003 for this factual assertion. The Claimant pleaded out her reasons for M not wishing to have an ARM or an EA which related back to the 1981 and 1985 pregnancies. She also pleaded that her grandmother had given birth to twins, one of which was stillborn and the other of which died tragically at age 6 weeks.

35. A meeting on the 18th of April 1996 between the parents and Mrs Tonge was pleaded out.

36. The particulars of breach were re-amended so that the Claimant now asserted that the midwives failed to make arrangements for M to discuss the birth plan with a Doctor during the antenatal period, as they should have, because M had requested a CSMR. It was pleaded that an ECS should have been offered to M on the 30th of January 1996 but was not. It was asserted that a balanced discussion should have taken place between M and Doctor Dunlop involving 14 bullet points imported from a report by Mr Forbes which cover the benefits and risks of NVD using IOL compared to CS.

37. In relation to the assertions of negligence at the hospital the amendments focused on the assertion that the 1st Defendant failed to transfer M to theatre at 00.25 when that was the only reasonable way forward. In addition the Claimant asserted that there was negligent delay in delivery and this was fleshed out so that it rested on the lack of adequate monitoring of the FHR after 00.40 when the CTG was removed and the delay of 13 minutes between induction of anaesthesia and birth.

38. In relation to causation the re-amended pleading fleshed out the assertion that causation was all or nothing, every minute counts and that even a short delay would

have made a material contribution which should lead to a 100% recovery because the functional result of a few minutes of negligently caused acute PHI is indivisible from the total injury suffered.

39. In the re-amended defence dated July 2022 the Defendants pointed out the repeated alterations of the Claimant's case in relation to the asserted facts, the inconsistencies in the Claimant's parents' various accounts and the inconsistencies between the video evidence and the note written by F in April 1996. The Defendants pleaded that in the draft POC the Claimant had not asserted any specific CSMR but in the re-amended POC the Claimant's parents did assert that they had made a CSMR antenatally. The Defendants pleaded that in any event M had agreed to NVD and that was noted in the AN notes. In their re-amendments the Defendants pleaded there were no grounds to offer a CS whether due to the mother's size or the fact of twins because she had already had two NVDs and she had expressed a preference for natural labour. The Defendants pleaded in relation to the 30th of January 1996 that M had agreed to a membrane sweep which had been done in the clinic by Doctor Dunlop. This would have followed a discussion about and consent for the procedure in the full knowledge that labour might commence naturally after the sweep. The Defendants pointed out this was inconsistent with M's assertion that she was requesting a CS at the consultation. The Defendants pleaded that M agreed to IOL.

40. In relation to the assertion that there was a duty on the 1st Defendant to offer M an ECS the 1st Defendant relied on a Scottish decision to assert that there was no duty on the obstetricians to disclose or discuss alternatives that in the exercise of their professional judgment were not regarded as reasonable and the Defendants asserted that ECS was not a reasonable alternative birth plan/treatment.

41. In relation to labour and the discussions about the way forwards with Doctor Tristram during labour, the 1st Defendant denied that CS was the only reasonable way forwards before Doctor Tristram left the room at 00.27 and asserted what she did was reasonable medical practice. The 1st Defendant denied that M's legs were placed in stirrups without her consent and asserted that at 00.35, when M requested CS, the obstetrician went through a proper process of dialogue setting out the risks and benefits, she sought to persuade M that transfer to theatre and further assessment with a view to an ARM and then making a decision was the correct way forwards at that time in view of the fact that there was no bradycardia shown on the CTG and no evidence of significant fetal decelerations. The 1st Defendant asserted that the obstetrician's discussions with M were appropriate and that there was no unreasonable delay. The 1st Defendant asserted that agreeing to CS in theatre was appropriate once M had rejected an ARM and an EA.

42. In relation to the allegations of negligence the Defendants pleaded that contrary to the Claimant's assertion that she was not referred to a Doctor by the midwives after her

request for a CS, M did in fact meet doctors and agreed with them for IOL. The Defendants denied that M ever made a CSMR and denied that the Defendants were required to offer an ECS on the 30th of January 1996. The Defendants asserted that the membrane sweep carried out on that date and the consent thereto was inconsistent with the factual assertions made by M. In relation to the alleged negligence in labour the 1st Defendant denied that there was a mandatory requirement from an immediate transfer to theatre or for CS at 00.20 hours and asserted it was reasonable to wait for the Syntocinon to induce sufficient contractions to bring the Claimant's head down into the pelvis. The 1st Defendant relied on the lack of bradycardia or significant fetal decelerations on the CTG before 00.20 and the reassuring CTG between 00.20 and 00.41. The 1st Defendant asserted that the fact that the Claimant was born within 23 minutes of transfer to theatre was a reasonable time frame.

43. In relation to causation by their amendments the Defendants admitted that if the Claimant had been born before 00.55 hours then all injury would have been avoided. However birth between 00.55 hours and 01.03 hours would have produced less but still *divisible injury.* The specific pleading at paragraph 56a and 56b was that if the Claimant had been delivered between 00.56 and 01.01 hours she would have sustained up to around only 5 minutes of acute PHI and would probably have been less functionally injured leading to well preserved communication and ability to manage self-care, well preserved cognition and mobility at scale GMFCS 2. In addition the Defendants pleaded that if the Claimant had been delivered after 01.01 and before 01.03 she would have been largely the same as she is now. Therefore the Defendants pleaded that the Claimant's injury is divisible and acute PHI *"would have caused incremental damage to the Claimant's brain from around 00.56 hours*" which is capable of being divided as set out above in 5 minute Aliquots.

44. I would not usually have extracted so many parts of the pleadings and chronologised them as I have above but in this case the Claimant's case has altered so substantially over time that it was necessary to do so. In addition the Defendants altered their case on causation.

The witness evidence

45. I heard evidence live from the following witnesses: M and F; Doctor Dunlop; Doctor Tristram; Mrs Tonge and Mr Porter.

The expert evidence

46. I heard live evidence from:
    - 46.0 Mr Forbes and Mr Tuffnell, consultant obstetricians.
    - 46.1 Doctor Newton and Doctor Rosenbloom, consultant paediatric neurologists.
    - 46.2 Doctor Dear and Doctor Fox, consultant neonatologists.

47. I read evidence from:

47.0 Doctor Likeman and Doctor Craven, consultant neuro-radiologists.
47.1 Dawn Johnston and Kaye Wilson, consulting midwives.
47.2 Mr Dunster (deceased).

Documentary evidence

48. The key documentary evidence was set out in the antenatal and the labour notes, the late disclosed note written by F in April 1996 and the file notes disclosed late by the Claimant from M's previous solicitor's files. The video with audio of the labour was also important evidence. I read letters from Mr Paul Shillito, a consultant paediatric neurologist who was not a witness but whose letter was served with the POC and both parties' experts relied upon and Doctor Sarah Gregory, clinical Psychologist, dated 19 January 2012, who was not an expert called to give evidence but whose report was relied upon by the experts from both parties in evidence

Historic witness evidence

49. Before I turn to the evidence I should introduce a note of caution. The events which this Court is dealing with occurred 26 years and 8 months ago. This being a clinical negligence case which occurred so long ago the evidence of the Defendants' witnesses was mainly about what they considered was a fair and reasonable interpretation of their own notes (and those made by other clinicians) and what they "would have" done as normal practice back then, not what they could actually recall of the events.

50. In contrast the evidence of M and F was what they asserted they actually recalled, aided by the clinical notes, the video which they took between the birth of Bethany and of the Claimant and by looking at the recently re-found note made by F in April 1996 and some lawyers' file notes made over the years.

51. I acknowledge that it is inherent in all traumatic birth cases that some events become more illuminated in the minds of parents due to the trauma. I also take into account that memory, being a human talent or function, is not perfect nor is it made of concrete. On the contrary it may be degraded by time, enhanced by emotion, refined by repetitious discussion or lost or buried in part or in whole. In addition it may be innocently reconstructed in part or in whole by discussion, events, emotion (for instance anger or sorrow) and time.

The medical notes

52. The Defendants have retained the medical notes. These included M's notes from her earlier pregnancies in 1980, 1985 and 1990. The summary I set out below is in narrative form for ease of understanding of the events. It is made by interleaving the midwives' notes with the obstetricians' notes and relying on the clinicians' explanations of the words and acronyms written. In this section I stick to the notes not any additional evidence given by the witnesses save for the meaning of words. The timings (which I will rule on later) are taken from the medical notes not the video.

53. In 1981 M had the misfortune to give birth to a stillborn baby at the Royal United Hospital Bath. The baby was described as anencephalic, meaning that part of the skull was missing. The birth was induced at 32 weeks. It was traumatic and lasted 26 hours. The baby was alive at the start of the process. During the process M was given an epidural which was ineffective as pain relief and noted as such. In addition she underwent an ARM. She was aged 21 at the time.

54. In January 1985 after an 8 and a half hour labour M gave birth to Brent, her son, who was born weighing 8 pounds, by NVD at the Royal United Hospital Bath. Her membranes were ruptured during the labour (ARM) and she had to have an episiotomy. In addition she suffered a retained placenta because her cervix was closing after the birth and she was taken to theatre, given a GA and her placenta was removed surgically.

55. In October 1990 M gave birth to her daughter Jessica by NVD at the Royal United Hospital Bath. The labour ward notes are clearly marked *do not rupture membranes unless medically necessary*. She also expressed a wish to use a birthing stool. Before this birth there was correspondence in which M insisted on delivery at Frome hospital instead of at Bath. Letters were exchanged in June and July 1990 setting out M's bad experiences at Bath hospital and her unhappiness at returning there. Mr. Porter, who was a consultant at the time, set out the pros and cons of birth in the local hospital compared to the larger facilities at Bath hospital but noted that M was adamant that she wanted a birth in Frome and noting that she would eventually do what she wanted. Interesting by September of 1990 the GP wrote back to Mr. Porter to say that M had changed her mind and accepted delivery at Bath. The notes show that when M was fully dilated ARM was used to deliver her live baby despite her earlier expressed concerns.

56. M had two other pregnancies, one was terminated in 1980 and she also suffered a miscarriage in 1994.

57. In 1995 M became pregnant again. The AN notes show that she attended meetings with midwives or doctors on 17 occasions before being admitted to hospital on Friday the 2nd of February 1996.

58. In four of those antenatal visits M saw obstetricians. For the other 13 visits M only saw midwives. At antenatal meetings with midwives on the 1st of May; 12th of July; 31st of August; 18th of September; 2nd and 6th of November 1995; there is nothing recorded which is relevant.

59. On the 30th of November 1995 M met a midwife and a registrar obstetrician called Doctor Robson. A birth plan was agreed. She was booked for the Royal United

Hospital Bath for an NVD at term. The Doctor noted that the plan was to avoid IOL and that M preferred not to have an EA.

60. Further visits occurred on 4th, 7th, 13th and 21st December 1995 with midwives. On that last date M was listed to have her birth under a consultant called Mrs Tonge at the Princess Anne Wing of the Bath hospital. A further midwife appointment took place on the 4th of January 1996.

61. On the 9th of January 1996 M saw Doctor Tristram (obstetrician). She noted aches and pains and back ache. She noted that the Claimant needed to have a growth ultrasound scan. M requested a VE. Doctor Tristram noted the cervix was long, closed and posterior. She carried out an ultrasound scan noting the twins' foetal heart rates and noting that the presenting twin was cephalic and the upper twin had an oblique lie. There was no note made during this meeting of any discussion of ECS or CSMR.

62. On the 16th of January 1996 M once again met Doctor Tristram. The notes show that M was tired, had swollen feet and hands and complained of reduced fetal movement last week and being fed up. The midwife was advised to cheque M's blood pressure twice a week. The twins' positions were noted as being cephalic. There was no note made during this meeting of any discussion of ECS or CSMR.

63. On the 19th of January 1996 a midwife carried out a home visit. The midwife noted that M would prefer a natural labour with no ARM or EA and noted that M had suffered previous problems with epidurals in a previous pregnancy. In addition the midwife noted that "if" M had a CS she would like to be sterilised. There was no note made during this meeting of any CSMR.

64. M attended further meetings for check-ups with midwives in January 1996 on the 20th, 21st, 22nd, 25th and 28th. From the 21st onwards she had been complaining of a rash on her body and was treated with a cream. There is no note in any of those meetings of CSMR or any discussion of CS.

65. On 30th of January 1996 M attended at Bath hospital and met Doctor Dunlop (obstetrician). The notes show that she was scanned and that both twins were presenting in a cephalic position. Doctor Dunlop noted a bad rash and carried out a VE noting the cervix to have "multiple OS". She swept M's membranes and noted that the plan was for IOL and the indications for that were twins at 38 weeks and maternal discomfort. There is no note of M requesting a CSMR or of any discussion of ECS.

66. On the 2nd of February 1996 M was admitted for induced labour as set out at the start of the labour ward notes. Under the comment section on the front sheet a midwife wrote "*anxious about ARM and epidural. Problems last epidural. May have choice to*

labour without." At 08.15 hours the notes show that the IOL procedure was explained and CTG was commenced. There is no note of M requesting a CS. The CTG was assessed as reactive at 09.25 but there were no contractions. By 14.30 hours M felt she was tightening and contractions were 1 in 5. By 14.35 the CTG was re-commenced and reactive traces were seen for both twins' FHRs. Contractions were noted as 2 in 10. At 14.50 hours Prostin was inserted per vagina and the CTG was assessed. At 15.40 hours a deceleration was queried for both twins on the CTG with one definite LOC. Both traces were considered reactive by 16.10 with good variability and no decelerations. At 17.15 the CTG was noted as reactive with good variability. VE took place then M was sent to the labour ward by 19.45. By 21.30 M was noted as contracting strongly and both fetal heart rates were heard. VE showed the cervix at 3 centimetres dilated and 50% effaced and the lower baby's presentation was cephalic. No membranes were felt so her waters had broken naturally. By 22.00 hours M was requesting an epidural and the anaesthetist was called. A VE was carried out and the cervix was 5 centimetres dilated and well applied. The anaesthetist arrived at 22.15 and made a note at 22.30 that M had had a bad epidural 10 years before and was not certain about it. The procedure was explained to her. Having tried to get the EA into position M was unable to arch her back forwards adequately to open the space for the needle. She was also unable to keep her back still enough for safe insertion. After two attempts EA was stopped. There was a discussion with M and she decided against further epidural and was awaiting Pethidine. This was given. By 00.01 Bethany was born by NVD.

67. The notes for the key one hour between midnight and 01.03am in the morning are summarised below. Those made by Doctor Tristram were made 2 hours after the event. It appears to me that she has taken her 5 minute intervals from the midwife's notes which were made contemporaneously.

68. At 00.05 the midwife wrote that M was awaiting contractions because there were none. There was no matching obstetrician's note. At 00.10 the midwife noted no contractions, Syntocinon infusion was commenced. The obstetrician noted minimal contractions, a cephalic lie and that Syntocinon was commenced.

69. At 00.15 the midwife noted Syntocinon was increased, the head was high, ultrasound was performed by Doctor Tristram and the baby was cephalic. Doctor Tristram's note was that the presenting part remained high and ultrasound scan confirmed the lie was cephalic and Syntocinon was increased.

70. At 00.20 Doctor Tristram noted that she carried out a VE, the cervix was 8cm dilated, not well applied and the Claimant's head was not in the pelvis. The amount of Syntocinon was increased again. The midwife made no note at that time.

71. At 00.25 the midwife made a note that M was contracting well but there was no descent of the presenting part into the pelvis. M was pushing well but was very tired. Doctor Tristram made no note at that time.

72. At 00.30 the midwife noted that F was wanting M to be on all fours. M was unable to do so. She was trying to push in the lithotomy position and that there was no advance of the presenting part. At the same time Doctor Tristram made a note of a repeat VE. The baby's head had still not descended into the pelvis, the cervix was seven centimetres dilated and very poorly applied. She wrote "*would need ARM in theatre".* I should mention here that there was no note made by Doctor Tristram or the midwife of any discussion with either of the parents about the method of delivery at this time. The video however shows that CS was requested by F and I shall return to this later.

73. At 00.35 the midwife noted that Doctor Tristram had conversed with Mr Dunster and wrote *"decision made to try ARM in theatre with possible procedure to "CS"*. A note with the same timing was made by Doctor Tristram in which she wrote that she had had a discussion with Mr. Porter and Mr Dunster (Mr Dunster had phoned back whilst on the phone with Mr. Porter) and they had agreed for ARM in theatre because the head was still high. She also then wrote that the CTG remained satisfactory, baseline around 130, variable, some decelerations with contractions, and acceleration present.

74. Without providing any additional timing but written below and so probably chronologically after the phone call with the consultant, Doctor Tristram noted she had explained the situation to patient and her husband. The patient was noted as *"requesting LSCS under GA".* She explained that maternal transfer to theatre and then reassessment would be best. This is the first note of M requesting a CS anywhere in the medical records and matches the midwife's note. I should mention here that Doctor Tristram made no note of any discussion with the parents at this stage in relation to the risks and benefits of their request for CS or of consenting any procedure.

75. At 00.40 there is a note made by the midwife that M was wheeled round to theatre on a bed accompanied by a monitor. M was distressed with contractions. The FHR was measured with a Doppler monitor. No note was made by Doctor Tristram matching that timing.

76. At 00.45 the midwife noted M had been transferred onto the operating table. Doctor Tristram was keen to try ARM with the possibility of NVD but M and F were "*not happy*" and wanted CS. The FHR at that time was noted as 135 BPM. Doctor Tristram wrote a note with the same timing which stated that she re-examined M in theatre and the vertex was still high (above 3 centimetres above the spines) and that M had refused an ARM so Syntocinon was stopped. (The experts explained that it is pointless and counter productive to try to induce contractions using Syntocinon once

the decision has been made to do a CS, the obstetrician would not want the baby descending any further whilst the CS was being done).

77. At 00.50 Doctor Tristram noted that she had had further discussion with the consultant, Mr Dunster and they had agreed to progress to CS. Subsequently and below that note she explained the plan to the patient that she agreed to carry out a CS but noted (by additional text squeezed in between the natural lines of the notes) that this would not be Doctor Tristram's first option. Doctor Tristram noted the FHR in theatre was 135 BPM. What she did not do is make clear whether that was a further reading in theatre or that she was re-noting the reading noted by the midwife at 00.45. She went on to write she was "*unable to record the fetal heart rate immediately prior to starting the caesarean section*" and wrote "?" because of the baby's position. She then wrote *"as had just heard it and were ready to start operation proceeded"* to CS. She then referred on to her own CS notes.

78. The midwife noted at 00.52 that Doctor Tristram had a discussion with a consultant and they agreed to go ahead with a CS. The "Venflon" was resited by the anaesthetist and she noted the FHR with a monitor "as Doppler" was 138 BPM.

79. The midwife noted that the Claimant was delivered by CS at 01.03. Doctor Tristram made no note in the labour ward notes of that. The operation notes which were on a different sheet noted that the cervical dilation was 7 cm, the cord was wrapped around the Claimant's neck and that there was brisk bleeding from the uterine incision during the caesarean. She also wrote that there was "*no obvious explanation found for the condition of twin"* two at delivery.

80. The only other notes of relevance were the anaesthetist's notes which showed that at 00.40 the premedication for anaesthetic was given. The anaesthetic chart showed that the MHR was 90 BMP at 00.50 and 00.55. They anaesthetist noted that delivery took place at 01.02 hours.

81. The signing of a consent form for the CS was not mentioned in either the midwives' notes or Doctor Tristram's notes. The form is untimed. However it was dated 3.2.1996 so it was probably signed after the birth of twin 1. It states that M consented to *ARM/caesarean section*. It was not signed by F. It was signed only by M.

82. After her birth the Claimant was found to be acidotic (acid build up due to hypoxia), asystolic (no heart beat), not respiring and to have APGAR scores of 1@1 and 3@5 and 3@10 and 3-4@20 and 4-6@ 60 minutes. The cord blood gasses were measured at pH 6.77. The neonatal notes recorded that the FHR became palpable and by 3 minutes 30 seconds when it reached over 100 BPM.

83. The neonatal discharge form described the CS as "an emergency CS" as did the discharge summary, the letter sent by the consultant paediatrician to the GP, Doctor Booth on 13.3.1996 and the special care nursery notes. Both obstetric experts advise that this term is used for all non elective CS procedures.

84. The special care nursery notes record that the Claimant's parents were told that because the Claimant did not breathe until about 30 minutes she was likely to "*die or be severely handicapped."* They found that traumatic.

85. By 1998 the paediatric notes show that the Claimant was crawling oddly, had 20 words, was eating well and normally and her bowels were normal. Her head circumference and length were below the 2nd percentile. She was also dystonic. Occupational therapy provided the Claimant with a wheelchair in 1999. She was walking a little with a walker. By November 1999 the occupational therapist at Bath hospital described the Claimant as a "*lovely little girl who understands instructions and has a well developed sense of humour."* She had received weekly physiotherapy. Her muscle tone was dystonic. She had mild athetoid features. She could sit and crawl but not normally. She could stand but only with support. She could use a walker to take a few steps. She needed regular physiotherapy to manage her gross motor development.

The video on the intertwin period

86. F videoed the period between the birth of Bethany and 00.34. A helpful transcription of the words spoken and events was provided by the parties. The timing on the video recorder had not been adjusted for winter so was one hour advanced. I have used actual timing below.

87. Doctor Tristram did an ultrasound at 00.08. She then did a VE at 00.17. She did a second VE at 00.20. At 00.26 Doctor Tristram had a conversation with the Claimant's parents which went as follows.

> "*Have a rest, alright. This little chap here is not coming down, not within reach yet. Nearly half an hour you've had since that last twin was born and I think we ought to start thinking about alternatives if it's not going to come down this way."* someone then asked what sort of alternatives and Doctor Tristram replied *"caesarean*". She went on to say *"I'm not saying that's what you need and that's what we're definitely going to do but we ought to start thinking about..."* I have carefully listened to the video with its audio and despite the audio being soft, by wearing headphones, I discern that F stated that they had thought that caesarean was necessary from the start. M responded that she wanted to sleep. Doctor Tristram then said that M should keep

> pushing for a couple more pushes and that she would have a word with her *"boss*" and "*we'll **slowly** get things ready*" (my emphasis). F then asked how long the Doctor could leave matters and M stated *"no I don't want it left just get it out I've had enough now."* Doctor Tristram responded at 00.27 *"well I mean babies happy in there but we can't leave it too long.*" Doctor Tristram then left the labour suite room.

88. After Doctor Tristram left the room it is clear from the video that the midwife attempted to continue persuading M to push and F suggested that M should take up a position on her knees. The midwives then tried to put M's legs into stirrups. One of the attending midwives told M at 00.34 that M did not want a caesarean when she could push the baby out and M responded "*yeah but I can't can I*?" The video stopped at 00.34.

The CTG trace

89. The CTG trace between the birth of Bethany at 00.01 hours and the end of that trace at 00.40 hours has two distinct parts to it. The first part for the first 10 minutes shows four substantial valleys. Those valleys drop away by well over 15 BMP from the baseline heartbeat which runs at between 130 and 140 BPM across the middle of the trace. The four valleys are at 3 to 5; 8.5 to 9; 14 and 16.5 to 17. There is also a peak at 19 to 20.

90. The second part from minute 20 to minute 40 contains a trace with a different pattern which bears no resemblance to the first 20 minutes when looked at using this judge's (layperson's) eye.

91. Underneath the FHR trace is the contemporaneous trace setting out the mother's contractions and this shows that between 0 and 11 there were no contractions. Syntocinon was started at 10 and it is apparent that contractions are shown starting at about 14 and continuing thereafter. Expert interpretation of these traces was provided by the obstetricians.

The parents' evidence

92. Taking this in a chronological order I should start with F's note written in April 1996 some two months after the birth. In evidence F and M asserted that F wrote the note and M read it and corrected a small part of it. In that note F wrote that the parents saw no consultant antenatally. In relation to the birth the parents complained that they were not told that induction would be painful. They recorded that M's waters broke at about 9:00 o'clock (for twin 1) and the contractions became strong. The pain was so much that M requested an EA (despite her earlier expressed objection thereto) but only allowed to the clinicians "one try". They complained that several attempts were made but that because M was only 5 foot 2 inches tall and had a fundus over 48

centimetres large there was no chance that she could arch her back sufficiently. They asserted that at that time they requested a CS. They were told that there were "*no medical grounds for a caesarean section"*. The way the note is written is confusing as to the timing for that asserted request because it goes on to explain the reason why they made the request was because of a historic retained placenta; exhaustion and the fact that M's cervix was closing. However the cervix was not closing at the time, it was closing after twin 1's birth at a later time when CS was requested and recorded on the video (at 00.26 hours on 3.2.96). Quite the opposite was occurring at that time, the cervix was opening preparatory to the birth of the first twin. The note goes on then to deal with the birth of Bethany. It then recorded that the cervix was closing and the Claimant's head was high and contractions were bad. The parents then asserted that CS was *again* requested (in fact one request is evidenced by the video: at 00.26.) F's note records that the Doctor said that perhaps it would be time to consider CS and then left the room. The note records that after that M was taken to theatre but there was no FHR monitor taken with them. The note records that F was then excluded from the theatre. The questions the parents asked in the note were: (a) Why did it take so long before the CS? (b) How was the Claimant's heart rate monitored? (c) When was the last time the Claimant's heart was heard beating? The note went backwards in time to deal with the antenatal period and recorded that the parents had been told by the midwife in Frome weekly that they *would need a CS*. They asserted that all through her late pregnancy M had been told a CS *was an option*. They complained that having been told this it was not provided when she needed one. The note went on to deal with the AN meeting on the 30th of January 1996 and asserted that M had said to the Doctor that she did not want an ARM because it had stopped her previous pregnancy. The Doctor responded *"you would rather have your waters broken than a caesarean section"* and M responded "*no I would rather have a caesarean section*" and the Doctor laughed at M.

93. The Claimant has disclosed her Legal Aid Statement of Case dated 1999. In that it was asserted by the parents through their lawyers that three days before her delivery M indicated she wanted a CS. That assertion appears to relate to the 30th of January 1996. It matches the assertion made in F's April 1996 note. The Statement of Case went on to assert that M had been told by a midwife at Frome that she would have a CS at least for twin two. The Statement of Case asserted that M was admitted to hospital for an "induction". The Statement of Case criticised the attending obstetrician as being a "junior doctor". The parents alleged that during labour Doctor Tristram was out of the room for 15 to 20 minutes talking with her consultant before returning (in fact it was a minimum of 7 minutes according to the video which stopped at 00.34). They complained that M was taken to theatre for an ARM not a CS and that the monitor for the fetal heart rate was forgotten on the way. The lawyers sought legal aid on the grounds of the *very long* delay before the CS.

94. The Claimant has disclosed a solicitor's note of a meeting with F made at an undated time around 2001 in which the parents accepted that M agreed to an IOL the week before the birth. F repeated the allegation that on the 30th of January 1996 M had told the Doctor she would rather have a CS but the Doctor ignored her. It repeated the assertion that M requested a CS after the failed EA attempt. F alleged that the midwives seemed to be making the decisions not the doctors.

M's evidence

95. M's witness statement was signed in February 2021. It stood as her evidence in chief. Her evidence was that since the 1981 pregnancy, due to her lack of control she felt like she had been raped. She had always thought that the ineffective EA and the ARM in 1981 had killed her baby. In relation to the 1996 birth M recalled telling the community midwife at the GP surgery in Frome that she *wanted a CS*. She was 100% sure that the midwife wrote it in her notes. M attested in her witness statement that she did not see "*a Doctor*" throughout her pregnancy. She told the midwife she did not want an ARM or an EA. As for the attendance on the 30th of January 1996 M asserted the clinic was very busy and she had to wait a long time. She had a scan. The witness statement is wholly silent about the rest of that clinic attendance. It goes on to deal with attending the hospital for IOL on the 2nd of February 1996. M recalled telling the midwife after her arrival that *she wanted a CS* (this was not recorded in the notes). The response she recalled was the midwife saying "*you've had babies before you'll be fine".* M recollected asking for an EA when the pain became bad and the EA failing (this matches the medical notes). M complained that there was no discussion during her pregnancy about the additional risks to the second twin. M asserted that she felt very let down by the choices made by the medical staff without her involvement. Jumping to the period after Bethany's birth M recalled the Doctor leaving the room and the midwives immediately putting her legs in stirrups. This was without her permission (this was recorded on the video). The witness statement finished with the assertion that if M had been given information about the risks associated with twins and modes of delivery she would have chosen CS. She repeated her assertion that she never had the opportunity to discuss CS *"with a Doctor"* and that she had told a midwife she wanted a CS but she never saw an obstetrician.

96. Having put the facts in chronological order above it is readily apparent that M's recollection of never seeing a Doctor or an obstetrician is not right. She saw Doctor Tristram twice and she saw Doctor Dunlop once and she also saw Doctor Robson. In evidence M admitted this.

97. In her second witness statement dated May 2022 M asserted that had she had a proper discussion with Doctor Dunlop on the 30th of January 1996 she would have wanted a CS. In her third witness statement dated the 12th of May 2022 M explained how F's note of the April 1996 meeting had become lost in the handover between previous solicitors and her current lawyers and her move to New Zealand. She accepted that

she probably read the note when it was written and certainly corrected one part of it. She explained her earlier witness statement. She asserted that when she had attested that she had not seen "a Doctor" what she meant was she had not seen "a consultant".

98. M gave evidence over video link from New Zealand. In cross examination she accepted that during her two pregnancies after the traumatic stillbirth she did change her mind as a result of medical counselling on: (1) which hospital she would give birth in and (2) accepting an ARM despite her concerns, although M asserted she was not aware that ARM was used for her 1990 labour. When challenged on the lack of any note in the AN records of any request for a CSMR she relied on the note made on 19.1.1996 which stated: "If" M has CS she would like to be sterilised. In my judgment the use of the word "if" undermines her evidence that she requested CS for the birth of both twins. In addition the note records that M would "prefer natural childbirth" which is the opposite of CS. I do not accept M's evidence on this.

99. M accepted that she agreed to NVD on 30.11.1995 to take place at Bath. When challenged on her assertion that she did not see a Doctor during her AN care she sought to distinguish between a Doctor and a consultant asserting that by using the word "Doctor" she meant "consultant". I did not find that distinction persuasive. Later M explained that she did not know the difference between an SHO, a registrar and a consultant. She recognised doctors because they wore "white coats". That evidence lacked credibility in my judgment. I find that she knew when she was meeting doctors in the antenatal period.

100. When challenged on the lack of any mention in her witness statement of her evidence of what happened on 19.1.1996, M explained that she had felt horrendous over the years since the birth and had not been prepared to think about it. Her recollection of the home visit on that date by the midwife was that the midwife sat on the carpet in her home and told her that "*I feel you should have a CS*" and wrote a note in the AN records. When challenged on paragraph 21 of the original POC M became tired (it was late at night in New Zealand). That paragraph contained the assertion that M was told CS was "not an option". M asserted that she was told "CS was an option" but not by the people who mattered.

101. In relation to the AN clinic visit at Bath hospital on 30.1.1996 M accepted that during that clinic she agreed to NVD using IOL on Doctor Dunlop's advice. When challenged about the lack of any assertion in her first witness statement that she requested a CS at that meeting M accepted her primary witness statement in support of the claim had omitted that assertion. She sought to explain that omission by her being not good at paperwork. In the light of the fact that M was represented by lawyers in February 2021 and that the POC had been served a year before, that omission was a serious gap in the Claimant's case on a crucial factual issue pleaded in the served POC. M also accepted that she had a membrane sweep during that clinic. M

could not explain how or why she would have agreed to that if she had requested CS and was determined to have CS despite the advice she had been given. M's response was that she had two choices: natural labour or CS and she agreed to IOL. M said CS was not "offered" to her.

102. M was challenged about events on arrival at hospital. M asserted that she did ask for CS but the nurses said there was no "Doctor about". When shown the draft POC from April 2018 in which the Claimant asserted that the plan on arrival was IOL M could not explain the conflict between her live evidence and the way the case was pleaded earlier. Defence counsel put to M that despite her concerns over EA clearly noted in the AN records she herself requested EA at 22.00 hours. M accepted that she had.

103. I found M to be a witness honestly doing her very best to recall events long ago with a memory which was degraded by trauma, strong emotion and time. Where her evidence conflicts with the medical notes I will generally prefer the medical notes. However in relation to the crucial meeting on 30.1.1996 I accept M's evidence that a discussion of CS took place with Doctor Dunlop in the context of the doctor advising M against CS and in favour of natural child birth and that M accepted the advice to go for IOL and NVD and then consented to having a membrane sweep. My detailed findings of fact are below.

F's evidence

104. F is the Claimant's litigation friend. For many of the 26 years during which the Claimant was seeking to bring a claim he carried the load because M was too hurt by the events to take any leading role.

105. F's witness statement was dated February 2021. He asserted that M had told him during her pregnancy that she wanted a CS because she felt unable to deliver twins normally. He asserted the local midwife from Frome recorded this in AN notes on a separate sheet and he saw this himself and that Mrs Tonge saw this note at the April 1996 meeting. He was suspicious of how that page could have disappeared. He supported M in her assertion that she did not want an ARM or an EA. In relation to the Claimant's birth he asserted that the Doctor scanned using ultrasound and was surprised how high the baby's head was. He was not surprised because he had been told from the scan days before that the head was high. He recalled Doctor Tristram saying the cervix was closing. He remembered that M had "begged for" a CS because she was worn out. (If this is compared with the video recording in fact it was F who said they both wanted CS when M said she was tired and wanted the baby "out"). He asserted that when Doctor Tristram left the delivery room the midwife put M's legs in stirrups because the midwife did not wish to be defeated. He asserted that when M was being transferred to theatre the clinicians forgot the monitor. He asserted that Doctor Tristram had been away for 20 minutes for her first discussion with the consultant (starting at 00.27 on the video). He asserted that on his video there were

times when the Claimant's heartbeat was "not audible". He was excluded from the theatre so could not give evidence about what happened there. He asserted that after the birth he heard somebody say they had a "bleeder". This recollection is backed up by the evidence from Doctor Tristram who confirmed brisk bleeding did it take place when the uterus was opened.

106. In his second witness statement F relied on his handwritten note made prior to a meeting with Mrs Tonge in April 1996. In addition he asserted that he was present at the meeting with Doctor Dunlop on the 30th of January 1996 and that is why he wrote in the note that when M requested a CS rather than an ARM Doctor Dunlop laughed, because that is what he heard and saw.

107. In evidence F explained that M and F had separated 5 years ago. The Claimant is now living independently from her parents with carer support. As she approached the age of 21 she had wished the legal case to be pursued. F accepted he had reviewed the draft Particulars of Claim (POC) sent in April 2018. He accepted the draft POC contained no assertion of any request for a CS in the antenatal period or at any time in hospital before Doctor Tristram left the delivery room at 00.27 hours. He accepted the draft POC asserted that M entered hospital *for* an IOL. He stuck to the assertion that a midwife had said to M that M would be able to have a CS.

108. In cross examination he accepted that the factual assertion of M requesting a CS and being told it was "*not an option"* in paragraph 21 of the served POC was not true. F accepted that in the re-amended POC the assertion that a midwife told M that CS was not an option was deleted and instead the assertion was made that M asked for a CS and this request was written down on a separate piece of paper in the AN notes and subsequently has disappeared. He was not present at the 9th or 19th January 1996 check-ups. F was present at the 30.1.1996 clinic. He avoided the question put to him that the membranes sweep was consented to and would not have been consonant with a request for a CS but would be with a decision for IOL. F agreed that M had agreed to IOL for the birth plan. In relation to the video F asserted that he interpreted what he said just before Doctor Tristram left the room as specifically asking for a CS. F accepted that his written evidence that the earlier scan showed that the second twin was high was mistaken when he was shown the ultrasound report of that scan.

109. I found F to be an honest and deeply caring man who has been weighed down by the weight of the litigation for over 20 years and the separation from M. His recollection has changed over those years so that only a few parts of his memory remain undamaged. I find that the April 1996 note was his best recollection two months after the traumatic events of early February but I find that even that note is not wholly factually accurate.

The treating clinicians' evidence

110. **Doctor Amanda Tristram** gave evidence by video from New Zealand where by coincidence she also lives. She confirmed her witness statement dated September 2020. She is a consultant obstetrician and gynaecologist focussing on cancer. She qualified as a Doctor in 1991 and completed her specialist training in 2005. At the relevant time she was a senior house officer in Bath and from August 1995 she had worked on the registrar rota. She had two years of experience in obstetrics and gynaecology. She had six months experience acting as a registrar before the events.

111. Doctor Tristram had no recollection of the events but she had seen her medical notes and the parents' video. Her evidence from her witness statement was as follows. She was the unsupervised registrar on duty on the relevant Saturday night. She wrote up her notes at 03.10 because she had needed to deal with other patients after completing the Claimant's CS.

112. She first saw M at 23.55 hours on Saturday 2nd of February. She noted that the anaesthetist had been unable to site the EA. She noted the CTG trace as satisfactory for both twins. She noted the birth plan was NVD. The midwife delivered the first twin. Doctor Tristram was not involved with that.

113. At 00.10 she was waiting for renewed maternal contractions. The Claimant was lying in a cephalic position. She started Syntocinon to stimulate contractions. By 00.15 the presenting part was still high and she carried out an ultrasound to confirm the position was cephalic. She increased the Syntocinon. By 00.20 she carried out a VE and the cervix was 8 cm dilated, not well applied and the vertex was not in the pelvis. She again increased the Syntocinon to stimulate contractions. M was pushing. By 00.30 Doctor Tristram carried out a repeat VE and the vertex was still not descended into the pelvis (this timing is from the notes, I shall make findings on the timings later). The cervix was less dilated at 7 cm and poorly applied. She noted M would need an ARM in theatre and described this as her next step and her standard procedure in 1996.

114. Doctor Tristram then left the delivery room to talk to the consultant and went to the central station or the office a few seconds away and called Mr Dunster and then Mr. Porter and then Mr Dunster called back while she was speaking to Mr. Porter. Mr Dunster agreed with her recommendation for ARM in theatre. She explained that if there was any problem she could then do a CS. She wrote that the evidence was that the CTG trace was satisfactory. The baseline was around 130 bpm and was variable with some decelerations with contractions and accelerations. She then returned to the delivery suite and explained the situation to M & F and recommended an ARM. She accepted that the note recorded that M requested CS under GA. She explained that she *"would have wanted to respect*" M's wishes but also would have wanted the best possible outcome and it was her view and the consultant's view that ARM was the best way forward. ARM was more simple and likely to lead to a faster delivery than CS. Doctor Tristram asserted that an agreement was reached to transfer to theatre

where she would reassess. The transfer took place and she did reassess at 00.45. The vertex was still high so intervention was required. NVD was not occurring. She discussed ARM again but M refused. She went and had a second discussion with Mr Dunster who agreed she should carry out a CS. She returned and told M that CS was not "their first option" but she agreed to the CS because M had refused ARM. In her witness statement she then stated that a consent form was signed after Doctor Tristram explained to M the operation and the risks. As I shall find below she changed her evidence on when the consent occurred. In addition her timings were wrong as the video showed. I also highlight here the approach taken by Doctor Tristram which was not to accept M's request for a CS made in the delivery suite. Further the evidence on when the consent form was signed is wrong in my judgment. It cannot have been signed after M had refused ARM because the consent was expressly for ARM and CS.

115. Doctor Tristram wrote in her witness statement that the FHR was noted at 00.45 as 135 BPM. It was likely they used a hand held Doppler device with the midwife holding it. Explaining the surgical procedure Doctor Tristram wrote that she would have scrubbed up and the anaesthetist was present. Doctor Tristram was unable to record the FHR before starting the operation possibly due to the position of the baby, however the midwife recorded 138 BMP at 00.52 probably just after Doctor Tristram had tried. The baby was delivered at 01.02 according to Doctor Tristram (this timing must have been taken from the anaesthetic notes) and the cord was wrapped around the Claimant's neck. Doctor Tristram wrote in the notes that there was no obvious explanation for the baby's poor condition because the FHR monitoring did not indicate any problems. M had bled a lot and required transfusions. On the Sunday morning (the 4th) Doctor Tristram saw M. She had suffered vomiting, distension, pain and ileus following the CS.

116. Doctor Tristram considered that she had acted without undue delay and that her decisions were supported by her consultant. On reflection she could see no reason to suspect fetal distress from the notes. In a second witness statement dated May 2022 Doctor Tristram explained that she had seen M twice antenatally on the 9th and the 16th of January 1996.

117. In live evidence, when challenged on her experience, Doctor Tristram considered that she had sufficient experience to deal with the birth of twins but accepted she was at the least experienced end of the scale. She had previously delivered many twins vaginally, some in the breech position. She accepted that the relevant events occurred at the weekend in the middle of the night when she was unsupervised and that it was a difficult delivery. When asked whether she had done a caesarean for a second twin's birth before and in particular whether she had carried out an IPV (Internal Podalic Version) her evidence was that she probably would have done one unsupervised. She accepted that IPV had to be done with EA or GA. When asked about M's clearly expressed desire not to have an ARM Doctor Tristram explained the difference

between a high ARM a low ARM. A low ARM is far easier and involves simply breaking the amniotic sac when the head is pressing on the cervix and low in the pelvis to facilitate birth. A high ARM with a second twin is more difficult and involves the insertion of a metal implement with a hook on it higher into the uterus to reach the high baby to break the amniotic sack. Then the obstetrician has to use her hand or fingers to control the release of the amniotic liquor so that it does not all come out in a flood leading to an unwanted change in position of the fetus or cord prolapse. Doctor Tristram therefore accepted that M's desire not to have an ARM or an EA was a relevant factor to her labour plans. When questioned on the CTG trace she explained that the first marking of LOC at 00.04 was "an interpretation at the time" and she rejected this being a deceleration. When challenged about the sound that the CTG would have been making during the asserted deceleration Doctor Tristram could not answer. When shown the joint obstetric report which identified (on Mr Forbes' evidence) decelerations on four occasions between midnight and 00.20 Doctor Tristram considered the first three asserted decelerations to be LOCs but accepted that the third asserted deceleration at 00.17 "*might show deceleration*". She relied on what she thought was an acceleration at 00.19. When challenged to explain why she had not provided evidence in her witness statement in relation to the specific allegation of negligence set out in the POC that she had failed to recognise the decelerations in the FHR between midnight and 00.20 Doctor Tristram could not explain that. She considered that decelerations in the second stage of labour were not necessarily abnormal. She explained she was no longer practicing obstetrics and would not try and reinterpret the CTG now, so many years after the event. When challenged again on the audible nature of the alleged decelerations Doctor Tristram considered they were not necessarily matters for concern. Doctor Tristram accepted that because she had no concerns about the asserted decelerations she most likely would not have raised any concerns with the consultant.

118. I did not find Doctor Tristram's evidence on the decelerations satisfactory. She herself had written they were decelerations in the notes and yet would not accept that they were in evidence.

119. Doctor Tristram considered that for twins the interval between the birth of twin one and twin two in 1996 was a relevant matter. If the second twin was not delivered after 30 minutes she considered she needed to do "something else". She accepted that she was interested in the speed of the birth of the Claimant. She accepted that M's cervix was closing, as shown by her two VE's, the Claimant's head remained high and the clock was ticking. She agreed that by 00.20 there were only three medical options for delivery: spontaneous NVD, ARM and CS. She accepted that the situation had the potential to turn risky. She explained that there was a risk that she would have to carry out a high, controlled ARM.

120. Doctor Tristram did not explain in her witness statement the difference between a simple low ARM and a more difficult high controlled ARM. When pressed Doctor Tristram stated that she had probably not carried out a high controlled ARM for a second twin previously. But she explained that a high controlled ARM for a single baby was the same thing. Doctor Tristram accepted that she was in a novel and challenging situation with the second twin's head high, the cervix contracting and the head not descending, which would be different from a birth of a single child.

121. When challenged that she had negligently failed to send M to theatre at 00.27 when she left to speak to the consultant for the first time she asserted that it was likely that she did speak to medical and nursing staff outside the delivery room to organise a transfer to theatre whilst she was out of the room. Doctor Tristram also stated in cross examination that the midwives inside the delivery room would not have known what was going on outside the delivery room and stated that there was no reason for her to tell the midwives what was going on before she left.

122. I did not find Doctor Tristram's evidence on her actions before she left the delivery room at 00.27 satisfactory. The video shows she used the words "*slowly*" yet she sought to persuade the Court that she was aware of the need for speed. She did not tell the midwives to get ready for theatre before she left the room yet she sought to persuade the Court that she had decided to transfer M to theatre. Before she left F told her that the parents had always wanted CS but she did not discuss the parents' wishes before she left the room, yet she was going to make a forward plan with her consultant. I find that she left with only half the story to get approval from her "boss" on the way forwards and without reference to the parents' wishes.

123. The factual assertion which Doctor Tristram made for the first time in evidence about issuing instructions to prepare for theatre whilst she was out of the delivery suite was not in her witness statement, not in the medical notes and was not pleaded. In addition a tell tale against this evidence was that the video shows that the midwives in the delivery suite were continuing to persuade M to push and were putting M's legs into stirrups. This is not really consistent with Doctor Tristram's asserted decision and instructions to transfer M to theatre. I consider that Doctor Tristram would have instructed the midwives to get ready to transfer to theatre if that was the plan that she was going to discuss with her consultant and did implement immediately that she left the room before she went to discuss it with Mr Dunster. On balance I do not accept Doctor Tristram's evidence on this factual issue. I consider that Doctor Tristram believed when giving evidence that she had to fill in a gap and that she did so.

124. Doctor Tristram could not recall the conversation with Mr Dunster. It was put to her that she did not tell Mr Dunster that M had chosen to have no ARM and no EA. All Doctor Tristram could say is that she would have expected to have told him that. She accepted that the video showed that there was no discussion of the risks and benefits

of the birth alternatives (NVD, ARM or CS) with M or F before she left to have the discussion with the consultant. There was no discussion of the increased difficulty of NVD in the light of M's aversion to ARM and the absence of EA. Doctor Tristram explained that she wished to discuss the alternatives with the consultant first before discussing them with M. It was put to Doctor Tristram that she initiated a plan with the consultant without having first discussed it with M and therefore she could not pass on M's wishes to the consultant to feed into the discussion. She accepted it would certainly have been relevant to tell the consultant of M's wishes. She accepted that if she had discussed matters with M and F and sought their choices or wishes before 00.27 then she would have passed on M's wishes to the consultant in the discussion. It was put to Doctor Tristram that matters were delayed because she had failed to consult with M before deciding the birth plan with the consultant. I was unimpressed with her answers.

125. In relation to events in theatre Doctor Tristram did not recall or know from the notes what was happening between 00.45 and 00.52. She did carry out a reassessment by VE in theatre but that would not have taken long. The snapshot FHR reading of 138 BPM would have been taken by the midwife. No CTG was attached. She did not know how long the phone call to Mr Dunster would have taken. Doctor Tristram accepted that there was a continuing risk to the baby because she was not being monitored by CTG. She accepted that the baby had been unmonitored since 00.40 hours. She did not accept that there was no information about the FHR. Doctor Tristram relied on the Doppler FHR readings. When challenged by Claimant's counsel to the effect that she did not know what was going on with the FHR after the CTG was removed and only had "snapshots" her response was unnecessarily combative. When asked whether she would have done things differently if she had known that the FHR from around 00.46 was bradycardic Doctor Tristram's response was she *"might have done things faster*". She accepted that it could have taken 6 minutes from induction of anaesthetic to birth. She accepted that in this case 13 minutes from induction of anaesthetic to birth was "longer than normal". She explained that there was significant blood loss on opening the uterus which may have delayed her because she needed to see what she was doing.

126. Doctor Tristram was challenged to explain the insertion of a line and a half of handwriting in her medical notes (made at 03.10) by which she had written that CS was agreed but that her preference was for ARM. She did not agree that this was written to appear that she had made a concession to do a CS at M's request.

127. In re-examination Doctor Tristram stated that the deceleration at 00.16 - 00.17 was probably a deceleration but considered that it was not concerning because there was a subsequent acceleration. Doctor Tristram explained the conversation with the parents after the second VE but before she left the delivery suite. She was hoping the baby's head would come down, Syntocinon had only been turned up to its maximum level for

a short period of time, she was not worried and there was no "massive panic" to get the baby out. She explained that a conversation at that time with M might have taken quite a long time because someone who refuses treatment needs full explanations of the consequences.

128. Doctor Tristram explained the FHR readings taken in theatre. The Doppler hand held device makes an audible noise. She said it should not be difficult to find the FHR with it. She could not explain how the FHR could have been 135 and 138 BPM in theatre when the baby had suffered severe brain damage and so was probably in bradycardia at that time. She indicated that the consent form was probably signed in the delivery suite not in theatre (contradicting her earlier evidence).

129. My assessment of Doctor Tristram is that she is a highly intelligent, well motivated and professional person who was trying to assist the Court but who felt vulnerable over the long time it took to elicit and accord with M's and F's requests for a CS and her decision to aim for ARM despite the clear request for CS evidenced by the video and the notes. She was also defensive on timing and filled in a crucial gap on the timing of the instructions she gave to go to theatre in a way which disclosed her own disquiet about it.

130. **Doctor Dunlop**. Doctor Dunlop is a retired consultant obstetrician and gynaecologist. She confirmed the contents of her witness statement dated January 2021. She worked at the RUH in Bath from 2001 initially as a locum and then as a consultant from 2002. She had no independent recollection of events. In relation to the antenatal appointment on the 30th of January 1996 she stated that obstetricians at the hospital would not routinely have offered ECS for twins without a clinical reason for doing so: for instance the twins heads not being in a cephalic position or a previous CS. However M's twins were head down and M had not had a previous CS. She asserted there was no discussion of CS in the antenatal records. She asserted that if M had asked a midwife for a CS it would have been routine practice to record this request and M would definitely have been seen by a Doctor for discussion. She asserted that if M had asked her for a CSMR during the clinic with her she would have noted it. Likewise if M had refused IOL she would have noted that. If M had requested CSMR Doctor Dunlop asserted she would certainly have discussed this and how she wanted to be managed. After discussion if M still wanted a CSMR Doctor Dunlop would have discussed this with Mrs Tonge and if Mrs Tonge had been in agreement Doctor Dunlop would have booked M for that procedure and not for IOL.

131. In her second witness statement dated May 2022 Doctor Dunlop dealt with the Claimant's allegation that ECS should have been offered. She pointed out Doctor Robson's note made on 30.11.1995 which recorded the plan was NVD but to avoid IOL and that M preferred no EA. She went on to comment further on the clinic visit on 30th January 1996. She raised the fact that she carried out a VE and a sweep of the

membranes. She asserted she would have obtained consent for the procedures. These could have brought on labour imminently so Doctor Dunlop considered that M must have been keen to deliver normally. She asserted that she may have said it was necessary to break the membranes of twin two. She denied that it was unreasonable not to offer ECS. She relied on the fact that M had said she wished minimal intervention and had previously had NVDs. She denied that M had raised CSMR but reasserted that if M had done so Doctor Dunlop would have encouraged induction instead.

132. In her third witness statement dated June 2022 Doctor Dunlop further amplified the visit on the 30th of January 1996 asserting that a chaperone would have been present for the membrane sweep. She asserted that M did not have to deliver at 38 weeks but that the rash made M ready to deliver. The IOL was booked for three days later. She denied laughing at M and asserted that she never laughed at patients. She asserted the midwife who must have been present would have complained had she done so. She made a new assertion that if M had requested CS she would have asked M to see Mrs Tonge.

133. In her live evidence Doctor Dunlop accepted that Mrs Tonge always offered delivery at 38 weeks for twins. She accepted that in 1996 her notes were much shorter than they were later in her practice. She could not recall whether she was aware of the entry dated 19th January 1996 which recorded that M wished no ARM or EA and which was underlined with asterisks. She expected that she had read it. She accepted it was unusual to see asterisks. She asserted she would have discussed induction with M and explained using Prostaglandin. When asked why she did not raise ARM she suggested she might have done. When asked why she made no note of doing so she replied that neither refusal of ARM or EA was a reason not to do an induction. She asserted that if M had asked for CS she would have referred M to Mrs Tonge. She stated that 1996 she would have counselled M to have an induction. In relation to the F's note dated April 1996 and the assertion that all through the antenatal period M had been told that CS was an option Doctor Dunlop accepted this as likely. She asserted that if M had raised with midwives that she wanted a CS the midwives would have noted it and there would have been a discussion with obstetricians. She asserted that CS was not the preferred birth route and that it was regarded as a consultant decision. Claimant's counsel asked whether Doctor Dunlop would have noted M's request for a CSMR if after counselling by Doctor Dunlop M had eventually agreed to an IOL. Doctor Dunlop was not sure what she would have done in those circumstances. When asked if M had said she did not wish and ARM would she have noted that, she struggled to answer but eventually stated that the notes had already recorded M did not wish an ARM but it was possible that she would not have written that down. Questioned on why her note made no mention of M's previously noted aversion to ARM and EA she gave evidence that they may have discussed that and she may have persuaded M and reassured her. NVD was the normal method for a mother with twins

who had previously had normal vaginal deliveries. In relation to the risks for the second twin Doctor Dunlop accepted that IPV would possibly be needed and stated she had done those as an SHO mainly with epidurals. She accepted IPV is difficult and that GA might be necessary. She accepted that ARM was a standard procedure involved in IOL. When it was put to Doctor Dunlop that if M did not want an ARM or an EA that would merit discussion in the context of induced labour Doctor Dunlop agreed. She accepted that it was possible that M raised not wanting ARM or EA and she had failed to write it down. She explained that she believed NVD with minimal intervention was what M wanted. When pressed on whether she had said *"you would rather have your waters broken than a CS"* Doctor Dunlop denied that that was the sort of language she would have used. She asserted she did not think they had discussed CS but if it had been raised she would have reassured M, explained the plan for IOL and if M agreed then she would have proceeded. Doctor Dunlop denied laughing at M during any discussion in relation to CS. She explained that the only reason to do a membrane sweep was to induce labour. Doctor Dunlop accepted that if she had discussed CS the discussion would have covered points 1 to 8 on the 14 point list in Mr Forbes' report. She did not think that she would have discussed points 10 to 14 (points 10-14 relate to CS and the risk and benefits compared to NVD). She asserted that she could have said that it would be better to avoid a CS if they could. She repeated that she would not have offered ECS in the advice she would have given about IOL and labour. If it had been raised she would have counselled against it and would have wanted a discussion with Mrs Tonge.

134. In re examination Doctor Dunlop pointed out that the only entry in the AN records about CS used the word "if" in relation to CS. In relation to the 30th of January 1996 Doctor Dunlop stated that at the end of the consultation they had a plan for IOL but if M had been unhappy about the plan or still talking of CSMR she would have booked M to come to hospital at 38 weeks and arranged for her to see a consultant that day to discuss CS. Under further questioning from Claimant's counsel Doctor Dunlop accepted that it was common practice to use ARM and EA for twins in particular for the second twin during induction of labour.

135. I was impressed by Doctor Dunlop as an honest witness doing her best to assist the Court in what she probably would have done 26 years ago. However she accepted that her note taking back then was not full and in cross examination accepted that quite a lot of what she may have discussed with M would not have been noted. This means that on the key factual issue relating to 30.1.1996 I will need to infer what what was said about CS if I accept the parents' evidence that they did raise it with her.

136. **Mr Richard Porter** was the director of maternity services at Bath hospital in 1996 and had been so since 1991. He he is a consultant obstetrician and gynaecologist. He confirmed his witness statement dated February 2021. In 1996 none of the consultants at Bath hospital would offer ECS for twins unless there was a medical reason to do so

and there was no reason to do so for M. He stated that if M has asked a Doctor for CSMR she would have been counselled in relation to the benefits and the risks and the doctors would have expressed a strong preference for NVD. If M had persisted Mr Porter said the hospital would have agreed.

137. In his live evidence he pointed out that at Bath they had considerably fewer staff per birth than at Bristol. They created acting registrars to assist. He accepted that Doctor Tristram had a challenging role at the weekend unsupervised with her experience. In relation to the involvement he had with M's 1990 birth he gave evidence that the hospital and the local GPs had a trigger list for birth at Bath hospital rather than locally. He would have allowed M to choose but would have advised her in 1990 to have her birth at Bath and she had eventually agreed to do so.

138. Mr Porter was not asked what he would have advised on the phone at night on 3.2.1996 during the conversation he was involved in with Mr Dunster and Doctor Tristram if Doctor Tristram had disclosed to them M's objections to ARM and EA and the parents' desire for a CS which F expressed around 00.26 hours just before the discussion.

139. **Mr Dunster** was the consultant on call on 3.2.1996. He has sadly passed away. His witness statement was signed in May 2020. He could not recall the events. He read the notes and the pleaded allegations. He says he would have come into the hospital had Doctor Tristram asked him to. He considered Doctor Tristram to be a very competent Doctor. He says that his advice in the phone call would "*immediately have been to perform ARM accelerating delivery".* He would have expected the baby to have been born within 10-15 minutes after ARM. He would have expected that to have taken place in theatre so that with a high baby if there was change of presentation or cord prolapse a CS could be performed. He stated that he would not have advised CS because ARM would have been more likely to have triggered delivery faster and would have avoided the risks of emergency CS for M. He also stated that if he had been told about M's aversion to ARM he would not have changed his view because no mother in his experience had previously refused ARM in favour of CS.

140. Importantly in my judgment he was not asked or did not give evidence in his witness statement about what he would have advised had he been informed by Doctor Tristram that EA had been tried and had failed, that M objected to ARM and importantly that M and F had chosen a CS. So with the baby high in the uterus, an ARM in theatre would have involved a high controlled procedure, not a low easy procedure and would have involved the risk of the need for Doctor Tristram to perform an IPV which would have had to be done under GA because EA was not an option. I consider those oversights to be relevant as I shall explain below.

141. **Mrs Tonge** is a retired consultant obstetrician and gynaecologist who worked at the RUH in Bath until 2012. She confirmed her witness statement dated July 2022. She had no clear recollection of events. In relation to the meeting with the parents in April 1996 she said she would usually have made notes and written to the GP and that it was odd that no notes of this meeting had been found. She noted the doctors in her clinic had seen M on the 9th, 16th and 30th of January 1996. She accepted that by definition a twin pregnancy was a high risk pregnancy. She noted that M had previously had successful vaginal deliveries and she asserted that there was no mandatory reason for a consultant to see her in the antenatal clinic. She accepted that short stature was an additional risk particularly when carrying twins. In relation to the allegation that ECS should have been offered antenatally or later she considered that there was no reason to offer ECS. However if M had asked for CSMR the standard practice was to refer M to Mrs Tonge and she would have counselled her against CS. She would have counselled that there was no reason to think NVD would not be successful. As to M's concerns about ARM and EA, Mrs Tonge considered that these would not have altered the plan for NVD. Mrs Tonge noted that the AN records showed that M wanted natural birth. In relation to Doctor Dunlop's clinic on the 30th of January 1996 Mrs Tonge would have expected Doctor Dunlop to have noted any request for CSMR and have referred M to her for discussion. Mrs Tonge considered Doctor Dunlop to have been meticulous. In her witness statement Mrs Tonge asserted that if M had been referred to her for discussion on CSMR it is unlikely she would have agreed to CS "there and then". She accepted that a proper discussion would have included most of the bullet points set out in Mr Forbes' report. She might have mentioned that it was not infrequent to manipulate the second twin to get a longitudinal lie. She asserted that if, after discussions with M, she still wanted CSMR she would have referred M on to a different consultant for a second opinion. In relation to the April 1996 meeting with the parents Mrs Tonge stated it would have been very unusual for a midwife to record a request for a CS on a separate sheet and she thinks she would have said that a midwife would have had no authority to grant such a request. She asserted that if M had raised with her concerns about EA she would have referred M onto anaesthetist for a discussion about EA. Obstetricians were not qualified to have that discussion. She denied ever having been investigated for misconduct.

142. In her live evidence Mrs Tonge informed the Court that there was a morbidity meeting at which the Claimant's birth was discussed. No notes of that meeting were made. However she read a note recording that the parents made complaints in May 1996 that they were dissatisfied about the failure of Doctor Tristram to carry out the CS earlier and to counsel them properly. She accepted that birth plan counselling had changed since 1996. She would have counselled for NVD not CS. She could not have offered ECS. However if M really wanted CSMR she could have had CS after having to pass through quite a few counselling hoops. She accepted that the approach was more "paternalistic back then" and that the attitude was that it was best for patients to conform to the Doctor's advice. However if a patient was stubborn or persistent in

wanting CSMR she would have referred the patient on for a second opinion but if the mother persisted she would eventually have agreed. Mrs Tonge accepted that in 1996 *"women did not have the same degree of choice"*. Mrs Tonge was as certain as she could be that M would have been counselled in clinic about NVD and IOL but not ECS unless she had asked for a CSMR.

143. On the April 1996 meeting in evidence Mrs Tonge accepted that pieces of paper were occasionally put into the AN notes by stapling.

144. Mrs Tonge also said that the front sheet of the labour ward notes may have been written by M's midwife (Margaret) to ensure the hospital were aware of M's concerns over ARM and EA. In relation to counselling for IOL and NVD the obstetrician would have had to discuss M's aversion to ARM and EA and send M to see an anaesthetist for discussion about the EA issue. She also said that if M had been sent for a second opinion it would have been to Mr Porter.

145. **Assessment of the Defendant's witnesses**. I was impressed by the honesty and professionalism of the Defendants' witnesses who I consider were doing their very best to assist the Court. As I have noted above their evidence mainly consisted of what they would have said or done because 26 years have passed since the events. What came through strongly was that the department led by Mr Porter was hierachical and had a standard approach and that was not to offer ECS to mothers with twins which were cephalic and healthy where the mother had previously given birth by NVD. As for Doctor Tristram's evidence, I shall return to that below.

Expert evidence

146. **Mr Forbes** is a consultant obstetrician and gynaecologist who gave evidence in support of the Claimant's case. His report was dated May 2021. After 10 years as an obstetrician in the RAF he was then a consultant at Hitchingbrooke hospital between 1991 and 2010. Between 2010 and 2018 he was a consultant uro-gynaecologist at Addenbrooke's Hospital in Cambridge. Then he retired although he continued medico-legal work and some private practice.

147. In his report he advised that it was standard practice in 1996 for twins to be born by NVD often with an EA. The EA was used inter alia to facilitate internal manoeuvring of the twins particularly twin two. Therefore M's refusal to have an ARM and an EA should have resulted in a formal discussion with the obstetricians about the management plan. The risk of death for twin two was four times as large as the risk for twin one. He asserted in his report that the CS rate was over 60% for twins and he also advised that the CS rate where twin 1 is delivered by NVD was 10% for twin 2. He advised that in 1996 there was no good evidence that ECS carried significant benefits over NVD in twin pregnancies. He advised that even without a maternal request for CS (CSMR) and without maternal aversion to ARM and EA there should

still have been a balanced discussion about NVD and ECS (paragraph 31), however in the next paragraph he said that he had thought long and hard about whether in 1996 he would have brought up the subject of ECS in discussion with a mother carrying twins. He answered his own question by stating that he was not sure he would have offered ECS as an alternative management option. He went on to advise that if M had brought up CS (so CSMR) he would have entered a balanced discussion of the risks and benefits of NVD and CSMR.

148. He found this practice troubling in retrospect in the light of the Supreme Court's judgment in *Montgomery v Lanarkshire Health Board* [2015] UKSC11, because it would mean that a full discussion would only take place with a mother who was proactive and not with a mother who was passive. He found that result to be inconsistent and impossible to reconcile with good medical practice.

149. Mr Forbes advised that in the case of M there were two additional relevant factors: an aversion to ARM and to EA, so a discussion should have been instigated in clinic on the 30th of January 1996 by Doctor Dunlop about the relative merits of NVD and ECS. He set out 14 bullet points in his report that should have been included in such a discussion which covered: that the Doctor would anticipate NVD with cephalic twins; that induction of labour at 38 weeks would be offered due to the discomfort caused by M's rash; induction would probably involve Prostin; induction would probably involve ARM and Oxytocin; EA would normally be recommended; if twin 1 is delivered by NVD the clinician would check twin 2's position; further Oxytocin might be needed for twin 2; ARM would normally be used for twin 2 when the head had descended into the pelvis; if twin 2 did not descend a vacuum extractor or CS might be used; the advantage of NVD would be avoiding a CS; the advantage of CS for both twins would be that it removed the doubts about the delivery of twin 2; the disadvantage of NVD would be the inability to guarantee normal delivery of both twins; the disadvantages of CS would be the need for GA and the slightly increased risk of excessive bleeding, infection and clots in the legs or lungs (points 1-8 concerned NVD, point 9-14 concerned CS).

150. In relation to the actual labour Mr Forbes noted that despite the use of Oxytocin M's cervix was closing because of lack of pressure from the fetal head. He questioned whether Doctor Tristram was sufficiently experienced to deal with the situation unsupervised. He advised that lack of supervision was not uncommon in 1996 for out of hours obstetrics. He relied on a book on labour written by *O'Connor* which advised that a consultant or senior registrar was required to be present at the delivery of twins.

151. He advised that at 00.20 hours Doctor Tristram was negligent to fail to arrange for M to be transferred to theatre just as she was leaving the delivery room and going to have a discussion with the consultant. This was because the Claimant's head was high in the pelvis, the cervix was closing and M did not wish an ARM or an EA and so there

were foreseeable risks emerging which required theatre. At that time there were only two realistic options. Both in Mr Forbes' opinion were medically reasonable: ARM in theatre or CS under GA. M had made it clear she did not want to ARM and EA had failed so these facts needed to be discussed with the consultant in a balanced way and with M who needed to be given an informed choice. He noted that the clinicians had no suspicion of fetal compromise although he asserted the clinician should have been suspicious at that time. He advised that the traditional interval between the birth of twins was viewed as no more than 30 minutes. He helpfully referred to the advice in various textbooks in relation to the intertwin interval. *Myles on "Midwifery"* (1989) recommended to midwives an interval of no more than 15-20 minutes (although the 1999 edition advised a 45 minute maximum interval). In the 1994 book by *James on "High Risk Obstetrics"* no intertwin interval limit was mentioned. In *O'Connor's* book published in 1996 the editors advised delivery preferably in under 15 minutes and certainly not more than 30 minutes but stated there was no good evidence in support of this view. In *Taylor and Fisk's* book published in 2000 they advised expedition after 30 minutes.

152. Mr Forbes gave the opinion that delivery should have been expedited after 30 minutes. He noted that most books discouraged ARM for a second twin which is lying high. Ventouse was not an option. He advised that M would not have been able to tolerate internal manoeuvres without an EA. He advised it was unrealistic to expect ARM to lead to descent and delivery and he questioned whether Mr Dunster was made aware of all of these facts. Mr Forbes advised that all reasonable obstetricians would certainly have offered CS at around 00.25 hours to this mother who did not wish ARM or EA, whose baby had not descended into the pelvis and whose cervix was contracting.

153. In relation to the CTG Mr Forbes advised the Court that the fetal monitoring by Doctor Tristram was inadequate. Decelerations were inappropriately labelled as "LOCs" and there was a misplaced lack of concern about the fetal condition. He identified decelerations at 00.05, 00.09 and a late and prolonged deceleration at 00.16-00.17.

154. Mr Forbes noted that the FHR after 00.20 was probably in fact the MHR and had better variability and accelerations with contractions. He advised that it was not a breach of duty to have failed to appreciate that the CTG was picking up the MHR after 00.20.

155. He noted that at 00.52 the FHR was 135 BPM which was inconsistent with the MHR recorded on the anaesthetic chart.

156. In relation to the time taken between induction of anaesthetic and delivery of the Claimant Mr Forbes advised that 13 minutes was far longer than was acceptable. He

considered that the incision should have been made before 00.55 and the delivery by 00.58 given that there was urgency to complete the delivery of twin 2. Mr Forbes proposed a reasonable timeline as follows:

156.0 The decision to transfer to theatre at 00.20.
156.1 M being on the table in the operating theatre theatre at 00.30.
156.2 Consent being obtained for CS at 00.35.
156.3 GA being induced at 00.38.
156.4 Skin cleaned at 00.40 incision at 00.43.
156.5 Delivery by 00.46.

He relied on various textbooks: *Jones* published in 1994 wrote that if foetal distress developed or the head failed to descend CS was necessary. *Williams* published in 1997 said the same thing. *M.O.E.T* published in 2003, stated that CS was mandated if there was a non-reassuring CTG or the cervix was closing after the birth of twin 1.

157. He pointed out that M's witness evidence was inconsistent in that she had forgotten she had seen doctors in the antenatal period. He disagreed with Doctor Tristram's witness statement where she said there had been no evidence of fetal distress. He criticised Mr Dunster for failing to be present to supervise the birth of the twins and over the decision to allow NVD to progress with the use of ARM which Mr Forbes considered was not supportable when twin 2's head was high and the cervix was closing. In relation to Mr Porter's witness statement he disagreed with the opinion that there was no obstetric indication for CS in this case.

158. **Medical texts provided by Mr Forbes.** *Samra et al* published an article in the British Journal of Obstetrics and Gynaecology 1990 called "*Caesarean Section for Twin Births*". The authors noted that vaginal birth for the first twin was no guarantee of safe passage for the second twin. Malposition and malpresentation of the second twin was a frequent occurrence. They noted that there is an increased risk of CS if the birth of the second twin is not managed appropriately and skilfully with an increasing trend in CS for the second twin. The paper was on a study covering 510 twin pregnancies. 184 (36%) were delivered by CS. 22 (4.3%) involved twin one being born by NVD and twin two by CS (combined method). Of the 22 combined method deliveries 21 were managed by registrars for the delivery of the second twin. In discussion the authors noted the indications for CS for second twins included: contracting cervix, lack of response to Oxytocin, uterine rupture, fetal distress, cord prolapse and transverse lie or high positioning. Interestingly the interval between births was recorded for the 22 combined method births and only three intervals were over 60 minutes: 61, 68 and 81 minutes. Most of the others lay between 20 minutes and 50 minutes.

159. *D.K. James* and others published the book *High Risk Pregnancy Management Options* in 1995. They wrote that the optimal mode of delivery in multiple pregnancies remained controversial. The mode of delivery is influenced by the presentation of the babies. Most obstetricians would recommend NVD for vertex-vertex babies. They advised that at least one experienced obstetrician, an anaesthetist, a paediatrician and a neonatal nurse should be in attendance for twin deliveries. After the NVD of the first twin they advised that an experienced obstetrician should assess the lie of the second twin which should be corrected to longitudinal either by external or internal version. Useful diagrams of Internal Podalic Version were provided.

160. *O'Connor* and others wrote a book in 1996 called the *Progress in Obstetrics and Gynaecology*. They noted that twin pregnancies are associated with four to fivefold increase in perinatal mortality compared with singletons. They noted that many authorities had advocated delivery by CS relying on papers by *Taylor* published in 1976 and another at footnote 8 from 1987 which I cannot read. They noted that since the mid 1970s there had been a dramatic increase in CS for twin deliveries. *Taylor et al* in 1976 had recommended CS for deliveries not presenting by the vertex. Others took an opposite view. *O'Connor* advised that the accepted view for many years had been that the birth to birth delivery interval should be less than 15 minutes and certainly not more than 30 minutes because of the risks of diminished placental perfusion after the birth of the first twin but *O'Connor* recited a study by *Rayburn et al* from 1984 and others and summarised these to show that perinatal mortality does not significantly increase with an increased delivery interval assuming adequate fetal monitoring. In a table summarising reports of CS as the birth method for twins at various hospitals the highest percentage was 15.5% and the lowest percentage was approximately 1%. The majority lay between 2% and 9%. In their conclusions the editors that advised that twins should be delivered in a fully equipped hospital and the mode of delivery should be based upon the presentation. Vertex-vertex babies should be allowed a trial of labour. CS may be advisable if there is any concern regarding fetal well-being in labour. They advised *it is important to discuss the labour and delivery with the parents during the antenatal period* explaining the need to *monitor the twins carefully* and the advantages of EA for the second twin and advising that if the FHR of the second twin becomes abnormal during the first stage of labour, delivery should be *expedited* by CS. They advised that, apart from a midwife, two obstetricians should be present if possible one of whom is experienced. They bemoaned how many registrars were left "out of hours" to deal with twin deliveries. They advised it was imperative and that an anaesthetist and paediatrician are also present. They advised that if twin 2's lie was longitudinal and the presentation cephalic obstetricians should wait until the head descends into the pelvis and perform ARM during a contraction. Then a *Copeland clip* should be applied to the vertex to ensure good FHR monitoring. They advised that NVD of twins remains a satisfying obstetric art.

161. *Williams et al* wrote the book *Managing Obstetrics* 20th edition published in 1997. The editors summarised that the birth to birth interval between twins was commonly cited to be safest if less than 30 minutes but relied on the *Rayburn* study in 1984 to conclude that if continuous FHR was employed good outcomes would be achieved if the interval was longer. The editors summarised that NVD was the appropriate plan for cephalic-cephalic twins. Internal Podalic Version involved ARM and then manipulation of the baby's body manually by the obstetrician in the uterus.

162. *Taylor and Fisk* published an article in October 2000 in the *Obstetrician and Gynaecologist* called *"Multiple pregnancies"*. They advised that the risk per pregnancy of producing a child with cerebral palsy is eight times greater in twin pregnancies than single pregnancies. In relation to mode of delivery they noted that in the UK the CS rate for twins had increased from 28% in the first five years of the 1980s to 42% in 1995 -1996. They advised that mode of delivery was decided on standard principles based on the presentation of the first twin, fetal growth and well-being. They advised that vaginal delivery was the preferred option in vertex-vertex presentations. They advised that women who had had a previous CS would best be delivered by repeat CS because of the greater risk of scar rupture. They advised that EA is recommended in all twin pregnancies delivering by NVD to facilitate intrauterine manoeuvres for delivery of the second twin which may be required urgently. *GA should be on standby* for any woman with twins who declines an epidural. In relation to the birth to birth interval they advised that in practice an interval of about 30 minutes is considered a reasonable time after which delivery should be expedited. However relying on the paper by *Rayburn* from 1984 they advised that provided babies are continuously monitored an increased birth to birth interval was not associated with poorer outcome.

163. The *Advanced Life Support in Obstetrics* course syllabus, 4th edition 2000, was produced by Mr Forbes. This document advised that the obstetric situation presents a greater range of challenges in multiple gestation and only the most skilled and confident obstetric providers should plan to attend twin deliveries without backup. The document advised that vertex-vertex presentations were the least complicated and labour may be allowed to progress to NVD of both infants. The editors advised that Oxytocin induction or augmentation, EA and other interventions were all acceptable with caution. They advised the interval between deliveries was not critical as long as the second fetus was "doing well". They advised on the procedure of Internal Podalic Version which they described as "*probably the most difficult and dangerous procedure permissible in modern obstetrics"*.

164. *M.O.E.T* published a course manual edited by *Johanson et al*. Mr Forbes produced the 2003 edition. The editors advised but there was no specific birth to birth time interval provided there is *continuous electronic FHR monitoring of twin two which is reassuring*.

165. I note that none of the medical texts produced by Mr Forbes recommends offering a mother with twins which are lying in a cephalic position an ECS as an alternative to NVD but some do recommend discussion of CS as the fallback for NVD.

166. **In his live evidence in chief Mr Forbes** advised that for M, who did not wish ARM or EA, ECS was a reasonable treatment option. However he advised that in 1996 he would not have volunteered ECS antenatally. He would have advised NVD if the babies' heads were down. He advised that ARM and EA were standard practice with twin deliveries which were being induced and that EA was extremely likely for the second twin and an obstetrician should have wanted to explore M's antipathy to those procedures. If a mother raised objections to those procedures Mr Forbes advised that he would still have counselled for NVD.

167. In relation to the CTG Mr Forbes advised that the annotation "LOC" was inappropriate because the trace clearly showed signal was being received from the bottom of the valleys as it rose up back to the baseline and that was not a loss of contact. He repeated his assertions that there were three decelerations and then a clear late deceleration at 00.17. However he accepted that a single late deceleration was not important. He also accepted that the 1st deceleration after the birth of the first twin was not one to worry about. The second twin would probably move and the movement would cause that.

168. In live evidence he repeated his view that the decision should have been taken to transfer M to theatre at 00.20 hours. At that time the trace was "not reassuring", the Claimant's head was high and not in the pelvis, the cervix was closing. Those matters would cause significant problems if the waters broke spontaneously and might lead to cord prolapse which would be an emergency. Mr Forbes advised that obstetricians would not do a high ARM with a second twin due to the possibility of sudden downward movement and cord prolapse, or movement to a transverse lie. All of which would be difficult situations. If a change of position occurred without an EA the obstetrician would not be able to carry out an Internal Podalic Version and only a GA would permit internal manipulation. GA could only be undertaken in theatre.

169. As to the delays in theatre Mr Forbes stated that he could not understand why it took 13 minutes after induction of anaesthesia for the birth to occur. He assumed the time for induction of anaesthesia was 00.50 from the anaesthetic chart. He would have expected delivery within four to six minutes. In relation to the snapshot readings of the FHR in theatre at 00.45 and 00.52 he advised that the figures at face value were reassuring as not showing bradycardia.

170. In cross examination Mr Forbes accepted that Doctor Tristram was sufficiently qualified to deal with the twin pregnancy having heard her live evidence although in

his unit he would not have allowed it. In relation to his evidence at paragraph 31 of his report that there was a 60% risk of CS for twin deliveries he was taken to his own literature and accepted that in fact the risk was 42% not 60%. He accepted that was an error. In relation to the figure of 10% of that cohort being CS for the second twin only he was taken to his own literature and accepted that the figure should have been 4.3%. He accepted that was also an error.

171. When questioned on the CTG he was quite firm in his opinion that it was inappropriate to regard the decelerations merely as LOCs. He separated out the labelling from the substance of the trace and explained that there could be 2 matters shown on the trace: a deceleration and a small loss of contact during that deceleration.

172. I stop here to make clear that I accept that evidence as both credible and reasonable taking into account all of the evidence I have heard.

173. Mr Forbes advised that the first deceleration was not a matter to be worried about in view of the likelihood of the second twin moving after the birth of the first. In relation to the second deceleration he accepted that it was equivocal. In relation to the third deceleration at around 00.17 he considered it was not reassuring. He accepted that the trace between 00.20 and 00.40 was reassuring.

174. He was taken to the April 2018 draft particulars of claim (POC) and accepted that the drafting was probably based on a draft report from himself. He accepted that there was no allegation relating to lack of consent arising from the antenatal events. He accepted that that absence was likely to reflect his view at the time. He accepted that there was no allegation that the Defendant failed to offer ECS and therefore in his draft report it was likely that he did not criticise that failure and he explained that he has not ever said that ECS *should* have been offered. It was put to Mr Forbes that he was aware of the *Montgomery* decision at the time the draft POC were sent to the Defendants in April 2018 and he accepted that was correct.

175. He explained that in his opinion at the meeting on the 30th of January 1996 whilst ECS would not have been offered to M, a discussion should have taken place about induction of labour and M's antipathy to ARM and EA and so CS should have been discussed as part of that. He advised that NVD/IOL was a reasonable option as a plan for birth but that CS should have come into the discussion because of the absence of the standard components in IOL which M had refused to agree to namely: ARM and EA. However he accepted it was proper practice for the clinician to advise a preference for NVD/IOL. He accepted during a five stage set of questions from defence counsel that: (1) a plan for IOL for cephalic twins was reasonable; (2) that the notes showed that IOL was the treatment Doctor Dunlop considered appropriate to recommend; (3) that if Doctor Dunlop had explained IOL it is likely she would have discussed the process; and (4) that bullet points 1 to 8 in Mr Forbes' report (paragraph

36) would have been discussed; and (5) that M knew about CS as an alternative or must have done from her multiple previous pregnancies.

176. In relation to the labour itself under questioning Mr Forbes accepted that it was reasonable for Doctor Tristram to carry out two VEs between the birth of the first twin and about 00.26 and then to formulate a plan. It was reasonable for Doctor Tristram then to consider the alternative ways forward. It was reasonable to have a discussion with a consultant. He accepted that at this time the FHR was normal. He accepted that some twins were delivered on labour wards. He accepted that it was reasonable for Doctor Tristram to suggest ARM as a forward plan including controlled high ARM. Mr Forbes appeared to abandon his suggestion that transfer to theatre should have occurred at 00.20 and he moved that time back to after the second VE and a conversation with M around 00.26-00.27. He stuck to his view that after the second VE the *only option* was to take M to theatre. However in further questioning he accepted that having not had the conversation earlier it was reasonable thereafter for Doctor Tristram to return from her conversation with the consultant then to continue the discussion with M about the options and the way forward on the basis that Doctor Tristram was suggesting M was going to be transferred to theatre for reassessment and that her default plan was (low) ARM (if the baby had descended) and the alternative plan was CS. However he advised that M's response was relevant to any informed discussion of the way forward and the decision to be taken.

177. In relation to events at theatre Mr Forbes accepted that it was reasonable for Doctor Tristram to reassess by VE in theatre. Mr Forbes drew a distinction in relation to the discussions that Doctor Tristram instigated in the delivery suite and in theatre. He pointed out that the discussion on the way forward should have been completed before the transfer. He considered Doctor Tristram inappropriately persisted with the ARM plan and was denying M's request for a CS which had been made in the delivery suite. He accepted it was appropriate to do a reassessment in theatre because if the head had come down into the pelvis CS would be contraindicated or more difficult. In his view the plan should have been formed in the labour room/delivery suite. Defence counsel asked whether in the light of the parents' request for CS in the delivery suite at 00.35, it was reasonable for Doctor Tristram to say: we will reassess in theatre. Mr Forbes considered that if a discussion took place the agreement should have been for CS but to re-examine to rule out NVD and then no further discussion would be necessary. He criticised Doctor Tristram for failing to engage in an adequate dialogue in the delivery suite. He pointed out that there is a difference between agreeing to the parents' request for a CS with a caveat of reassessment in theatre and what Doctor Tristram did, which was to persist with her ARM plan. Doctor Forbes was firm in his advice that the plan should have been made in the delivery suite after a full and informed dialogue with the parents. In theatre, after reassessment, if the situation was the same then the plan, which should already have been made for CS, should have been proceeded with immediately.

178. Mr Forbes accepted in cross examination that an example of a reasonable set of timings for the duration of anaesthesia and the operation would have been:

178.0 00.52: venflon in.
178.1 00.55: drugs administered.
178.2 00.56: intubate.
178.3 00.57: washing of belly.
178.4 00.57- 01.03: operation.

So 4 minutes for the anaesthesia and 6-7 minutes for the CS. I understood this to be restricted to the duration of the procedures, he was not agreeing that a start time of 00.52 was reasonable.

179. In re-examination Mr Forbes explained that his opinion was that the CS plan should have been made before transfer to theatre subject to the caveat that a VE would take place in theatre to see if M was ready to deliver and if necessary have a low ARM. This was because if the baby was too low CS would be difficult. If the head was still high a CS should have taken place. Such a VE would be quick. Mr Forbes explained that if anaesthetic was induced at 00.50 then delivery took too long, in the event occurring at 01.03. However looking at the anaesthetic chart he could not tell precisely when the anaesthetic was induced. Ignoring the Venflon he considered that there was anaesthetic induction at 00.50 and therefore delivery should have been achieved by 00.56. He considered that the maximum time that should have been taken between induction of anaesthetic and the end of the CS could be stretched to 10 minutes but not to 13 minutes.

180. **Mr Tuffnell** provided his report in April 2021 and gave evidence in support of the Defendants' case. He is a consultant obstetrician and gynaecologist who worked at Bradford hospital between 1994 and 2019. He was clinical director for five years. He had been involved in writing papers on fetal monitoring and had contributed to the NICE guidelines in 2010 on intrapartum care. Many of his publications are on diabetes in pregnancy but others are wide-ranging and he has written book chapters on obstetrics.

181. In the summary in his report his evidence was that it was a factual matter for the Court to decide whether CS was requested by M antenatally (CSMR) however it would not have been reasonable clinical practice in 1996 to offer ECS to every pregnant woman without a clear indication for CS. He opined that Doctor Tristram's care for the Claimant after the birth of the first twin was reasonable. In particular her decision that M would need a membrane rupture in theatre. In relation to the allegation that by 00.25 hours there should have been a discussion about the plan for delivery and transfer to theatre, he considered that allowing further time for the Syntocinon to work

was reasonable. He accepted that it was a fact that at 00.35 hours M requested CS. He advised that at that point Doctor Tristram "would have had to discuss" with her the appropriate risks and benefits of membrane rupture or CS. He avoided advising in his report on whether Doctor Tristram had ignored the parents' request for CS written in the notes by the midwife at that time.

182. In the body of his report Mr Tuffnell sought to make good his summary advice. He pointed out that M would have carried her AN notes back and forth herself to the various check-ups with midwives and doctors and that he noted there was no request for a CS in the records. On the contrary there was a note that M sought "natural birth". He advised that if M had made a request for CSMR then a discussion with an obstetrician would have been appropriate. He advised that in 1996 cephalic twins were not considered to be an indication for ECS. He pointed out that even after 1996 the NICE guidance was that there was no indication for ECS in uncomplicated twin pregnancy where the first baby was presenting in a cephalic position. He amplified this by advising that a student suggesting in an examination that the correct mode of birth for twins would be CS would fail. He advised that ECS was not a reasonable alternative treatment for a twin pregnancy in 1996. What he did not advise on expressly in the report was whether it was a reasonable alternative treatment by choice for this mother who did not want an ARM or an EA and wanted sterlisation so had no plans for further children.

183. In relation to the labour Mr Tuffnell highlighted that M had asked for an EA despite her previously noted objections to EA. He advised that the usual management of twin labour would be to stabilise the lie as longitudinal and then encourage contractions with the use of Syntocinon.

184. He advised there was no specific recommendation at the time for the interval between the birth of twin 1 and twin 2. It was recognised most commonly that it did take less than 30 minutes but as long as there was *no immediate concern about fetal well-being* it was not thought that there was a requirement to get the baby born within a particular time frame. He relied on no books to support his opinions and his choice of words was interesting. He did not for instance use words like these: "*As long as the FHR was adequately monitored and reassuring".* I shall return to this later but he did not advise on what should have been done if the FHR was not being monitored adequately.

185. He warned that if the membranes were ruptured too early it was more likely that the baby would move from a longitudinal lie to a transverse lie and that would necessitate urgent CS whereas waiting for contractions to push the presenting part down into the pelvis would facilitate NVD. In relation to 00.20 hours he noted the cervix was closing and explained this was because there was no pressure on it from the presenting part of the baby to keep it open. However he advised that it would open quickly if

pressure started because the baby had descended. He advised there was no specific action required at that time but also advised that a plan needed to be developed. In relation to the Claimant's allegations of failure to transfer to theatre earlier and failure to respond to the parents' request for CS at 00.35 hours Mr Tuffnell advised that waiting beyond 00.20 hours was reasonable to permit the Syntocinon to take effect. However at 00.35 hours when the parents' requested CS he stated "*there would have to be a discussion with her about the risks and benefits*". He advised that simply to agree to the request was not correct. He advised that CS would be outside of usual practice without giving M an explanation. He considered that the notes and witness evidence suggested there was a discussion of the risks and benefits of NVD versus CS at this time after Doctor Tristram had discussed matters with the consultant.

186. Stopping here, Mr Tuffnell did not pass an opinion on whether Doctor Tristram should have acceded to the parents' request for CS after an informed discussion. He left that as a gap.

187. Although Mr Tuffnell (at paragraph 30 of his report) included in his thinking consideration that M was not keen on ARM and wanted a CS under GA and told Doctor Tristram this he considered that going to theatre and reassessing was reasonable. As to the discussion in theatre he thought it reasonable to continue the discussion, noted that M refused ARM at that time and chose CS under GA. In his opinion it was reasonable for Doctor Tristram to carry out that discussion and then to proceed.

188. In relation to the CTG Mr Tuffnell categorised the early "LOC" markings as LOCs instead of decelerations. He advised that one occurred when a scan was being performed. He accepted there was a real deceleration at around 00.17 but advised that one deceleration would not be an indication on its own to change the plan. He advised that the key was to look at a good return to the FHR baseline and the variability of the baseline and he advised that both were within the normal range. He did not regard the trace up to 00.20 as sinister or significant.

189. He rejected the criticism of Doctor Tristram about the time taken between the decision to carry out the CS and the completion of the operation. He highlighted that it took 23 minutes after the decision to transfer to theatre for the Claimant to be born.

190. Stopping there, on balance, his time scale of 23 minutes cannot be regarded as accurate. The note of the second discussion on CS in the delivery suite was made at 00.35. However the first was at 00.26. On the assumption that each note was made after the discussion actually took place the time between the discussions and the birth was either 39 minutes (after 00.26) or 28 minutes (after 00.35) and probably a little more.

191. In his live evidence in chief, Mr Tuffnell raised a randomised controlled trial relating to comparing ECS and NVD for twins which were cephalic. He was a collaborator. The result was uncertainty about the correct approach. He advised that before that trial where twins were cephalic NVD was uniformly recommended. The trial showed that ECS or NVD did not make much difference to the outcome. Therefore after the trial obstetricians have apparently offered ECS more often. He advised that in 1996 the view was that ECS for a mother with a big uterus resulted in more risks for the mother than NVD. There was no evidence that it assisted the babies.

192. In relation to events in the antenatal clinic events he agreed with Mr Forbes' approach to how CS would enter discussions there. He would expect that NVD would be explained and that CS would be added to the explanation as a possibility if NVD failed but not as an elective plan from the outset. He explained that NVD was safer if there was no contraindication and that ECS was not recommended or offered in 1996.

193. In relation to CS, if it was raised by the mother (CSMR), there would be a discussion to try to understand why and to explain the medical view and to hope to achieve consensus. If there were roadblocks in the mother's thinking then sometimes obstetricians would seek a second opinion.

194. In relation to labour he advised that the trace was reassuring after 00.20. In relation to the allegations of breach due to delayed transfer he advised and accepted that M needed delivery in theatre either by NVD using ARM or CS. He advised that after the second VE, when Doctor Tristram left the room to take advice (which he said was standard practice), it would be correct to talk to staff outside the delivery suite to inform them that theatre transfer may be needed. He did not accept that it was reasonable to criticise the 15 minutes delay in getting to theatre.

195. In relation to the CTG decelerations or LOCs he advised they were not a concern and that the single deceleration at 00.17 was not a significant concern in view of the reassuring trace from 00.20 forwards.

196. As for the asserted delay of 13 minutes between induction of anaesthetic and delivery he did not consider that unreasonable.

197. In cross examination Mr Tuffnell advised that antenatally if M had requested a CSMR there should have been a discussion about it. If there had been no request then the mention of CS would arise as a possibility during the discussion of the plan for NVD. It would not have been offered as an elective option. Mr Tuffnell admitted to finding the effects of the *Montgomery* judgment difficult in relation to the offering of treatment options at the antenatal clinic in 1996. He could not answer the question put to him exposing the conundrum in relation to ECS/CSMR: all the Defendants' witnesses, Mrs Tonge, Doctor Dunlop and Mr. Porter accepted that CSMR would be

agreed to if any mother had persistently pushed for it, despite contrary advice from firstly the registrar, then Mrs Tonge and then Mr Porter, namely 3 hoops, and yet none of the obstetricians would have offered ECS.

198. When questioned on whether IOL could properly be consented for a mother who did not want ARM or EA without the obstetrician offering the alternative of CS Mr Tuffnell explained his thinking as follows. The obstetrician's purpose would be to explain the process of IOL and how it progressed. It was not uncommon for women to say they wanted to avoid EA but Mr Tuffnell would not automatically offer ECS for a woman with twins who were cephalic just because she did not wish EA. Nor would he offer ECS for a woman who also did not want ARM. The preference he perceived M to be stating antenatally was to have a wholly natural childbirth rather than intervention by CS. Mr Tuffnell accepted that discussing the theoretical dialogue in 1996 is difficult. Dialogues are different depending on the reasons given by each mother for not wanting ARM or EA. When questioned on whether the dialogue was a "persuasion exercise towards NVD" or an "exercise to enable choice between NVD and CS" Mr Tuffnell stated the exercise was to assist women in making the decision that they were most comfortable with. Mr Tuffnell accepted that ARM and EA are part of standard practise for IOL with twins. He accepted as an analogy the following: if the plumber's job was to complete a sink repair in a house and two of the commonly used tools in his tool bag for the repair were an ARM and an EA; if the houseowner refused to let the plumber bring those tools to the house for the job then he would not bring them to the house, but Mr Tuffnell would still attempt to complete to the job without them.

199. Claimant's counsel suggested that the procedure in the antenatal clinic led to M's consent to IOL because she did not feel she had an alternative. Mr Tuffnell considered that M was aware of the option of CS and the question for the Court was whether she actually requested it. Mr Tuffnell's evidence was that where CS was not medically indicated it would not be offered but it would be discussed if raised by the mother.

200. In relation to the CTG trace Mr Tuffnell considered that the labels "LOC" were appropriate because there were gaps on the trace. In relation to the substance of the traces which went down, then had a gap, then went back up to the baseline, he accepted that there was a partial deceleration at 00.14 but that its duration was less than 15 seconds. To be a deceleration the reduction had to be more than 15 BPM and more than 15 seconds long. He considered this valley was not clinically significant and was not properly classified as a deceleration. He accepted that CTG was used to monitor the FHR to reassure doctors that they did not need to interfere. His evidence was that decelerations were not unusual for twin 2. So long as the trace returned to a variable baseline at the right level and had accelerations it was not sinister. Contractions cause decelerations. He accepted that there was a deceleration at 00.16 to 00.17 however this was ameliorated by the reassuring trace after 00.20.

201. In relation to the VEs carried out by Doctor Tristram, the first showed the cervix at 8 cms dilation, so already closing, and the second was 7 cms, a further closing. He accepted that the baby's head was high above the pelvis and the risks of an ARM with the head high would include: cord prolapse which would be an emergency and would have to take place in theatre, and also potentially a change of the baby's position which would be tricky for any obstetrician. Claimant's counsel suggested the only real option at this time in the delivery suite was CS not ARM. Mr Tuffnell however considered that ARM was still the *preferred option* although CS *could become an option*. However he accepted that having ARM as the primary plan was a bit artificial. M needed to go to theatre, have an assessment, and the clinician would then decide. Doctor Tristram set in motion steps to go to theatre. Mr Tuffnell considered that taking 10 minutes to get to the theatre after the decision to go to theatre would not be unreasonable and 15 minutes would not be unusual.

202. In the light of the fact that the CTG was going to be removed so that the FHR would become unmonitored I did not find that piece of evidence persuasive.

203. Mr Tuffnell considered it was reasonable to wait for the Syntocinon to take effect. He considered it reasonable for Doctor Tristram to leave the room at 00.27 and discuss the plan with a consultant and then return to discuss the plan further with the parents and to obtain consent before leaving the delivery suite.

204. In relation to the conversation with the consultant whilst M was in the delivery suite Mr Tuffnell accepted (from the video) that the parents had requested CS before Doctor Tristram departed to have that discussion. He accepted in relation to that discussion that there was a risk that high controlled ARM would not work due to prolapse of the cord or change in the position of the baby leading to a requirement for a crash GA and then CS. He did not accept that most obstetricians would have chosen a CS instead of a high ARM for this mother. However he accepted that the choice would depend on the fetal heart rate, the cervix closing and the height of the head. When questioned on why there was any need for a second discussion with the consultant in theatre after M had refused an ARM and had specifically chosen CS Mr Tuffnell advised it was still the registrar's obligation to explain matters to the consultant.

205. In relation to the delay between induction of anaesthetic and the Claimant's birth Mr Tuffnell explained that the anaesthetic procedure was for a Venflon to be inserted so that IV fluids could be used. Correct siting of the Venflon was crucial because the fluids could cause necrosis if they did not go straight into a vein. Then 3 minutes was needed for pre oxygen. Then drugs would be infused, the first to make the patient sleep and the second to create paralysis. Then a tube would be put into the trachea to

monitor CO2. Then the anaesthetist would fix the tube and tell the surgeon everything was OK to proceed.

206. In relation to the snapshot taken in theatre of the FHR and the conundrum that the readings were 135 and 138 BPM Mr Tuffnell explained that it could either be the maternal pulse or occasionally the hand held devices doubled the actual FHR, hence in this case the correct FHR would have been half the appropriate reading (around 65-66 so bradycardic).

207. Mr Tuffnell advised that he would have expected Doctor Tristram to tell Mr Dunster during their first discussion, whilst M was in the delivery suite, that M did not wish an ARM or an EA. Presumably he would also have expected Doctor Tristram to mention the parents' choice of CS but he did not say so.

Joint obstetric report

208. In their joint report produced in December 2021 after discussion of the issues Mr Forbes and Mr Tuffnell agreed that if M had asked a midwife for a CS the midwife should have ensured that an appointment with a consultant (Mrs Tonge) was arranged to discuss the request and recorded that in the AN notes. In relation to the AN notes stating that M would prefer natural labour, no ARM and no EA, but if she had a CS she would like sterilisation at the same time, Mr Forbes advised that NVD without EA and ARM needed to be discussed with an obstetrician. Mr Tuffnell did not answer the question and merely stated that the note suggested M preferred a plan for NVD. I find Mr Tuffnell's avoidance of answering that question troubling. He must have known it was relevant to the issues.

209. Having discussed ARM, both experts agreed that on 30.1.1996 offering NVD with IOL was reasonable provided consent was obtained. If M had requested CSMR Mr Forbes advised that CS should have been agreed to after a balanced discussion of the risks and benefits of NVD versus CS. Mr Tuffnell agreed about the counselling.

210. Both experts agreed it would not have been reasonable to offer M an ECS absent a request for it with cephalic twins where M had delivered naturally before (twice), but if CSMR had been requested by M and M had persisted after counselling (and possibly a 2nd opinion), then both agreed that CSMR should have been agreed to by the Defendant.

211. CTG: Mr Forbes advised that there were decelerations at 00.05; 00.11; 00.14 and 00.17. Mr Tuffnell advised that the 00.05 was probably MHR; the 00.11 was a deceleration but probably MHR; the 00.14 might be MHR and the 00.17 was a deceleration. Mr Forbes summarised the first 20 minutes of the trace as showing decelerations and Mr Tuffnell focussed on the normal baseline in between. Both agreed that the trace was reassuring from 00.20 to 00.41 and was probably the MHR

not the FHR. They also agreed that the failure of Doctor Tristram to spot this was not negligent.

212. On the experience of Doctor Tristram to manage the birth, both agreed it was not negligent to let her do so by reference to her training and experience although Mr Forbes considered that saying so was "illogical".

213. Both agreed that by 00.27 the Claimant's head was not descended into the pelvis and the cervix was closing. Mr Forbes advised that a prolonged birth to birth interval was only permissible if fetal monitoring was reassuring. He asserted the CTG showed repeated decelerations. (In evidence he accepted that 2-3 of those were not sinister.) Mr Tuffnell advised that the CTG was reassuring. Both agreed that it was reasonable for Doctor Tristram to take advice from a consultant and that time.

214. Question 20 was confusingly phrased on timings but I assume it related to the first discussion with a consultant. Mr Forbes advised transfer to theatre was required before speaking to the consultant. Mr Tuffnell disagreed. Transfer after was reasonable. Both agreed that the discussion probably took place just after 00.27 when Doctor Tristram left the delivery suite. Mr Forbes advised the discussion should have taken place at about 00.25. Mr Tuffnell advised that what Doctor Tristram did was reasonable.

215. Answering question 22 about whether the consultant should have been aware of M's aversion to ARM, Mr Forbes advised that ARM was immaterial because the baby was high but immediate transfer to theatre and theatre readiness was mandated. They agreed that when Doctor Tristram went to talk to Mr Dunster the Claimant's head was high and the cervix was contracting (closing) and the parents had indicated that they had wanted CS from the start to Doctor Tristram. Mr Tuffnell agreed that ARM at this time was materially different to ARM to start labour. He did not deal with the parents' request for CS and whether the consultant should have been told of this choice.

216. That answer (or lack of answer) from Mr Tufnell is relevant to my decisions below.

217. Both agreed that before the discussion the head was high and the cervix was contracting. Mr Forbes pointed out that the parents had requested CS and Mr Tufnell accepted that the parents had stated they wanted CS from the start.

218. For that discussion the experts agreed that the options were: ARM; possible IPV; breech extraction; or CS.

219. The obstetric experts agreed that Doctor Tristram could have agreed to the parents' request for CS around 00.27 and that would have been a reasonable option, with Mr Tuffnell adding that a discussion with the consultant was required before agreement.

220. In answer to hypothetical timing questions the experts agreed it should have taken about 26 (Forbes) or 25-30 minutes (Tuffnell) from the decision to do a CS to the birth and 5 minutes longer if the decision to transfer had been delayed until after the discussion with the consultant. On the hypothesis that a decision for CS had been made during the first discussion with Mr Dunster (at between 00.27 and 00.34) the experts' timings for the but for birth were 00.55 and 00.58.

221. I consider that both obstetric experts were impressive and helpful witnesses with substantial experience. I was particularly impressed by Mr Forbes' depth of thought. Other than some minor errors on figures carried over from the large volume of relevant text books and articles he helpfully provided I preferred his analysis of the events and of the standard of care for the obstetric clinicians involved. I found Mr Tuffnell's evidence more general. He provided no textbooks or articles to support his evidence and his evidence on the CTG trace and the timings of when events should have occurred was less logical than that of Mr Forbes. In addition Mr Tuffnell's evidence that there was no rush because the FHR was reassuring on the CTG evaporates in logic when the CTG was removed at 00.40 well past the point when the 30 minute inter-twin period had expired. He did not address the *Rayburn* paper point that so long as the CTG trace remains reassuring there is no rush. Whereas Mr Forbes did directly address the need for speed after the CTG was removed and indeed before in the knowledge that on transfer to theatre that would take place. I am also troubled by the way Mr Tuffnell omitted to answer some key questions.

Expert evidence from other fields

Expert midwives

222. The experts were **Dawn Johnston** and **Kaye Wilson** and they were not called. They agreed in their joint report that the antenatal booking documentation was carried out to a reasonable standard. If M had requested a CS as her birth plan they would have expected that to have been documented. They also would have expected the midwife to have requested an antenatal appointment with an obstetrician because the choice of birth plan was not a midwife's decision. They agreed that the birth of the twins was led by the obstetricians not the midwives. They agreed that the midwifery care was to a reasonable standard. Miss Johnson considered the labour midwife should have advised Doctor Tristram of the poor contact with the CTG after midnight and the need for a fetal scalp electrode.

223. In her report dated May 2021 Miss Johnston aimed criticism at the delay between the births in the light of the lack of FHR monitoring after 00.41.

224. Miss Wilson reported in April 2021 and focussed on the records in which a midwife recorded M's desire for a natural birth with no ARM or EA and the words: *"if"* she had a CS she wanted sterilisation. She interpreted those words as meaning that M did

not request a CS. She commented that there were no notes made of any request for a CS which would be odd if requests had been made considering that notes were made about M's aversion to ARM and EA.

Neonatal expert evidence

225. **Doctor Fox and Doctor Dear** provided their joint report in December 2021. They noted the Claimant's cord gas blood results were pH 6.77 and she was born in a poor condition with no heartbeat, no respiration and no muscle tone. They agreed the fetal heart rate rose to above 100 BMP at 01.06, so 3 minutes after birth. They noted the Claimant's arterial blood gas at 42 minutes after birth was severely acidotic. They noted the MRI taken in February 2017 indicated acute PHI. They diagnosed athetoid cerebral palsy with dystonia and with a need for a wheelchair for mobility and assessed her mobility at grade GMFCS 5. In relation to estimating the length of the acute PHI they deferred to the paediatric neurologists. They agreed that the likely mechanism for the PHI was cord compression. They advised that delivery by 00.56 would have avoided injury altogether and they advised that the injury continued minute by minute up until 01.06. They advised that any delay between 00.56 and 01.03 in the Claimant's birth was likely to have resulted in an *incremental* increase in the severity of her neurological damage. They deferred to the paediatric neurologists on the effects of that on function. Overall they advised that the period of PHI was 20 minutes give or take two to three minutes either way (so between 17 and 23 minutes in total).

226. **Doctor Fox** gave evidence that in his estimation the length of PHI was around 20 minutes give or take two to three minutes either side. He admitted that as neonatologists he and Doctor Dear had not taken into account the functional outcome of the Claimant in their expert evidence as to the duration of PHI because that was a matter for the neurologists. Neonatologists did not take that factor or evidence into account. He criticised the paper by *Ross and Galla* asserting that experts can back calculate the duration of PHI based on the levels of acidosis in the blood gases. He advised that the camels hump of distribution (the graph of outcomes) was too wide for that to be an accurate measure. He then back calculated and considered that from the base deficit in the Claimant's blood after birth, the length of insult was unlikely to be less than 20 minutes subject to the caveat above. He accepted that there could have been chronic partial hypoxia before the onset of acute PHI and that that could have reduced the fetus' ability to cope.

227. **Doctor Dear** gave live evidence that even a few less minutes of PHI was likely to have been materially beneficial in reducing the anatomical extent and the functional consequences which the Claimant has suffered. He advised that the structures in the fetal brain are damaged progressively by acute PHI and over a longer time the damage would extend to the whole of the brain. The sequence is usually damage in the following order:

(1) Basal ganglia;
(2) Thalamus;
(3) Spread into the cortex.
(4) Spread throughout the whole brain.

After 30 minutes of PHI death is almost certain.

228. In cross examination Doctor Dear stated that different brain structures had different roles functionally in the human body. Therefore if the PHI sequence only affects two of the four structures he had set out in his evidence in chief (shown above) that would relate to functionality. He accepted that if only the basal ganglia are damaged then only the functions related to those would be affected. He explained that during the first 10 minutes of PHI the fetus invokes compensating mechanisms which are of two types. Firstly, circulatory mechanisms sending the blood supply to the brain and heart cutting it off to other organs and secondly, the cells have compensatory mechanisms, but those will only last for a few minutes under the onslaught of PHI. He thought the period of PHI was around 20 minutes and like Doctor Rosenbloom he did not think that the subject matter was capable of further breakdown than in five minute chunks. In re examination he confirmed he had taken into account the MRI and the blood gases and considered 25 minutes of PHI would be too long, but probably more than 15 minutes was correct.

Neuroradiologists' expert evidence

229. The neuroradiologists, Doctor Likeman and Doctor Craven, provided a joint report in December 2021. They agreed that the MRI taken on the 16th of February 2017 showed established injury to the Claimant's Putamen; Thalamus and Peri-rolandic Cortex suggesting acute PHI. They agreed that the duration just from the MRI scan was likely to be in the range 15 to 20 minutes.

Paediatric neurologists' expert evidence

230. **Doctor Richard Newton** reported in May 2021 on instructions from the Claimant's solicitors. He is a hugely experienced paediatric neurologist having qualified as a Doctor in 1973, obtained his fellowship of the Royal College of Physicians in 1990 and worked at Guy's hospital between 1968 and 1970, then Kings College hospital between 1970 and 1973. He was a consultant at Manchester Children's hospitals up until 2013 when he retired from the NHS. He has experience teaching and as chairman of various training boards. He has provided many lectures and presentations on epilepsy and other neurological topics. He has written books on paediatric neurology and Downs Syndrome and published 79 peer reviewed papers with others on a wide range of paediatric neurology topics including cerebral palsy headaches, epilepsy, developmental medicine, infantile spasms and other topics.

231. In his report dated May 2021 he advised the court on causation. He considered that the Claimant suffered metabolic acidaemia during labour due to a lack of oxygen and blood supply which showed in five factors.

(1) The pattern of neurological injury.
(2) Any malfunction of other organs including the kidney and the heart.
(3) Objective pH evidence in the blood gases.
(4) Any meconium stained liquor, low APGAR scores, delayed respiration until after 10 minutes.
(5) The emergence of hypoxic ischaemic encephalopathy (HIE). He advised that the acid builds up in injured nerve cells which later swell up gathering fluids and cause brain swelling which is HIE. He advised that the severity of the illness was related to the outcome.

He relied on papers by *Sarnat* 1976 "*Following Fetal Distress"*, who categorised the severity of HIE and also on other authors who related severity to outcome which were summarised by *Levene* in *Neonatal Neurology*, 2nd ed. He advised that seizures indicated moderate to severe HIE. He advised that the Claimant had suffered cerebral palsy which was dystonic and athetotic. There was MRI signal damage in the Posterior Putamena, Thalami and Pre and Post Central Gyri. He took into account the poor renal output in the first few days and malfunction for three weeks, the Claimant's poor condition at birth, the need for active resuscitation, the seizures and poor feeding and the Claimant's extremely acidotic state. He commented that the CTG showed abnormal decelerations but from 00.20 was probably MHR and he commented on the FHR taken with a fetal stethoscope at 00.52 which was over 130 BPM. In his opinion on the balance of probabilities the Claimant suffered acute profound hypoxic ischaemia.

232. Doctor Newton set out the research carried out by *Myers* between 1971 and 1975 on primates (which he attached to his report) which showed that after 12 to 14 minutes of complete cord occlusion brain nerve cells began to be damaged. Before then little or no brain injury occurred. After this time the authors advised that babies would develop brain swelling and HIE which, if moderate, would lead to one in four surviving. He advised that the Basal Ganglia in the brain had the highest metabolic demand and so were injured first. After 20 to 25 minutes of acute PHI more serious and widespread brain damage occurred. This covered the Basal Ganglia and the Cortical watershed areas and caused four limb cerebral palsy or death. No baby would survive at 40 minutes. He distinguished between acute PHI and chronic partial hypoxia.

233. In relation to causation and earlier birth he advised that the baby's ability to compensate would end after around 10 minutes of PHI and permanent brain damage would start to occur. Given the Claimant's symptoms and in particular the

preservation of her intellect and also the fact that on MRI the Pre and Post Central Gyri only had "subtle" damage he judged the period of acute PHI to be only 13 minutes on this factor. However, given the state of the Claimant at delivery with no signs of life that would generally indicate a longer duration. He gave an explanation for the lack of FHR at birth as potentially being caused by an autonomic disturbance. He noted she was resuscitated at three minutes 30 seconds (not 3 minutes) and he also took into account that the FHR was recorded as satisfactory at 00.52. Therefore he considered that the period of damaging acute PHI was more probably around 5 minutes (out of a total of 15 minutes of PHI) taking into account this factor.

234. He postulated that the acute acidosis may well have been contributed to by chronic partial hypoxia in the period leading up to the acute PHI. He considered that had the Claimant being delivered by 00.55 she would have avoided all brain injury. After 00.55 the accumulating PHI was causing increasing impairment of brain cells which could not be defined accurately at any specific point. It is likely that the chronological progression caused increasing disadvantage to the Claimant's activities of daily life which is not de-minimis including the three minutes (he used those words not 3.5 minutes) of PHI after her birth. He also advised that any shortening of the duration of the PHI prior to delivery would shorten the period needed to resuscitate the Claimant. He advised that minute by minute damage could not be defined in terms of the level of impairment in the different domains of development.

235. In his live evidence Doctor Newton identified the three topics he was dealing with: the nature of the Claimant's injuries; the length of the PHI and Doctor Rosenbloom's Aliquot theory. In relation to the nature of the injury he pointed out that the damaged structures mainly involved movement and control centres. Using a helpful diagram of the brain tissue he explained that the brain has approximately 100,000 million nerve cells. The bodies of the nerve cells are clumped together to make the darker grey matter and the long connecting arms make up the white matter. There is deep grey matter around the surface and deep grey matter in the centre (shown in orange on the cross section diagram of the brain). Damage to the Basal Ganglia namely the Putamen, the Thalami and the Globus Pallidus were shown on the Claimant's MRI together with some other areas. This pattern was more consistent with acute PHI than with chronic partial hypoxia. As to the resulting functional disability correlation he explained that the motor control cortex for an arm, for instance, contacts the arm via the Basal Ganglia to assist in the pattern of movement and that the Cerebellum was like an air traffic controller. When the Basal Ganglia are damaged the movement patterns' storage and retrieval procedures are affected and so the tone of the limbs is affected. He explained that "athetosis" is involuntary movement presentation whereas stiffness is "dystonic" presentation. The Claimant exhibits a combination of dystonic and athetotic presentation, evidencing Basal Ganglia damage. The Pre and Post Central Gyri are the areas reaching out from the Basal Ganglia towards the outside of the brain. The Claimant's damage here is subtle as shown on the MRI but clinical

features supported that damage. As for the duration of the insult using pattern of injury and symptoms, at 13 minutes of PHI he would generally expect signal change indicating damage shown by the MRI in the Basal Ganglia. These being the first cells to be damaged because they have the highest metabolic rate. They are the deep grey matter and would be damaged first particularly the Globus Pallidus and the Putamen. Then as the minutes pass approaching 15 minutes of PHI it would be more likely to see additional signal change in the Thalamus or extending into the white matter reaching out to the motor cortex (on the surface). The longer the insult the greater the damage that would be shown here. Over time the less vulnerable cells in the white matter become damaged so learning disability would emerge and language and cognition and social abilities would be damaged and so on. The damage then spreads.

236. As to the rate of functional damage caused by acute PHI Doctor Newton advised it was *certainly not linear* because populations of cells had varying vulnerabilities. They would cope and then they would "fall off the cliff". He advised it was difficult to be precise on the estimation of the duration of the acute PHI. He repeated the five factors generally used listed in the joint report at TB page 717.

237. Overall his conclusion on the duration of the acute PHI was based on the relative preservation of cognitive function and the more severe damage to movement. The Claimant can help with transfers. He considered that the exposure duration was at the shorter end because of the symptom pattern and the radiological pattern. He considered the damaging exposure could have been as short as 4 minutes (out of a total PHI or 14 minutes) and that would fit with a fetal heart rate at 00.52 as recorded. It could have been as long as 8 minutes (out of a total PHI of 18 minutes) but he could not be precise. He did not consider the acute PHI was as long as a total of 20 minutes. Generally he considered that after 20 minutes of acute PHI, ten of which were damaging, cognitive damage and social developmental damage would arise at a higher level than the Claimant has. However he accepted that anything was possible.

238. As for Doctor Rosenbloom's Aliquot theory, in the early days of his medico legal practice percentages were applied to disability using duration as the yardstick. Studies referred to functional groupings using terms like "mild", "moderate" and "severe" and each was scored in various columns: for instance motor, language, cognition etc. However he considered this was not really useful in human functional outcome terms. He was clear that the longer the duration of the PHI the more injured the brain would be and the greater the brain damage suffered by the Claimant but the functional disability was just not predictable. He stated that parents often asked the same question after brain damage occurred to their babies and he always advised that it is impossible to predict the outcome prospectively. He advised that he felt uncomfortable with and he felt it was wrong to use the Aliquot theory in chunks of five minutes. The real variability was too wide. So some cerebral palsy sufferers in each category could be very bright, married and have two children whereas others

would need total support running their lives. He refused to pretend that doctors could predict outcomes by using the Aliquot theory relating to the duration of PHI. He accepted that many doctors do adhere to Doctor Rosenbloom's theory but he pointed out that it lacked any proper database.

239. In cross examination he would not change his view. He accepted that the *Myers's monkey* studies showed that only a few minutes of damage will in general cause limited damage and only to certain structures. However he refused to accept it was possible to specify the functional outcome. He agreed that the FHR readings taken at 00.45 and 00.52 of 135BPM and 138BPM respectively were snapshots and it was possible both were maternal. They were snap shots taken by a Doppler and so may have been double the actual rate due to a known malfunction of such devices. He rejected the conclusions of *Ross and Gala* in their paper published in the *American Journal of Obstetrics* in 2002, which suggested being able to back calculate the duration of the PHI on the basis of the level of acidosis in the blood gases. In relation to the Aliquot theory he repeated his view that it was not scientifically appropriate. He agreed that the paper published by *Rosenbloom and Rennie in 2011* was a valuable piece of research but pointed out that their call for a database had not been answered.

240. **Doctor Rosenbloom** reported in September 2021 on the instructions of the Defendants. He is a very experienced expert. In his opinion the Claimant's diagnosis was bilateral dystonic cerebral palsy with spasticity which was primarily a disorder of her motor function based within the Basal Ganglia which control stability and smooth voluntary motor activity.

241. His attempt to reconstruct events led him to conclude that there was no effective monitoring of the FHR in the last 20 minutes before birth and that it was probable there was a continuing bradycardia (very low FHR) damaging the Claimant during this time. This is an important point to which I will return below. I accept this evidence with which Doctor Newton agreed.

242. He considered the Claimant suffered severe hypoxic ischaemic encephalopathy (HIE) with transient renal impairment. He confirmed the brain damage was in areas of high metabolic need including the Basal Ganglia (deep grey matter) but that the Claimant had relatively good preservation of her cognitive abilities.

243. He advised that after 25 minutes of PHI very profound brain damage occurs or death. He advised that it is helpful to divide the damaging PHI period of 15 minutes which arose after the 10 minutes of initial non damaging PHI into three blocks or Aliquots. In the first Aliquot between minute 10 and minute 15, mild to moderate disabilities arise. These include: bilateral dystonic cerebral palsy but independent mobility at GMFCS level 2; the patient being able to walk with limitations and some impairment of fine motor function but the ability to self-care and write; some dysarthria will arise

but the ability to communicate and feed orally are retained and cognition is preserved with social and economic independence.

244. With acute PHI lasting 15 to 20 minutes Doctor Rosenbloom advised that generally moderate to severe disabilities arise; severe movement limitation at GMFCS level 4; the need for body support and walking aids and effective wheelchair dependency; hand functioning will be significantly impaired; the need for care and activity assistance will arise; oral feeding with difficulty; severe dysarthria and some cognitive impairment will be present; the patient will not be socially or economically independent.

245. With 20-25 minutes of acute PHI Doctor Rosenbloom stated patients will have: severe profound disabilities; be immobile and wholly wheelchair dependant; wholly dependent for care with significant cognitive impairment and gastronomies often.

246. I note here that Doctor Rosenbloom made absolutely no reference to bladder and bowel continence or incontinence in any of these categories or to hearing or visual capacity or to the many categories of activities of daily living. Many other functional disabilities were also not covered.

247. A table setting out a summary of my understanding of Doctor Rosenbloom's Aliquot theory evidence is at Appendix 1 hereto.

248. Doctor Rosenbloom advised that if the Claimant had been delivered by 00.56 she would have avoided all injury. He counted backwards from the time of resuscitation when the FHR rose above 100 bpm. He advised that the Claimant had suffered 10 minutes of damaging PHI but if she had suffered 5 minutes less PHI she would have suffered only mild to moderate disabilities as described above.

249. **In his live evidence Doctor Rosenbloom** stated that his Aliquot theory was based on his clinical and research experience. He also was uncomfortable with the *Ross and Gala* paper and the method of back calculation based on blood gases stated therein. He accepted he had not examined the Claimant and it was therefore difficult to get an overall picture of her symptomatology. He was using the third party descriptions of Doctor Shillito. He also bemoaned the lack of a full neuro psychological report although he had read the report by Sarah Gregory from 2012 in the Claimant's medical records.

250. In cross examination he explained that the cord gasses pH of 6.77 evidenced a profoundly acidotic state. The scale was logarithmic not linear so every 0.01 decrease is more weighty by far than the previous one. On the MRI scanning he deferred to the radiologists. His estimate of the duration of PHI was around 20 minutes give or take a total of two and a half minutes each way hence the range was between 17.5 minutes

and 22.5 minutes. In relation to his Aliquot theory he would not be drawn into smaller than 5 minutes portions. Therefore he was not prepared to extend the theory to portions of three or even four minutes for instance. He accepted that even a few minutes less PHI would have been materially beneficial. However he did not consider that the duration of PHI was divisible in such small chunks in functional outcome terms. He accepted that the Claimant's memory, judgment, intelligence and concentration had been relatively well preserved. He accepted that this would suggest a shorter estimated duration of PHI. He accepted that properly to evidence his theory he needed a National Register of CP sufferers recording the duration of their PHI and their symptoms. This had not been set up despite his call for the register in his 2011 paper. He accepted his theory was pragmatic and that no two cases would be identical. He was offering a "best fit". He accepted that a valid concern about his best fit is that it might be off target with the consequences being variations of millions of pounds of compensation for each patient.

251. In re examination Doctor Rosenbloom stated that in distinction from Doctor Newton he was able to advise parents soon after the birth of their child with brain damage reasonably confidently on the likely functional outcome for the child.

252. In questions from the Court Doctor Rosenbloom advised against the Court using a percentage method to apportion loss based upon the duration of PHI caused by any breach compared to the duration of PHI caused without any breach of duty.

253. I was particularly favourably impressed by Doctor Newton's evidence and for the reasons set out below I prefer his evidence on causation to that of Doctor Rosenbloom.

Additional expert evidence from disclosure

254. Both parties' experts relied on two pieces of written medical documentation provided on disclosure. I take into account that neither was intended as evidence for this Court or compliant with CPR part 35.

255. The first was a report dated 12th June 2018 from Doctor Paul Shillito a consultant paediatric neurologist in New Zealand. He described that the Claimant lived in a private rental with another disabled person in Christchurch. She received state benefits and employed staff to help her with her activities of daily living. The staff helped her get out of bed, to shower, to dress and to transfer into her wheelchair. They prepared her meals but she feed herself once her food was cut up. The staff cleared up cleaned the house and got her ready for bed. The Claimant could transfer from bed to chair and from chair onto the toilet although the transfers were difficult. The Claimant could move around her home and the community using a powered wheelchair and she could use buses and taxis. She did her own grocery shopping. She could use a spoon and a fork but not a knife. She attended a college three days a week to improve her

literacy. She had attended school but found it difficult and she had sat no formal examinations. The Claimant had good problem solving skills but slow processing skills and slow communication due to dysarthric speech. The Claimant was non-ambulant. She suffered lots of involuntary movements which were medically controlled. On examination the Claimant was alert, cooperative, willing to answer questions and engage socially. Once the Doctor had understood her dysarthric speech she was fully understandable. Her right hand was not used for manipulation skills. She could raise her arm above her head. Her left arm was slightly better than her right. She had moderately good fine manipulative skills with her left hand. Her spasticity and dystonia were more marked on the right side than down the left side.

256. A letter from Sarah Gregory, a clinical psychologist in Queenstown New Zealand dated January 2012 was also relied upon by the medical experts. The Claimant was referred to her by a special educational needs worker. She had met the Claimant and her mother several times. The Claimant presented as intellectually able, very articulate and keen to have the same opportunities as her contemporaries. She was described as developmentally "like any other 15 year old". She used an electric wheelchair but could also operate a manual wheelchair with assistance. However she was suffering frustration and sadness due to her disabilities. She was not regularly attending school due to lack of support workers and lacked social interaction due to her disabilities. She wanted more independence from her parents, to hang out with her friends and develop her academic and social skills.

The Law

Standard of care

257. When considering breach of duty and the standard of care in this case I have applied the principles in *Bolam v Frien Hospital* [1957] 1 WLR 582. McNair J was addressing a jury and ruled thus:

> "Before I turn to that, I must tell you what in law we mean by "negligence." In the ordinary case which does not involve any special skill, negligence in law means a failure to do some act which a reasonable man in the circumstances would do, or the doing of some act which a reasonable man in the circumstances would not do; and if that failure or the doing of that act results in injury, then there is a cause of action. How do you test whether this act or failure is negligent? In an ordinary case it is generally said you judge it by the action of the man in the street. He is the ordinary man. In one case it has been said you judge it by the conduct of the man on the top of a Clapham omnibus. He is the ordinary man. But where you get a situation which involves the use of some special skill or competence, then the test as to whether there has been

> negligence or not is not the test of the man on the top of a Clapham omnibus, because he has not got this special skill. The test is the standard of the ordinary skilled man exercising and professing to have that special skill. A man need not possess the highest expert skill; it is well established law that it is sufficient if he exercises the ordinary skill of an ordinary competent man exercising that particular art."

And

> "A man need not possess the highest expert skill; it is well established law that it is sufficient if he exercises the ordinary skill of an ordinary competent man exercising that particular art … in the case of a medical man, negligence means failure to act in accordance with the standards of reasonably competent medical men at the time."

258. I also have taken into account the ruling of Lord Browne-Wilkinson in *Bolitho v City and Hackney HA* [1998] AC 232:

> "In the Bolam case itself, McNair J. [1957] 1 W.L.R. 583, 587 stated that the defendant had to have acted in accordance with the practice accepted as proper by a 'responsible body of medical men.' Later, at p. 588, he referred to 'a standard of practice recognised as proper by a competent reasonable body of opinion.' Again, in the passage which I have cited from Maynard's case [1984] 1 W.L.R. 634 , 639, Lord Scarman refers to a 'respectable' body of professional opinion. The use of these adjectives - responsible, reasonable and respectable - all show that the court has to be satisfied that the exponents of the body of opinion relied upon can demonstrate that such opinion has a logical basis. In particular in cases involving, as they so often do, the weighing of risks against benefits, the judge before accepting a body of opinion as being responsible, reasonable or respectable, will need to be satisfied that, in forming their views, the experts have directed their minds to the question of comparative risks and benefits and have reached a defensible conclusion on the matter."

259. When considering the actions of Doctor Tristram and her level of seniority and experience for the birth of these twins I have taken into account the Court of Appeal decision in *FB v Princess Alexander Hospital NHS Trust* [2017] EWCA Civ 334, per Jackson LJ at paragraph 59:

> "In *Wilsher v Essex AHA* [1987] 1 QB 730 the Court of Appeal for the first time gave detailed consideration to the standard of care required of a junior Doctor. (This issue did not arise in the subsequent appeal to the House of Lords). The majority of the court held that a hospital Doctor should be judged by the standard of skill and care appropriate to the post which he or she was fulfilling, for example the post of junior houseman in a specialised unit. That involves leaving out of account the particular experience of the Doctor or their length of service. This analysis works in the context of a hospital, where there is a clear hierarchy with consultants at the top, then registrars and below them various levels of junior doctors. Whether doctors are performing their normal role or 'acting up', they are judged by reference to the post which they are fulfilling at the material time. The health authority or health trust is liable if the Doctor whom it puts into a particular position does not possess (and therefore does not exercise) the requisite degree of skill for the task in hand."

I will consider the standard of care required of Doctor Tristram in 1996 by reference to the post she was fulfilling at the time: registrar.

Informed consent and reasonable treatment options

260. The Supreme Court ruled on the legal requirements governing consent in clinical practice in *Montgomery v Lanarkshire* [2015] AC 143. The relevant facts were as follows. In 1999 the mother was pregnant and the pregnancy was regarded as high risk because she was diabetic, small of stature and because she was carrying a large baby. She raised her concerns about NVD. She was not told that her baby faced a 9-10% risk during NVD of shoulder dystocia (stuck shoulder) which could result in severe arm disabilities despite medical procedures designed to resolve the dystocia. The Doctor considered that if mothers were told of the risks most women would have chosen CS which was not in their best interests. The mother's case was that she should have been told and she would have chosen CS had she been told. The baby did get stuck in the birth canal and did suffer severe arm disabilities. The first instance Judge dismissed the claim holding there was no breach of duty during the consent process and even if the mother had been informed of the risk she would not have chosen CS. The mother's first appeal was dismissed. On second appeal to a seven judge Supreme Court the appeal was granted. In summary the Court ruled that the consent process was inadequate and the mother should have been warned of the risks so her consent was not "informed" consent.

261. The judgment of six of the seven Lords was provided by Lord Kerr and Lord Reed together. The ratio in relation to consent is set out at paragraphs 74-93. The Court analysed the tension between (1) the older historic paternalistic approach to medicine

in which the Doctor knows best and (2) the individual's right to choose based on the full information needed for the patient's exercise of that right to choose. The Court noted:

261.0 the changes in society and the changes in medical practice which reflected the greater autonomy of patients and greater access to information by patients from the internet and other sources.

261.1 The GMC Guidance (1998, 2008 and 2013) on consent acknowledging the patients' rights to reach informed decisions about their treatment.

261.2 The steps forwards in the development of the law on Human Rights taken by the *Human Rights Act 1998* which reflected fundamental values relating to personal autonomy over one's own body and what happens to it.

262. The ruling was as follows:

> "81. The social and legal developments which we have mentioned point away from a model of the relationship between the Doctor and the patient based on medical paternalism. They also point away from a model based on a view of the patient as being entirely dependent on information provided by the Doctor. What they point towards is an approach to the law which, instead of treating patients as placing themselves in the hands of their doctors (and then being prone to sue their doctors in the event of a disappointing outcome), treats them so far as possible as adults who are capable of understanding that medical treatment is uncertain of success and may involve risks, accepting responsibility for the taking of risks affecting their own lives, and living with the consequences of their choices.
> 82. In the law of negligence, this approach entails a duty on the part of doctors to take reasonable care to ensure that a patient is aware of material risks of injury that are inherent in treatment. This can be understood, within the traditional framework of negligence, as a duty of care to avoid exposing a person to a risk of injury which she would otherwise have avoided, but it is also the counterpart of the patient's entitlement to decide whether or not to incur that risk. The existence of that entitlement, and the fact that its exercise does not depend exclusively on medical considerations, are important. **They point to a fundamental distinction between, on the one hand, the Doctor's role when considering possible investigatory or treatment options and, on the other, her role in discussing with the patient any recommended treatment and possible alternatives, and the risks of injury which may be involved.**

> 83. The former role is an exercise of professional skill and judgment: what risks of injury are involved in an operation, for example, is a matter falling within the expertise of members of the medical profession. But it is a non sequitur to conclude that the question whether a risk of injury, or the availability of an alternative form of treatment, ought to be discussed with the patient is also a matter of purely professional judgment. The Doctor's advisory role cannot be regarded as solely an exercise of medical skill without leaving out of account the patient's entitlement to decide on the risks to her health which she is willing to run (a decision which may be influenced by non-medical considerations). Responsibility for determining the nature and extent of a person's rights rests with the courts, not with the medical professions.
> 84. Furthermore, because the extent to which a Doctor may be inclined to discuss risks with a patient is not determined by medical learning or experience, the application of the Bolam test to this question is liable to result in the sanctioning of differences in practice which are attributable not to divergent schools of thought in medical science, but merely to divergent attitudes among doctors as to the degree of respect owed to their patients."
> …
> "87. The correct position, in relation to the risks of injury involved in treatment, can now be seen to be substantially that adopted in *Sidaway* by Lord Scarman, and by Lord Woolf MR in *Pearce [1999] PIQR P53* , subject to the refinement made by the High Court of Australia in *Rogers v Whitaker 175 CLR 479* , which we have discussed at paras 77-73. **An adult person of sound mind is entitled to decide which, if any, of the available forms of treatment to undergo, and her consent must be obtained before treatment interfering with her bodily integrity is undertaken**. **The Doctor is therefore under a duty to take reasonable care to ensure that the patient is aware of any material risks involved in any recommended treatment, and of any reasonable alternative or variant treatments**. The test of materiality is whether, in the circumstances of the particular case, a reasonable person in the patient's position would be likely to attach significance to the risk, or the Doctor is or should reasonably be aware that the particular patient would be likely to attach significance to it."

263. The Court also gave guidance that the role of the Doctor does not require reducing risks to mere percentages and that the information to be given needs to be tailored to

the patient's own characteristics in a dialogue to ensure informed understanding by both the Doctor and the patient.

264. This decision clarified in arrears the requirements in law for clinicians when they are consenting patients. It applied to the 1999 events in the case, but how far back can this decision be taken? I doubt it can be taken as far back as the 1950s or 1960s. I make no decision on those decades. I wonder if it could be applied to clinical practice in the 1980s. Again I make no decision on that question. As for the 1990s, taking into account the rationale expressed for the movement from paternalism to patient choice there may be a tipping point at which the growth of the internet (Berners-Lee released his system in 1993), the changes in societal values and GMC guidelines and the passing of the *Human Rights Act 1998* and other legislation came together to generate the change from paternalism to patient choice. So does *Montgomery* apply to the facts of this case in February 1996, two years before the passing of the *Human Rights Act 1998* and before the internet had really developed much? I admit that I am troubled by this. I consider that it probably does. I have considered whether a watered down form of the ruling would have applied or whether a tapered growth of the *Montgomery* duty to consent properly could be the correct approach in 1996 but I do not consider I am permitted to do so as a Court of first instance without an indication for such in the Supreme Court's judgment.

265. In 2021 the Court of Session Inner House in Scotland addressed the issue of what a reasonable alternative treatment is in *McCulloch v Forth Valley* [2021 CSIH 21. The Defendant relied on this decision when submitting that ECS was not a reasonable alternative treatment antenatally. The pursuer appealed asserting that the Doctor failed to offer NSAIDs to reduce inflammation before a procedure. The judge ruled that the Doctor's professional judgment was that NSAIDs were not a reasonable alternative treatment and the test was a medical one (*Bolam)* not a *Montgomery* one. Per Lady Dorian and Lords Menzies and Pentland:

> "[40]. In our opinion Lord Boyd's analysis is correct. *Montgomery* was about advising of the risks associated with a proposed course of action, which would of course include the risks if that course of action were not adopted. It does not follow that where a Doctor concludes that a course of treatment is not a reasonable option in the circumstances of the patient the duty under *Montgomery* nevertheless arises. The patient's right is to decide whether or not to accept a proposed course of treatment. That right can only be exercised on an informed basis, which means that the patient must in such a situation be advised of the risks involved in opting for that course of treatment, or rejecting it. If alternative treatments are options reasonably available in the circumstances the patient is entitled to be informed of the risks of these accordingly. But where

> the Doctor has rejected a particular treatment, not by taking on him or herself a decision more properly left to the patient, but upon the basis that it is not a treatment which is indicated in the circumstances of the case, then the duty does not arise. The Doctor may of course, have made an error, but if so the consequences of that error, and an assessment of whether there was negligence, would be assessed on the standard *Hunter v Hanley* basis, as the Lord Ordinary in the present case correctly observed (para.111):
>
> > "*Montgomery* imposes an obligation on the Doctor to discuss the risks associated with a recommended course of treatment and to disclose and discuss reasonable alternatives. It does not go so far as to impose upon the Doctor an obligation to disclose and discuss alternatives that he or she does not, in the exercise of professional judgement, regard as reasonable. If the Doctor is wrong either about the risks of the recommended course or about the reasonableness of any alternative, then he or she might be liable for any consequent loss or injury, but that would be decided by application of the *Hunter v Hanley* test."
>
> The simple fact is that *Montgomery* has no application in the circumstances of the present case."

266. I take this decision into account when considering the two possible consent issues, one antenatally on 30.1.1996 and the other in labour on 3.2.1996 at around 00.26 hours.

Findings of fact and applying the law to the facts

267. I make the following findings of fact and rulings on the balance of probabilities.

Antenatal period

268. M had suffered a still birth in 1981 at Bath hospital which was long and traumatic. The EA she underwent (3 attempts) did not work efficiently and she thought a needle had been left in her spine which was removed by a midwife after she returned home. She thought that her child died because of the ARM. M underwent two later labours, the first in 1985 at Bath hospital which involved an ARM but no EA. Her son Brent was born healthy. M suffered a retained placenta because her cervix closed and underwent an operation under GA to resolve that. The second (Jessica) was in 1990 at Bath hospital. M specifically asked for no ARM unless medically necessary however an ARM was performed (I assume with consent) and Jessica was born healthy.

269. In 1995 M had 6 reviews by midwives for her pregnancy with the Claimant. In none of those did she request a CS as her mode of delivery.

270. On 30.11.1995 she met a registrar, Doctor Robson and a discussion took place about her birth plan and one was agreed. M wanted a normal labour and was booked into Bath hospital under Mrs Tonge's care for NVD. M mentioned to Doctor Robson and the Doctor recorded that she preferred not to have IOL or EA. I find that the preference which M expressed was to be considered in the light of her previous two successful labours both of which involved ARM despite her expressed preference against it. I find that M did not ask for CSMR and was not offered an ECS.

271. M attended 5 further midwife reviews and in none of them was CS discussed.

272. On 9.1.1996 M was reviewed by Doctor Tristram. M requested a VE and it was carried out. An ultrasound scan was also carried out. This was an opportunity to discuss CS if M wished to alter the birth plan but she did not take it, so I find that at that time CS was not M's preferred birth plan and M did not ask for a CSMR.

273. M saw Doctor Tristram again on 16.1.1996. The presentation of the twins was cephalic and all was looking good for her NVD birth plan. This was a further opportunity for M to express a preference for CSMR with a Doctor but she did not in fact wish to change her birth plan and ECS was not offered.

274. M had a home visit from a midwife on 19.1.1996. Mode of birth was discussed and M re-confirmed her preference for natural labour and this was noted. I find that there was also a discussion of the procedures which had been used in the past for her labours and she made plain that she did not want an ARM or an EA because of her previous problem birth in 1981 (not those in 1985 or 1990 for there were no such issues). CS was also discussed in the context of the midwife saying something along the lines that: with the birth of twins CS was quite common and M indicated that she would like to be sterilised if CS was required despite her plan for natural child birth. I find that M did not make a request for a CSMR to the midwife. Had she done so the midwife would have noted it and referred her to an obstetrician for a full discussion of her wishes. Overall I find that M attended various visits with obstetricians and did not raise CSMR with any of them before 30.1.1996.

275. M suffered a rash which started around 20.1.1996 and after various visits she then came to Mrs Tonge's clinic at Bath hospital on 30.1.1996 and saw Doctor Dunlop, who was an experienced registrar at that time. I find that the department in which she worked, led by Mr Porter, had in place a clear policy for the birth method for healthy mothers, who had given birth naturally before and who were pregnant with cephalic twins who were also healthy and growing well. The policy was that in the discussion about mode of birth they were to offer NVD with IOL but not to offer ECS. It was the department's practice to advise and counsel for NVD and only to mention that CS might later be chosen in the hospital as a fall back if NVD was not working or a baby

was at risk. CS was only to be carried out if medically indicated and in M's case they considered that it was not medically indicated antenatally.

276. I find that Doctor Dunlop did discuss NVD and IOL with M and that during that discussion M was not offered ECS but CS was raised initially in line with the departmental policy.

277. I accept M's evidence that she did discuss CS with Doctor Dunlop and expressed an interest in it (CSMR). I do so because I accept the thrust but not the detail of the April 1996 note written by F on this point. I find that Doctor Dunlop counselled against M choosing CS and explained the risks for M: of GA and the operation risks: which were heavy bleeding, infection and clots. I find that Doctor Dunlop probably ran through the topics in bullet points 1-8 of Mr Forbes' report (summarised above) and, because M expressed an interest in CS, also went through points 9-14 in relation to CS and the disadvantages and benefits of it. I do so despite Doctor Dunlop saying in her oral evidence that she normally would not have mentioned points 9-14.

278. I find that IOL was recommended and that M agreed to it and probably expressed her preference for no ARM and no EA, but none of these matters was noted because at that time in 1996, so long as Doctor Dunlop achieved agreement to NVD she saw no need to make such a detailed note. However Doctor Dunlop probably did know or ensure that a note of those objections was written (probably by a midwife) on the labour ward notes' front sheet, and it was.

279. I find that M agreed to continue with her previous preference for NVD with as little intervention as possible. She was consented for a VE and a membrane sweep and then Doctor Dunlop did both of those with a view to accelerating labour. M was booked in for IOL on Friday 2.2.1996 (3 days later). I find that in relation to the discussion of ARM it is likely that Doctor Dunlop understood the difference between a low easy ARM and a high difficult ARM for a second twin. I do not find that this was explained to M. I do not find that any specific warning was given to M about the challenges that her preference for no EA would raise. I do not find that such was necessary at that time.

280. I find as a fact that Doctor Dunlop did not laugh at M during the meeting on 30.1.1996 but the impression gained by M and F, who was also present, was that CS was not a safe option for M because she had given birth naturally before and there was no need to take the risks. The noted reasons for IOL were M's discomfort from the rash and the cephalic twins approaching 38 weeks gestation and (un-noted by Doctor Dunlop but previously agreed with Doctor Robson) M's desire for a natural birth.

281. I make no criticism of M and F for asserting the laugh in their April 1996 note. That was the impression they had honestly developed 8 weeks after the birth of their brain

damaged daughter as they looked back on a clinic meeting which was otherwise unmemorable.

Consent and breach - antenatal period

282. Applying the law to the choice of mode of birth process during the antenatal period and the allegations by the Claimant that: (1) ECS was a reasonable treatment option which should have been but was in fact never offered to M, and (2) that M specifically requested CS (CSMR) and her request was rejected and never properly counselled upon, I rule as follows.

283. There is an inherent illogicality in the approach taken by the 1st Defendant's department. All of the Defendants' witnesses and Mr Tuffnell asserted that ECS was not a reasonable treatment option antenatally for M because she had achieved NVD twice before, was healthy and her twins were in a cephalic position and healthy. But they all also gave evidence that if M had requested CS (CSMR) and persisted, despite being put through two or perhaps three counselling sessions against that choice, they would and should have agreed to her choice for CS as her birth plan. Such agreement must in logic mean that CS was a reasonable medical treatment option for M despite being more risky for her. Indeed the undisputed evidence was that in 1995-1996 42% of twin births were by CS. In my judgment it is not logical for the Defendant to assert that CS was an unreasonable treatment option in the face of those matters.

284. It is clear from the evidence before me that Mr Forbes would not have offered ECS at the time either. He would have discussed CS in the context of recommending NVD and only as a fall back if events made safe NVD unachievable. But if a mother requested CS (CSMR) and persisted it would be agreed to. However, Mr Forbes recognised the tension medically in that approach most insightfully in his report and his evidence.

285. In my judgment, depending on the full factual and medical matrix for each twin pregnancy, if CS was an operation which the obstetricians would have agreed to (after counselling against it) due to M's persistent personal choice then it probably comes within paragraph 87 of the judgment in *Montgomery* as a reasonable treatment option which should be discussed subject to careful counselling against it.

286. I find as a fact that in this case CS was regarded by the department at RUH Bath as an option which M could have chosen by request and with persistence despite contra-counselling. So I conclude and find on the facts and in law that CSMR was a reasonable treatment option for M.

287. The discussion in the case law about the determined parent and the ill informed parent is not relevant on the facts of this case. M had given birth twice by NVD to healthy children. She knew of CS. Midwives had advised her during the antenatal period that

she might well need CS. So she discussed CS with Doctor Dunlop on 30.1.1996. I accept and so find that Doctor Dunlop counselled her properly against CS and I find that M accepted that counselling and was persuaded not to pursue her expressed interest. I do not accept that she was improperly or unlawfully counselled in relation to CS nor that the option of CSMR was not made available to M.

288. Whilst in other cases with other facts and with another mother the illogicality of the department's policy might produce a different result, I do not find that the parents' assertion that they never saw a doctor and never really felt they were given the option of CS were made out on the evidence. I find that M wanted a natural child birth with minimal instrumental involvement and without EA but she retained the right to change her mind later on.

289. It seems to me that the cause for complaint in relation to ante natal consent ended on 30.1.1996. The consent process for the birth plan was not unreasonable or a breach of duty in my judgment. I do not find that Doctor Dunlop was negligent in failing to discuss CS with M. I have found that the discussion did take place despite the absence of a note about it. I find as a fact that had M persisted she would have been referred for more detailed counselling to Mrs Tonge and would likewise have been persuaded to agree to NVD as the least invasive and safest option with a fallback of CS if medically necessary and M would have accepted that advice.

Labour – findings of fact and rulings on breach and consent

290. On 2.2.1996 M entered the hospital for a planned and properly chosen IOL as she pleaded in her draft POC in 2018. At 08.15 the IOL procedures were explained to her and the notes say she was consented. I make no findings about what the "consented" note means. I heard insufficient evidence on that. However I find it is likely that M and F were aware of the likely procedures involved in IOL.

291. There is no need to make detailed findings in relation to the period up to the birth of Bethany save to record that Bethany's waters broke naturally and by around 22.00 M herself asked for EA overturning her previous preference not to have EA as she had every right to do. In the event the attempts to insert the needle did not work and so from then on EA was no longer an option. I reject the assertion made in F's April 1996 note that at this time (when the EA did not work) M asked for a CS. No such request was noted by medical staff and I consider such a request would have been noted. The labour continued to be monitored by CTG from 22.00 to midnight.

292. Doctor Tristram arrived at 23.55 when M was in the delivery suite. Her first note was "*continue with vaginal delivery*". Bethany was born by NVD 1 minute after midnight and was a bit floppy but soon healthy.

293. The crucial period for the allegations of clinical negligence is between 00.25 on 3.2.1996 and 01.03, a period of 38 minutes. In many historic cerebral palsy cases the Court is dealing with degraded witness evidence due to the passage of time and is guided by the clinical notes. In this case I am greatly assisted by the video which F took of the period up to 00.34. I shall take my timings mainly from that (adjusted by 1 hour) where it differs with the approximate timings in the clinical notes. I take into account that Doctor Tristram wrote her notes 2 hours after the events and appears to have taken her 5 minute interval timings from the midwives' more contemporaneous notes. I take into account that the midwives wrote each note at the time stated but each related to events which had just occurred.

294. I find that it was reasonable for Doctor Tristram to consider that the Claimant (the baby) was doing reasonably well from 00.01 to 00.40 by reference to the CTG trace. I find that 3 decelerations were shown clearly on the trace and all of them involved some LOC but that did not alter the proper interpretation of the substance of the traces as decelerations. I accept Mr Forbes' evidence on the nature of these and prefer it to Mr Tuffnell's evidence. I do not accept Mr Tuffnell's suggestion that any of the decelerations were MHR. I note that Doctor Tristram herself noted them as "decelerations" in the notes at 00.35 and the 1st Defendant called them decelerations in the response letter. I agree with the noted categorisation, even though Doctor Triatram disavowed it in her live evidence. I accept that the first one was not of any significance but the second was of equivocal significance. The third at 00.16-17 was a late deceleration and would have been un-reassuring and significant if there had not been an acceleration soon thereafter and then a good trace from 00.20 onwards with a baseline which was good and variability which was reassuring.

295. I consider that, as Doctor Tristram partially accepted in her evidence, the normal or aimed for birth to birth delivery interval for the Claimant was 30 minutes or less. I rule that starting with the 5 minutes leading up to the half hour mark and after that time it was necessary for Doctor Tristram to move fast, make plans with urgency and to make sure she avoided delay once the baby was no longer being safely monitored and in anticipation of taking the CTG trace off. This need for speed arose because of the risks to the baby which included placental perfusion reduction, placental abruption, cord prolapse and change of position. It arose also because of the increased risk caused by the fetal head staying high above the mother's pelvis. It arose also because no EA was in place and it was not going to be available to Doctor Tristram because it had been tried and had failed. EA was important as a tool in her tool kit for IOL involving ARM because if Doctor Tristram was to continue to aim for ARM she would have two possible routes. The easy one and the risky one. The easy one would involve the baby coming down into the pelvis (due to the contractions) and she could then do a low ARM to speed up the process. The risky one would occur if the baby's head stayed high. She would then need to do a high controlled ARM. A long hooked needle would be needed to break the waters and then she would use finger restraint at

the cervix to slow down the release of the amniotic fluid to prevent too much movement of the baby and possible cord prolapse or position change away from cephalic. If the baby did change position away from cephalic an IPV might then be needed to manipulate the baby's position and that could not be done without EA or GA because it would involve insertion of the Doctor's hand and wrist into the uterus. I find that IPV is very difficult. Doctor Tristram would have needed GA to be set up and ready if she were to have to perform IPV. It was not possible without GA. All of this would have been going on without any adequate FHR monitoring.

296. I consider that the administration of Syntocinon and the two VEs were appropriate and reasonable treatment for M up to 00.25.

297. By 00.25 on the whole of the evidence and on the expert evidence of Mr Forbes I find that:

297.0 The CTG was mainly reassuring but had one equivocal and one late deceleration.
297.1 The fetal head was high and had not descended into M's pelvis.
297.2 M's cervix was closing.
297.3 The usual 30 minute birth to birth period was expiring.
297.4 M was not set up for EA and probably could not have one and would probably not agree to another attempt.
297.5 M did not want an "ARM" (at least did not want a high ARM as she explained in evidence) and that was clear from the medical notes, so M would quite probably refuse high ARM as a proposed way forwards.
297.6 Urgent transfer to theatre was the only safe option for the baby and M.
297.7 Descent of the head into the pelvis, opening of the cervix and low ARM was still possible but it would have to occur on arrival in theatre.
297.8 High ARM would be a difficult procedure for any obstetrician and in particular for Doctor Tristram who had not done more than perhaps one before and not on a second twin and had no EA in place so it would need GA. M was unlikely to agree to it in any event. IPV would be very difficult for Doctor Tristram.
297.9 CS under GA was the best reasonable treatment option at that time subject to a quick assessment in theatre to see if the baby had descended during the trolley transfer in which case it could be avoided.
297.10 The CTG trace would be removed on leaving the delivery suite so from that time real urgency was needed because the fetus would be inadequately monitored.

298. I make those findings because I have accepted Mr Forbes' evidence about the events and the correct standard of care in the relevant period. I reject Mr Tuffnell's evidence on the events in the crucial 38 minute period. I do not find Mr Tuffnell's evidence

stood up to logical scrutiny from 00.26 onwards and it contained gaps on significant issues.

299. At 00.26 Doctor Tristram opened up a conversation with the parents and this is heard on the video/audio and written on the helpful transcript. She mentioned CS. I have listened to the video/audio recording at high volume with headphones on and find as a fact that in response F did say words to the effect that "we" thought that CS was necessary from the start. M said she wanted to get the baby out. Doctor Tristram stated that she did not want to "leave it too long". She said *"we'll slowly get things ready".* She then left the room at around 00.27. It is indicative that she did not write in her notes that she had opened up the CS conversation or explained the risks and benefits of the treatment options to the parents at that time and asked for their choices. I find that she did not. She had not indicated any need for speed. Quite the opposite. She was taking things *slowly*.

300. I consider that Mr Forbes' criticisms of Doctor Tristram at this point are reasonable and valid. I consider that what all reasonable doctors would have done is to set out the options, the risks and benefits and to seek the parents' choices on those options before going to the consultant. In my judgment *Montgomery* applied at this point. Doctor Tristram needed to know, before she checked with the consultant, what the parents' choices were. To obtain their informed choices she needed to inform them of the risks and benefits of the options of CS or NVD with possible ARM (low and high). She should have given them the right to choose CS and asked whether they would accept low or high ARM or ARM at all in the absence of EA

301. I find that if Doctor Tristram had explained the options and asked the parents to choose or indicate their choices before the discussion with the consultant that they would have chosen as they did 9 minutes later at 00.35. They would have chosen CS and rejected ARM. This is subject to the caveat of allowing low ARM once it was explained to them that low (easy) ARM would be needed if the baby's had descended so far by the time they had got to theatre that CS could not be safe or possible or necessary.

302. When Doctor Tristram went to seek advice from Mr Dunster I consider it is unlikely that she informed him or Mr Porter that: (1) EA had been attempted and had failed, so was not available; and (2) ARM was not wanted by M, which meant that high controlled ARM was not available, although low easy ARM would still be available if the head had moved far down; and (3) the parents had already chosen CS.

303. Mr Dunster was not asked those questions so did not answer them in his witness statement and he has passed away. Mr Porter was not asked the question as to what he would have done if fully informed of the ARM objections, the lack of EA and the parents' choice for CS. Mr Tuffnell did not opine on what a reasonable consultant

would have done if given all of that information. Mr Forbes advised that once the parents had chosen CS that should have been agreed to. I infer that Mr Dunster would have advised Doctor Tristram to grant the parental choice for CS if he had been fully informed of the circumstances and the parents' choices.

304. In the event in my judgment Doctor Tristram did not provide the full and necessary information to Mr Dunster so that Mr Dunster could make an informed decision on his advice. She reported the CTG as satisfactory in some detail and noted that. She made no note of reporting about ARM or EA or the parental choice for CS. I find that she recommended ARM without reciting the parents' preference for no ARM and the unavailability of EA. I find that she omitted to mention the attempted and failed EA. She did not pass on to the consultant F's clearly expressed statement that they both wanted CS from the start. In the circumstances I find that it is not surprising that the consultant said go to theatre and try ARM. I find that he was not adequately informed.

305. At 00.35 Doctor Tristram returned to the delivery suite and a fuller, but still wholly unsatisfactory, discussion about options did take place. All Doctor Tristram wrote was "explained the situation to the parents". She did not write that she explained the options and the risks and benefits and then obtained a choice and written consent for that choice. In my judgment the note Doctor Tristram made evidenced the parents' clear choice of CS under GA. I also accept the parents' evidence on this issue. There is no note of a balanced informed discussion of options. Despite the parents' clear choice for CS Doctor Tristram ignored it and pressed ahead with her plan for ARM and noted: *"Explained that transfer to theatre and then reassessment would be best."* She did not write that she consented M.

306. I accept the Claimant's criticism of this approach as too paternalistic. Patient choice was being ignored at this stage. Doctor Tristram was, on her own evidence, proceeding slowly with ARM without having obtained permission to do a high one and she did not record M's permission to do so. The parents were requesting CS and in my judgment at that time in the circumstances Doctor Tristram should have agreed to that request (subject to reassessment to see if the baby's head had descended so far that CS was no longer the right option once they were in theatre).

307. It is a mystery, unresolved by the live evidence, as to when the written consent form was signed by M. It was dated 3.2.1996 so the most likely time would have been in the delivery suite. However it was a consent to "ARM/CS". I note that ARM was written before the CS. It says little more. The rest is standard form. On balance I find that it must have been signed around 00.35 after the discussion in which the parents stated that they wanted CS and Doctor Tristram was still advising and planning ARM. I find that the consent given was not properly obtained because the two different types of ARM were not explained and the effect of the lack of EA was not explained and the

need for speed was not explained and because the parents did not want ARM they wanted CS.

308. The CTG trace was removed at 00.40. I find that from then on the fetus was not monitored in an adequate way which could be reassuring to Doctor Tristram that the baby was well. The evidence of Mr Forbes and the advice in the medical textbooks, which I accept, was that if the fetus is not being safely monitored the urgency of the delivery is increased considerably for a second twin with a birth to birth period now well over 30 minutes. I find that delay past 30 minutes, with the knowledge at the time in 1996, was permissible with adequate fetal monitoring, but not without. I do not find that the two hand held (query Doppler) snapshots of the FHR equated to adequate fetal monitoring.

309. According to the midwives M was wheeled round to theatre at 00.40 and on the table by 00.45. The anaesthetic notes record that "premedication" was given at 00.40 which, if correct and given in theatre, meant that the midwives' timings were made a few minutes later. I find that her arrival time was in fact probably minutes before 00.45.

310. On Mr Forbes' evidence I find that the further assessment in theatre should have been very quick to determine whether the head had descended well into the pelvis. This might have needed 1 minute. But it had not descended. A further unnecessary discussion then took place. The noted discussion, which I find shows that Doctor Tristram was still keen to do ARM, is indicative to me that she had not accepted the parents' request for CS. She was in effect recommending high controlled ARM with no EA. She may thereafter have needed (if necessary – albeit unlikely) to perform an external version and then maybe an IPV. It is an agreed fact that the parents refused ARM. This refusal was predictable because it had been fully noted in the AN records and the labour ward front sheet and should have been elicited at 00.26 and was clear from their two earlier (rejected) efforts to choose CS.

311. Matters were then delayed further by Doctor Tristram needing to have a second discussion with Mr Dunster to approve the choice of CS. In my judgment, had he been fully and adequately informed in the first conversation, this delay would not have arisen. The additional words which Doctor Tristram squeezed into the first written part of her note are instructive. She added between the lines: *"Explained to pt that we agree to LSCS although would not be our first option."* The departmental policy rings through loud and clear in that addition. The midwife's note records a discussion with Mr Dunster at 00.52 hours. That would be 7 minutes or perhaps more likely 9-10 minutes after M's arrival in theatre on the basis of my finding of arrival a few minutes before 00.45.

312. I find that after the discussion with Mr Dunster and the agreement of Doctor Tristram to carry out a CS the Venflon was re-sited by the anaesthetist and according to the midwife's note that occurred at 00.52. I find that the anaesthetic process was being delayed. The anaesthetist's records show the maternal blood pressure and MHR were being recorded from 00.50 but do not indicate when M was fully under so that any operation could start.

313. Birth occurred a 01.03 (or 01.02 according to the anaesthetist's note). Resuscitation occurred 3-3.5 minutes later on the expert evidence when the FHR arose above 100 BPM.

Findings on the allegations of Breach

314. Whether these findings are framed in terms of a failure to provide M with appropriate treatment options at the necessary time or a failure to listen to and agree to M's choice of CS or negligent delay in providing treatment, in my judgment the Defendant's negligence and negligent delay started at around 00.25-00.26. I find that the clinician failed to discuss the necessary reasonable treatment options with the parents, failed fully to inform them of the risks and benefits of the reasonable options and failed to allow them to make an informed choice, then failed to act on their informed choice and failed to act urgently. I find that Doctor Tristram was taking things too slowly. In my judgment all reasonable obstetricians at that time should have been clear in their own minds that M needed to be taken to theatre in the specific circumstances as the 30 minute inter twin mark approached. The clinician ought to have provided M with the risks and benefits of CS and NVD involving high ARM and the risks of cord prolapse and placental abruption and the possible need for IPV and should have been seeking to persuade M to choose CS. That would not have taken long because it is what the parents wanted. It would not have taken long to obtain Mr Dunster's approval for CS if full information had been provided to him. Before she left the delivery suite Doctor Tristram ought to have informed the midwife there to get M ready to go to theatre. Instead the midwife put M in stirrups because she had been given no indication what was going to happen.

315. I find that the time of setting off to theatre, the transfer to theatre, the induction of the anaesthetic and the time taken to complete the CS, were each delayed by Doctor Tristram taking it *slowly*. Also the three consultations with the parents instead of one and the failure to make arrangements to transfer M to theatre at 00.26 - 00.28 *quickly* and the two discussions with the consultant caused unreasonable delay.

316. I find that the information given by the acting registrar was inadequate for her to obtain proper advice from the consultant. I consider that as soon as the CTG was removed, causing the baby's FHR no longer to be monitored adequately, the need for speed was clear and there was negligent delay because that was not properly appreciated or acted upon. In my judgment there needed to be only one discussion.

The second discussion at 00.35 should have taken place at 00.26 and that caused further delay. I find that the clinician failed adequately to explain the procedures of high ARM to the parents at 00.26 and 00.35 and failed to recommend CS and failed to allow them to make informed choices. I find that the clinician failed to agree to the parents' choice for CS (subject to a caveat for assessment in theatre) at both 00.26 and 00.35 and so the consent taken at 00.35 was not informed consent. I find that with reasonable speed M would have set off to theatre earlier. I find that there was further delay once theatre was reached because the anaesthetic was not set up straight away on arrival but was delayed pending second discussion with the parents in theatre and the phone call with Mr Dunster. If the anaesthetic had been set up straight away the operation would have started earlier. I consider that the clinician failed properly to understand that the two FHR readings taken at 00.45 and 00.52 were potentially unreliable snap shots and were not sufficient to rely upon to assume fetal wellbeing. If the clinician was reassured by them she should not have been. I find that the time taken to carry out the CS should have been around 6 minutes (I accept Mr Forbes' evidence on this) and a maximum of up to 10 minutes would still have been non negligent, however it took about 13 minutes. I find that timing was too slow.

317. Bringing all of these overlapping matters together in my judgment in total the negligent delay caused by the clinician's breaches was probably a minimum of 5 minutes and a maximum 8 minutes – with a mid point of 6.5 minutes being the most probable delay. I find that the Claimant should have been delivered by 00.55 – 00.58. I find on the but for prognosis that had birth been achieved earlier the resuscitation time would have been reduced by probably 1-2 minutes.

318. I base these findings on the opinion of Mr Forbes which I accept and prefer to the opinion of Mr Tuffnell. I reject Mr Tuffnell's evidence on the standard of care and the timings between 00.26 and 01.03. I consider that the clinician's inexperience was the reason for the delay. She was put in a very difficult position, after midnight at the weekend, with no on site consultant supervision. Doctor Tristram herself was doing her very best and being respectful of the hierarchy in the hospital.

319. I should mention here that I have well in mind the wise words of Martin Spencer J from his judgment in *ML v Guys and St Thomas'* [2012] EWHC 2010 when making the above findings of fact on consent and maternal choice.

> "90. Before leaving this issue, I should say something about the duty of a hospital where a woman requests a caesarean section. It seems to me there is the world of difference between a woman who requests a caesarean section in the ante-natal period and a woman who requests a caesarean section in the throes of labour pain. In the former situation which, as it seems to me, the

> NICE guidelines are intended to address, such a request needs to be considered carefully and fully by the obstetric staff with the risks and benefits being fully discussed and with time for thought and reflection being given. If, after such discussion and appropriate advice, a woman nevertheless states that she wishes to have a caesarean section, then, as Mr Tufnell conceded, she would be entitled to have one. However, the situation seems to me to be quite different where a woman is in labour and in extreme pain. As Midwife Kaka-Are and the doctors confirmed, such a request is frequently heard and is more a cry for help because of the pain. In those circumstances, the appropriate response, as here, is to deal with the pain and then review the matter and see whether the request was or was not "serious". By that I do not intend to suggest that any request for a caesarean section is not serious but an obstetrician or a midwife would be failing in their duty to both mother and baby if they simply took every such request at face value without exploring and addressing the underlying reason. I regard it as significant that, in her statement of 1 November 2010, SL referred to feeling "Much more coherent" after she had been given the epidural. This is a tacit admission that, before the epidural and given the pain she was in, she was less than coherent and I suspect this will be the case for many women undergoing labour for the first time or, indeed, not for the first time. It would in fact be impossible to have the kind of discussion of risk and benefit envisaged by Mr Forbes and the NICE guidelines with a woman who is not wholly coherent and thinking straightforwardly and logically because of the extreme pain she was in and it could be regarded as irresponsible for a midwife or obstetrician to attempt to have such a discussion with a woman before her pain had been addressed. It seems to me that this situation is qualitatively different to the situation in the ante-natal clinic where a request for a caesarean section is made."

The difference in the present case in my judgment was that F was in the delivery room at 00.26 and able to speak for M and they both chose CS. In addition M clearly wanted CS as she made clear just 9 minutes later at 00.35.

The duration of the PHI

320. All of the experts advise that the Claimant has suffered acute PHI. The range of opinion about the duration of the PHI suffered by the Claimant is between 14-18 minutes (Doctor Newton) and 17.5-22.5 (Doctor Rosenbloom). The neonatologists defer to the paediatric neurologists because the former do not take into account the

pattern of symptoms when advising on duration and they all acknowledge that pattern of symptoms is one of the five relevant factors. The evidence from the neuro-radiologists likewise was given in deference to the paediatric neurologists. I prefer the evidence of Doctor Newton on the duration of the PHI. I was impressed by his reasoning that the Claimant's retained cognition, as exemplified by the reports of Doctor Shillito and Sarah Gregory, indicate a shorter duration than 20 minutes. Interestingly that fits with the Aliquot theory categorisation of Doctor Rosenbloom for the period of 15-20 minutes of PHI better. I also consider that Doctor Newton's approach to the back calculation from the resuscitation of the Claimant was more balanced and I accept his explanation of the reasons for the high snap shot readings for the FHR taken in theatre being inaccurate. As a mid point I shall take approximately 16 minutes as the likely duration of the acute PHI suffered by the Claimant but the range Doctor Newton advised was 14-18 minutes.

321. I also find that the Claimant was suffering bradycardia during those 16 minutes hence from 00.50 until resuscitation at around 01.06. The bradycardia start range being from 00.48 to 00.52

Causation in fact

322. The acute PHI which was endured by this Claimant when she was being born was avoidable by the necessary prompt action by the obstetrician and by the obstetrician listening to and acceding to the parents' wishes in relation to their reasonable treatment options. In my judgment the parents should have been offered CS during a proper informed discussion between 00.25 and 00.28.

323. I consider that the delay caused by the breaches of duty was causative of the whole of the Claimant's brain damage which the experts agreed would not have occurred in the first 10 minutes of acute PHI and only started to accumulate after 10 minutes. Saving 6.5 minutes of PHI (a minimum of 5 and a maximum of 8 minutes) would on the balance of probabilities in my judgment have avoided all of the Claimant's brain damage.

324. I heard considerable argument on material contribution and apportionment. This was pleaded and founded on Doctor Rosenbloom's Aliquot theory and what to do if my factual findings led to a split in factual causation between negligent PHI of say 2-5 minutes and non negligent PHI for the remainder of the duration. In deference to those detailed submissions and the considerable evidence provided to the Court and in the light of the fact that I can only find on the expert evidence before me, and have found, a range of timings for the duration of PHI and the duration of the negligent delay, I will consider causation in law and apportionment.

Causation in law

325. On the basis that at the extreme ends of the ranges of my factual findings only part of the damaging PHI would have been caused by the Defendant's breaches. The Claimant carries the burden of proving that the breaches caused injury distinct from and beyond the injury caused by the PHI which was non negligent.

326. The first issue is whether on the but for test of causation the evidence is sufficient to prove that the breach PHI caused injury to the Claimant rather than the non breach PHI. The agreed evidence was that every minute of acute PHI over the first 10 minutes caused increasing or incremental brain cell deaths which could number in the tens or hundreds of thousands. I find that this damage minute by minute was more than de minimis. In addition each minute caused increased functional outcome disability and injury. So to that extent causation is proven on the but for test. However to assess the quantum relevant to the breach the Court needs to decide what the Claimant's functional outcome would have been but for the breach PHI. It is here that the expert evidence from the paediatric neurologists conflicted and the evidence from all of the medical experts (including from Doctor Rosenbloom) was to the effect that detailed and accurate quantification of functional outcome is impossible.

327. I find on the evidence before me, that medical science is unable to identify with generality, accuracy or detail the functional effect of each minute of brain cell deaths. Both experts, Doctor Newton and Doctor Rosenbloom, advised that they could not predict the pattern or severity of the resulting functional disability from a minute by minute increase in the duration of the PHI suffered.

328. Doctor Newton, Doctor Dear, Doctor Fox and Doctor Rosenbloom provided the normal sequence in which the various organs or tissues in the brain are affected by PHI. The organs which have the highest metabolic needs are damaged first. The probable order of damage is as follows:

328.0 The deep grey matter first, including the Basal Ganglia, initially the Putamen and the Globus Pallidus then the Thalamus;
328.1 Then spreading into the cortex, the Pre and Post central Gyri.
328.2 Then spreading throughout the whole brain.

However the evidence did not prove that this progression is wholly sequential (one after the other) there is overlap (more and more structures being damaged contemporaneously). There was agreement that the damage is non linear. Each organ in the brain falls off a cliff at certain unknown times.

329. Doctor Newton advised that it is not possible to advise on the functional outcome with any scientific accuracy. Doctor Rosenbloom advised that it was possible but only by using 5 minute aliquots. For smaller aliquots, say of 2-4 minutes, the functional outcome was too uncertain for medical science to be able to advise upon.

330. So having found that even a minute of PHI made a material contribution to the Claimant's brain damage, should this Court apportion the quantum and if so how?

331. In my judgment applying only fairness as the test the answer is clearly that apportionment should be applied. The 1st Defendant should only be liable for the brain damage which it caused not that which would have occurred in any event. But there are evidential challenges to that simple answer which undermine it. The experts agree that there is no linear relationship between minutes of PHI and functional outcome. It is scientifically unclear. So what should be the correct answer in law on causation? 100% recovery or apportionment?

The burden of proof

332. The burden of proof rests on the Claimant to prove causation against the 1st Defendant on the balance of probabilities. In most cases this is obvious. The burden is the same in a clinical negligence as in other personal injury cases: see *Bolitho v City and Hackney HA* [1998] AC 232 and the ruling at page 239 by Lord Browne-Wilkinson.

> "Where, as in the present case, a breach of a duty of care is proved or admitted, the burden still lies on the plaintiff to prove that such breach caused the injury suffered: *Bonnington Castings Ltd. v. Wardlaw* [1956] A.C. 613; *Wilsher v. Essex Area Health Authority* [1988] A.C. 1074. In all cases the primary question is one of fact: did the wrongful act cause the injury? But in cases where the breach of duty consists of an omission to do an act which ought to be done (e.g. the failure by a Doctor to attend) that factual inquiry is, by definition, in the realms of hypothesis. The question is what would have happened if an event which by definition did not occur had occurred."

333. This ruling highlighted the need to prove the "but for" prognosis. The need for proof was emphasised in *Kay's Tutor v Ayreshire* [1987] S.C. HL 145 in which the claimant failed to satisfy the burden of proof on causation due to lack of evidence that the massive dose of penicillin he received (in breach) to combat meningitis could have caused or materially contributed to the deafness he suffered after the meningitis resolved (or an increased risk thereof). Meningitis was a known cause of deafness and deafness occurred in one third of pneumococcal meningitis cases. The trial judge provided his own theory, not discussed with the medical experts in evidence, but that was a different issue. On proof of causation Lord Keith of Kinkel ruled at p 16 :

> "Had there been acceptable medical evidence here that an overdose of penicillin administered intrathecally was known to increase the risk that the meningitis, which the penicillin was intended to treat,

> would cause deafness, the decision would have been in point. It would be immaterial that medical science was unable to demonstrate the precise mechanism whereby the risk was increased. But as it is, there is in the instant case no such medical evidence. It is true that there are few recorded cases of overdoses of penicillin intrathecally administered for the purpose of treating actual or suspected meningitis. But the paucity of such cases, none of which supports the suggested causal connection, cannot in itself make good the lack of appropriate evidence."

334. This issue was also highlighted in relation to causation and apportionment in *Tahir v Haringey HA* [1998] Lloyds Rep Med 104, in which the Court of Appeal overturned the judge's rough and ready apportionment because the evidence did not support it and the Claimant had failed to prove that the negligent 3 hours of delay caused by the Defendant in starting a spinal operation had made any difference to the functional outcome of the Claimant.

The but for test

335. The but for test is the dominant test in causation in most personal injury and clinical negligence cases. The classic exposition of the test is in *Barnett v Chelsea Hospital* [1969] 1 Q.B 428. The deceased was poisoned by his work colleagues who put arsenic in his tea. He went to hospital with stomach pains. He was treated negligently by being discharged. He later died. His widow sued the hospital. Her claim was dismissed because causation was not established. He would have died anyway even if the hospital had not been negligent. The key factual aspect of that decision of Neild J. was that B.A.L, the only available antidote for arsenic poisoning, would most probably not have been provided by the hospital in time to save him in the timeline but for the breach (p439).

336. In *Fairchild* v *Glenhaven* [2002] UKHL 22, Lord Bingham summarised the but for test as follows (at p 44A):

> "In the generality of personal injury actions, it is of course true that the claimant is required to discharge the burden of showing that the breach of which he complains caused the damage for which he claims and to do so by showing that but for the breach he would not have suffered the damage."

337. I take into account that the but for test is not perfect because it rests on the balance of probabilities. Lord Phillips, in *Sienkiewicz v Grief (UK) Ltd* [2011] UKSC 10, pointed out the unfairness inherent within the but for test thus (at para 16):

> "16 It is a basic principle of the law of tort that the claimant will only have a cause of action if he can prove, on balance of probabilities, that the defendant's tortious conduct caused the damage in respect of which compensation is claimed. He must show that, but for the defendant's tortious conduct he would not have suffered the damage. This broad test of balance of probabilities means that in some cases a defendant will be held liable for damage which he did not, in fact, cause. Equally there will be cases where the defendant escapes liability, notwithstanding that he has caused the damage, because the claimant is unable to discharge the burden of proving causation."

So the but for test is inherently imperfect. A defendant found liable because there was a finding that on the balance of probability, at say 55%, the breach caused the damage, will pay for all of the damage. Yet if the standard of proof fails, at say only a 45% likelihood that the breach caused the damage, no damages are awarded. This is the rough and ready nature of causation in tort law.

Scientific uncertainty, gaps and impossibility of proof

338. Human science is not all knowing or all seeing and there are gaps in our knowledge: scientific gaps. Lord Bingham called them "rocks of uncertainty" in *Fairchild*.

339. Five main types of tricky causation issues are identifiable in scientific gap cases:
    1. Multiple causative factors, one negligent and the others non negligent (naturally occurring/idiopathic/genetic/environmental etc.).
    2. One known causative factor, part of which was an innocently inflicted and part of which was caused by the breach.
    3. Multiple different defendants responsible for exposing the claimant to the same causative factor.
    4. Multiple known risk factors.
    5. Multiple different outcomes which can occur from one known causal factor.

340. In this case situations 2 and 5 apply if the extremes of the ranges I have found are used. Part of the PHI was caused by negligence and part would have arisen anyway. So what causation test is to be applied?

341. In a clinical negligence claim where the state of medical knowledge is insufficient to discern what the breach caused by way of functional disability, the challenge for the Claimant is how to prove the breach caused part of the injury to start or to worsen and if it caused worsening then by how much. If the mechanism is beyond scientific knowledge, "but for" causation is or may be impossible to prove. But the Courts have not walked away from tackling this challenge. Many of the cases involve occupational disease but the principles are the same for clinical negligence.

Material contribution to the injury

342. The first step the law took towards resolving the scientific gap challenges was in an occupational disease case: *Bonnington v Wardlaw* [1956] AC 613, in which one noxious factor (silica dust) was being considered as the known cause of the injury/disease (pneumoconiosis), but what was not known was whether the innocent or the guilty exposure to that noxious factor actually caused the disease. The majority of the dust which the claimant had breathed in was from an innocent source and the minority from a negligent source. Science could not prove that the guilty dust caused the disease on the but for test.

343. The House of Lords decided that the silica dust inhaled due to the defendant's breach of statutory duty made a material contribution to the claimant's pneumoconiosis disease and gave judgment in the claimant's favour. Lord Reid at p 620 ruled:

> "It would seem obvious in principle that a pursuer or plaintiff must prove not only negligence or breach of duty but also that such fault caused or materially contributed to his injury, and there is ample authority for that proposition both in Scotland and in England."

Dealing with how much would be material Lord Reid ruled at p 621:

> "The medical evidence was that pneumoconiosis is caused by a gradual accumulation in the lungs of minute particles of silica inhaled over a period of years. That means, I think, that the disease is caused by the whole of the noxious material inhaled and, if that material comes from two sources, it cannot be wholly attributed to material from one source or the other. I am in agreement with much of the Lord President's opinion in this case, but I cannot agree that the question is: which was the most probable source of the respondent's disease, the dust from the pneumatic hammers or the dust from the swing grinders? It appears to me that the source of his disease was the dust from both sources, and the real question is whether the dust from the swing grinders materially contributed to the disease. What is a material contribution must be a question of degree. A contribution which comes within the exception de minimis non curat lex is not material, but I think that any contribution which does not fall within that exception must be material."

The trigger for material contribution being the test appears to have been the impossibility of proving which of the innocent or the guilty dust actually caused the

disease. The defendant did not seek a reduction of damages by apportionment so none was made. No other cause for the disease was put in evidence.

344. Seven years later in *Nicholson v Atlas* [1957] 1 W.L.R 613, the House of Lords used the same test and pushed it forwards by recognising that there was an inference of material contribution from the guilty dust in comparison with the innocent dust. Per Viscount Simmonds at p 615:

> "It is admitted by the respondents that the deceased inhaled while in their employment the particles which caused his illness and ultimately his death, but they contend that it was not proved that particles which were wrongfully emitted, or which, having been innocently emitted, were allowed, through inadequate ventilation, to remain within his breathing zone, made a material contribution to his illness."

At p 620:

> "It follows that owing to the default of the respondents the deceased was exposed to a *greater degree of risk* than he should have been, and, though it is impossible, even approximately, to quantify the particles which he must, in any event, have inhaled and those which he inhaled but need not have, I cannot regard the excess as something so negligible that the maxim "de minimis" is applicable. Accordingly, following the decision in *Wardlaw's* case, I must hold the respondents liable." (My italics in line two).

> Lord Cohen stated at P 622 that:
> "Pneumoconiosis is a progressive disease. The longer a workman is exposed to an intense cloud the graver must be the risk of infection."

It is noteworthy in this judgment that only one noxious causal factor was in play on the evidence and the Court was focussing on material contribution to the risk.

345. In the 1970s in *McGhee v NCB* [1973] 1WLR 1, the House of Lords considered this "impossibility of proof" issue again in the context of a single noxious causal factor. A claim was brought by a worker who suffered dermatitis due to the effects of brick dust on his skin. The exposure was innocently deposited at work but was maintained there after work in breach of the defendant's duty to provide showering facilities. It was admitted that the brick dust caused the disease but denied that the guilty dust did so. The scientific evidence showed that the dust and micro-abrasions injured the underlying cells but the precise mechanism by which one person contracted the disease when another did not was not known. Nor could the claimant prove that washing off the dust

before cycling home would have prevented the disease emerging so the claimant could not satisfy the but for test. The House of Lords found for the claimant on causation on two different grounds. The majority favoured dropping the test from material contribution to the disease to material contribution to the risk of suffering the disease. Lord Kilbrandon considered that on the balance of probabilities the lack of washing caused the disease.

Per Lord Reid @ p 3G:

> "Dermatitis can be caused, and this dermatitis was caused, by repeated minute abrasion of the outer horny layer of the skin followed by some injury to or change in the underlying cells, the precise nature of which has not yet been discovered by medical science."

> At p 4C:
> "It was held in the Court of Session that the appellant had to prove that his additional exposure to injury caused by his having to bicycle home unwashed caused the disease in the sense that it was more probable than not that this additional exposure to injury was the cause of it. I do not think that that is the proper approach."

> At p 4D:
> "… fault of the defender caused or materially contributed to his injury. There may have been two separate causes but it is enough if one of the causes arose from fault of the defender. The pursuer does not have to prove that this cause would of itself have been enough to cause him injury. That is well illustrated by the decision of this House in *Bonnington Castings Ltd.*
> v. *Wardlaw* [1956] A.C. 613."

> At p 4F:
> "The respondents seek to distinguish *Wardlaw's* case by arguing that then it was proved that every particle of dust inhaled played its part in causing the onset of the disease whereas in this case it is not proved that every minor abrasion played its part. In the present case the evidence does not show—perhaps no one knows --- just how dermatitis of this type begins. It suggests to me that there are two possible ways. It may be that an accumulation of minor abrasions of the horny layer of the skin is a necessary precondition for the onset of the disease. Or it may be that the disease starts at one particular abrasion and then spreads, so that multiplication of abrasions merely increases the number of places where the disease

> can start and in that way increases the risk of its occurrence. I am inclined to think that the evidence points to the former view. But in a field where so little appears to be known with certainty I could not say that that is proved."

Lord Reid then ruled as at p 5B:

> "There may be some logical ground for such a distinction where our knowledge of all the material factors is complete. But it has often been said that the legal concept of causation is not based on logic or philosophy. It is based on the practical way in which the ordinary man's mind works in the everyday affairs of life. From a broad and practical view point I can see no substantial difference between saying that what the defender did materially increased the risk of injury to the pursuer and saying that what the defender did made a material contribution to his injury."

Lord Reid resolved the impossibility of proof challenge by his practical approach. He saw little difference between a material contribution to the risk and a material contribution to the injury. In other cases that difference has been crucial.

346. Lord Wilberforce reached the same conclusion but instead used a fairness approach to what the burden of proof on the claimant's shoulders should be @ p 6D:

> "First, it is a sound principle that where a person has, by breach of a duty of care, created a risk, and injury occurs within the area of that risk, the loss should be borne by him unless he shows that it had some other cause. Secondly, from the evidential point of view, one may ask, why should a man who is able to show that his employer should have taken certain precautions, because without them there is a risk, or an added risk, of injury or disease, and who in fact sustains exactly that injury or disease, have to assume the burden of proving more: namely, that it was the addition to the risk, caused by the breach of duty, which caused or materially contributed to the injury? In many cases, of which the present is typical, *this is impossible to prove,* just because honest medical opinion cannot segregate the causes of an illness between compound causes. And if one asks which of the parties, the workman or the employers, should suffer from this inherent evidential difficulty, the answer as a matter of policy or justice should be that it is the creator of the risk who, ex hypothesi must be taken to have foreseen the possibility of damage, who should bear its consequences." (My italics).

347. Lord Wilberforce took into account that the duty of care was created by the foreseeable risk and considered whether the disease fell within the foreseeable risk created by the breach when determining how rigorous the burden of proof should be in relation to causation. He then applied those principles where impossibility of proof arose.

348. Lord Simon regarded the defendant's breach in failing to provide showers as a failure to effect a "material reduction of the risk" and ruled that such failure was a mirror concept to "substantial contribution to the injury". He considered that any other conclusion would mean that the defendants were under a legal duty which they could, on the present state of medical knowledge, ignore (at p 9).

349. Lord Salmon observed that the expert evidence did not enable one to place a percentage figure on the extent to which the lack of showers contributed to increasing the risk of dermatitis (at pp 12-13) and stated:

> "It is known that some factors materially increase the risk and others materially decrease it. Some no doubt are peripheral. Suppose, however, it were otherwise and it could be proved that men engaged in a particular industrial process would be exposed to a 52% risk of contracting dermatitis even when proper washing facilities were provided. Suppose it could also be proved that that risk would be increased to, say, 90% when such facilities were not provided. It would follow that if the decision appealed from is right, an employer who negligently failed to provide the proper facilities would escape from any liability to an employee who contracted dermatitis notwithstanding that the employers had increased the risk from 52% to 90%. The negligence would not be a cause of the dermatitis because even with proper washing facilities, i.e. without the negligence, it would still have been more likely than not that the employee would have contracted the disease - the risk of injury then being 52%. If, however, you substitute 48% for 52% the employer could not escape liability, not even if he had increased the risk to, say, only 60%. Clearly such results would not make sense; nor would they, in my view, accord with the common law." …
>
> "In the circumstances of the present case, the possibility of a distinction existing between (a) having materially increased the risk of contracting the disease, and (b) having materially contributed to causing the disease may no doubt be a fruitful source of interesting academic discussions between students of philosophy. Such a distinction is, however, far too unreal to be recognised by the common law."

350. I take from these cases the principle that where the but for test cannot be satisfied due to scientific gap impossibility then the law will apply the material contribution to the injury test. If the Claimant can prove the breach made a material contribution to the Claimant's injury which was more than de minimis then damages are to be awarded against the Defendant. In certain (limited) circumstances material contribution to the risk of causing the injury will be used but in the current case before me material contribution to risk is not relevant.

351. There are certain required elements to the material contribution test for causation. Findings of fact have to be made on the evidence and the burden of proof lies on the claimant.

Multiple possible causative factors

352. Multiple possible causative factors were considered in *Wilsher v Essex AHA* [1988] AC 1074 HL. The House of Lords considered causation a clinical negligence case in which a premature baby developed near blindness. Two possible causes were put forwards in the evidence: (1) the condition arose in premature babies idiopathically or without negligence (via 4 different routes) and (2) the defendant's negligence in administering excessive oxygen. Per Lord Bridge at 1081 G:

> "It was equally common ground, however, that RLF may occur in premature babies who have survived without any artificial administration of oxygen and that there is evidence to indicate a correlation between RLF and a number of other conditions from which premature babies commonly suffer (e.g. apnoeia, hypercarbia, intraventricular haemorrhage, patent ductus arteriosus, all conditions which afflicted Martin) although no causal mechanisms linking these conditions with the development of RLF have been positively identified."

353. The trial judge put the burden on the defendant to disprove that the oxygen caused the blindness and gave judgment for the claimant. The Court of Appeal gave judgment for the claimant on different grounds: material contribution to the risk. The House of Lords ruled that the trial judge had failed to make any necessary findings of fact on whether the oxygen caused or made a material contribution to the blindness (the injury) so the case had to be sent back for retrial. Per Lord Bridge at 1082 B:

> "If the judge had directed himself that it was for the plaintiff to discharge the onus of proving causation on a balance of probabilities and had indicated his acceptance of this evidence in preference to the contrary evidence led for the authority, a finding in favour of the plaintiff would have been unassailable."

354. Lord Bridge commented that it was unnecessary to go into the highly complex and technical evidence. However Lord Bridge did go on to consider the material contribution test in *McGhee* (at p 1088 B) and said:

> "I believe that a process of inferential reasoning on these general lines underlies the decision of the majority in *McGhee's* case."

And at p 1090D:

> "The conclusion I draw from these passages is that *McGhee v. National Coal Board* [1973] 1 W.L.R. 1 laid down no new principle of law whatever. On the contrary, it affirmed the principle that the onus of proving causation lies on the pursuer or plaintiff. Adopting a robust and pragmatic approach to the undisputed primary facts of the case, the majority concluded that it was a legitimate inference of fact that the defenders' negligence had materially contributed to the pursuer's injury. The decision, in my opinion, is of no greater significance than that and to attempt to extract from it some esoteric principle which in some way modifies, as a matter of law, the nature of the burden of proof of causation which a plaintiff or pursuer must discharge once he has established a relevant breach of duty is a fruitless one."

355. None of the other four Lords gave reasoned judgments. In my judgment this case does not have direct relevance to the case I am deciding. There is only one causative factor – acute PHI.

Apportionment

356. The next step forwards in the sophistication of the causation test came in some occupational disease cases where there was only one noxious factor causing the disease but apportionment was raised and was justified by the evidence. If the evidence may enable the court to assess the extent of the contribution by the breach factor as opposed to the innocent exposure then the courts will assess and award just that part.

Apportionment in indivisible or trigger injury cases

357. The word "indivisible" has been used when categorising diseases in scientific gap claims and was used by the Claimant in this trial and the Defendants in the Defence before it was amended. It was submitted that the Claimant's symptoms and functional outcome were indivisible because science could not attribute the detail of her functional outcome to any particular minute of PHI. Likewise it was submitted by the Claimant that any one minute or even 5 minutes of negligently caused PHI could not be attributed to any particular injuries or functional outcome suffered by the Claimant.

358. Below is a relevant categorisation of diseases by Lord Phillips in *Sienkiewicz* (citation above) at paragraph 12:

> "*Principles of causation in relation to disease*
> 12. Many diseases are caused by the invasion of the body by an outside agent. Some diseases are caused by a single agent. Thus malaria results from a single mosquito bite. The extent of the risk of getting malaria will depend upon the quantity of malarial mosquitoes to which the individual is exposed, but this factor will not affect the manner in which the disease is contracted nor the severity of the disease once it is contracted. The disease has a single, uniform, trigger and is indivisible."

I draw from this that the injury in such cases is not dose related. The risk of injury may be, in that the more mosquitos around the more likely the claimant is to suffer a bite despite his own protections taken, but once the trigger is pulled the disease progresses unaffected by any further dose.

359. In the next category the risk of trigger injury is a dose build up so a disease may emerge only when the weight of the noxious substance inhaled builds up sufficiently. In the current case this is relevant because the build up of PHI led cumulatively to the start of brain cell damage after 10 minutes duration. By Lord Phillips' definition of this category any increase in dose increases the likelihood the trigger will be pulled by the body's compensating strategies eventually failing. However this category was used by Lord Phillips only in relation to indivisible or trigger diseases like cancer. So the Claimant's PHI does not fall into this category. Lord Phillips defined this category as follows:

> "13 The contraction of other diseases can be dose related. Ingestion of the agent that causes the disease operates cumulatively so that, after a threshold is passed, it causes the onset of the disease. Lung cancer caused by smoking is an example of such a disease, where the disease itself is indivisible. The severity of the disease, once it has been initiated, is not related to the degree of exposure to cigarette smoke."

360. The final category does not relate to trigger injuries. It covers truly dose related injuries and diseases. These are started and then made worse by exposure to more of the noxious substance after they start. These are purely dose related and were called "divisible". Lord Phillips defined this category as follows:

> "14 More commonly, diseases where the contraction is dose related are divisible. The agent ingested operates cumulatively first to

> cause the disease and then to progress the disease. Thus the severity of the disease is related to the quantity of the agent that is ingested. Asbestosis and silicosis are examples of such diseases, as are the conditions of vibration white finger and industrial deafness, although the insults to the body that cause these conditions are not noxious agents. For this reason it is important to distinguish between asbestosis and mesothelioma when considering principles of causation."

361. I do not consider that the term indivisible applies to the Claimant's brain injuries in this case. An indivisible disease is one which starts when triggered and then goes on and gets worse or takes its course whatever the exposure to the noxious substance after the triggering event. These diseases are not divisible in the sense that they are not reduced by stopping the exposure and do not get worse on increasing the exposure. They start and then they progress, like cancer or mesothelioma.

362. Brain damage caused by PHI is not a trigger disease. It does not grow like cancer or mesothelioma once triggered. The spread of brain damage due to PHI is wholly dose dependent. The more PHI the fetus suffers the greater the brain damage. However the word indivisible may apply to the functional outcome caused by one or more minutes of acute PHI. I shall consider that below.

Trigger diseases and material contribution

363. Causation and scientific gaps were analysed in *Fairchild v Glenhaven* [2003] 1 AC 32. The claimant suffered mesothelioma, a fatal cancer which is caused in the majority of cases by inhalation of asbestos fibres. Multiple employers exposed the claimant to asbestos and science could not determine which defendant had in fact caused the claimant to inhale the "guilty" fibres which triggered the disease and which did not. Mesothelioma is a classic trigger disease. The disease is triggered by one or more fibres creating an inflammatory reaction in the lining of the lungs or the pleural layers leading to cells turning cancerous. Once started it does not stop. It emerges years after exposure because the fibres lie in the lung creating the inflammation and the final trigger occurs in its own time, maybe at just one site in just one cell. The disease progression is not dose related, it does not get worse with more exposure after it is triggered. However the risk of contracting the disease is dose related, it is higher when more fibres are inhaled. The House of Lords gave judgment for the claimant. The House relaxed the causation test in the face of the scientific gap which made it impossible for the claimant to prove which defendant was responsible for the guilty fibre/s. *McGhee* was applied. Weighing the injustice to claimants who faced a scientific impossibility of satisfying the but for test, against the injustice to defendants who, having negligently exposed the claimant to noxious substances, might be found liable for a cancer which they had not in fact caused by their guilty particle, the House leaned towards claimants. The decision was not based on inference (per Lord Nicholls at paragraph 45). It was not a change in

the burden of proof. It was based on policy and justice (per Lord Hoffmann at para 56). The mechanics of the decision were that if the defendant created a material increase in the risk of the claimant suffering the disease that would be treated by the courts as a material contribution to the disease in scientific gap occupational disease cases.

364. This extension of the causation test was, on the facts, related to a trigger disease definitely caused by a single noxious substance with multiple potentially liable defendants. In my judgment the extension does not directly apply to the Claimant's case on proof of brain injury because brain damage caused by PHI is not a trigger disease and the material contribution *to the risk* test is not the relevant test.

Apportionment in trigger injury/disease cases

365. Apportionment was carried out in *Barker v Corus* [2006] UKHL 20, which was a trigger injury case. The claimant contracted mesothelioma and there were three different sources of the asbestos exposure which may have caused/triggered the cancer: one was the claimant's own self employment and two were from negligent employers. One of the employers was insolvent and no insurance was uncovered and so was not sued. The House of Lords ruled that the damages awarded against the defendant should be apportioned in relation to the relative duration of and intensity of the negligent exposure compared to the other two sources of exposure. This was because (1) the but for test could not apply due to the scientific gap, (2) the material contribution to the injury test could not apply due to the scientific gap and (3) the material contribution to the risk of contracting the injury was therefore the appropriate test for causation (*Fairchild)* and the risk contribution could be apportioned. The decision was promptly reversed by section 3 of *the Compensation Act 2006* which, in claims for mesothelioma alone, provided for joint and several liability.

366. I am not dealing with a trigger disease case. However the principles are instructive. In my judgment the relevant test in brain injury caused by acute PHI is firstly the but for test and then in relation to the functional outcome the material contribution to the injury (not to the risk of injury) approach. But should damages be apportioned?

Apportionment in divisible injury/disease cases

367. In *Thompson v Smiths* [1984] Q.B. 405, a deafness case in which the Claimant sued his employer for exposure to noise at work, some exposure was non negligent and the rest was negligent. Apportionment was achieved because deafness was divisible and dose related. Mustill J ruled as follows (p443D):

> "The defendants as well as the plaintiffs are entitled to a just result. If we know - and we do know, for by the end of the case it was no longer seriously in dispute - that a substantial part of the impairment took place before the defendants were in breach, why in fairness should they be made to pay for it? The fact that

> precise quantification is impossible should not alter the position."

And at G:

> "Thus, whatever the position might be if the court were to find itself unable to make any findings at all on the issue of causation and was accordingly being faced with a choice between awarding for the defendants in full, or for the plaintiffs in full, or on some wholly arbitrary basis such as an award of 50 per cent., I see no reason why the present impossibility of making a precise apportionment of impairment and disability in terms of time, should in justice lead to the result that the defendants are adjudged liable to pay in full, when it is known that only part of the damage was their fault. What justice does demand, to my mind, is that the court should make the best estimate which it can, in the light of the evidence, making the fullest allowances in favour of the plaintiffs for the uncertainties known to be involved in any apportionment. In the end, notwithstanding all the care lavished on it by the scientists and by counsel I believe that this has to be regarded as a jury question, and I propose to approach it as such."

368. I find myself in agreement with Mustill J's approach to try to achieve fairness despite scientific gaps.

369. In *Holtby v Brigham* [2000] 3 All E.R. 421 CA, an asbestosis case in which it appears that the progression of the disease had a linear relationship with the duration or level of exposure (cumulative harm), the extent of the breach exposure was assessable and the claimant was only awarded that part of the damage caused by the breach exposure. Stuart-Smith LJ explained that in *Bonnington* and *McGhee* the defendants had argued an all or nothing defence. Neither had raised the issue that the court should assess the contribution by the breach factor. However apportionment was raised in *Holtby* and the damage was held to be assessable. The judge had held that:

> "The evidence is clear, namely that the degree of exposure to asbestos dust makes a difference to the degree to which a particular patient will suffer the disease. Quantification is, however, difficult. Different people respond differently to the inhalation of asbestos, and they respond at different rates at different points of time. Whilst there is a cumulative effect recognised by both specialists, the mere fact that half his working life was with the defendants cannot do anything other than produce a reason for taking that factor into account. Any mathematical approach is clearly unsupportable on the

> evidence. In the end my assessment is based on the way this matter was put by Dr Page:
>
> > 'It is cumulative exposure which causes the asbestos and aggravates it … if the plaintiff had sustained exposure to asbestos dust only whilst working for the Defendants his condition would probably be less."
>
> The defendants are liable only for that damage which they have caused, but the quantification of that factor is difficult. Whilst there is no mathematical division to be made in medical terms, for the purpose of assessment I have felt bound to apply a discount factor and I have done so in the amount of 25 per cent."

On appeal Stuart-Smith LJ upheld the judge's apportionment thus at paragraph 25.:

> "It might be said that the judge should have made the defendants liable only to 50 per cent. If the other employers had been before the court, then subject to exposure which ought to be considered *de minimis*, I think this is what he would have done. As it is he erred on the side of generosity to the claimant. No one criticises him for that. This method of dividing responsibility on a time exposure basis is, I understand, adopted among insurers in such cases as these. In the absence of some unusual feature, such as for example periods of exposure to a particularly dangerous blue asbestos during some periods, that seems to me to be not only the sensible, but correct approach in law. In practice, many years afterwards, such distinctions are likely to be impossible to prove."

370. Stuart-Smith LJ also commented that it would be best in future if defendants pleaded apportionment to raise the issue even though strictly it was a legal matter which did not need to be pleaded because a defendant is only liable for the damage which the claimant can prove that defendant caused. So the judge's approach to get around the scientific gap impossibility of proving that the causative factor was connected to any precise functional deficit was clearly approved in the Court of Appeal. The slim evidence needed to support that apportionment was the evidence of Doctor Page.

371. In *Allen v British Railways* [2001] ICR 942, the Court of Appeal continued the broad brush approach to apportionment in a divisible disease case (vibration white finger). Schiemann LJ gave the judgment. At paragraphs 20-23 the Court ruled that:

> "20 … (iii) However in principle the amount of the employer's liability will be limited to the extent of the contribution which his tortious conduct made to the employee's disability, (iv) The court must do the best it can on the evidence to make the apportionment

> and should not be astute to deny the claimant relief on the basis that he cannot establish with demonstrable accuracy precisely what proportion of his injury is attributable to the defendant's tortious conduct, (v) The amount of evidence which should be called to enable a judge to make a just apportionment must be proportionate to the amount at stake and the uncertainties which are inherent in making any award of damages for personal injury.
> 21 The application of those propositions should lead to a just and principled result. We mention by way of coda that this approach seems to accord with the view of the authors of the *American Law Institute Restatement of the Law, Torts,* 2d (1965), section 433 A(e):
>
> > "Apportionment may also be made where a part of the harm caused would clearly have resulted from the innocent conduct of the defendant C himself, and the extent of the harm has been aggravated by his tortious conduct.""
>
> "*Causation and apportionment: was the judge entitled to conclude that 50% was an appropriate figure for Mr Allen?*
> *(A) Preliminary observations*
> 23 (i) Although these cases were test cases, this particular issue is a pure question of fact dependent upon each individual claimant. This issue is therefore not one of principle and the amounts at stake are so relatively small that this point would never have reached this court had it not been regarded as wrapped up in the issues of principle, (ii) The question of attribution of part of an injury to a particular defendant in a case such as the present is one on which a full and detailed inquiry would be expensive in time and money in a way totally out of proportion to the amount at stake. In those circumstances there is in principle much to be said for judges at first instance doing what Smith J did in the present case and adopting a broad brush approach."

372. This approach mirrors Mustill J's approach in *Thompson*. I must also take into account that in the present case the potential damages award is very large and so the broad brush approach is not as relevant.

373. The same reasoning applies where the defendant raises contributory negligence against the claimant in relation to the exposure to the single noxious factor causing the disease. So if some of the factor to which the claimant was exposed was inhaled due to his own negligence and some was inhaled due to the defendant's negligence and if this is capable of assessment by the court, damages will be reduced under the *Civil Liability (Contribution) Act 1978.*

374. In my judgment these authorities would support a ruling in the present case that a fair way to apportion the damages in a brain damage case caused by acute PHI at birth would be by way of a percentage based on the relative durations of the PHI caused by the breach compared to the PHI which would have been suffered in any event. This is so even though none of the parties and none of the medical experts supported the percentage apportionment approach in this case until closing when defence counsel, in answer to a question from the Court, did support percentage apportionment based on relative PHI duration. I consider apportionment in law to be a judicial decision arising from the evidence not the medical decision of an expert. But is the evidence sufficient to permit apportionment?

The causation test in clinical negligence cases where there is a scientific gap

375. I now come to consider how judges in clinical negligence cases have decided the test for causation and apportionment where there is a scientific gap.

376. In 2008 the Court of Appeal addressed causation and whether the material contribution test can be applied in clinical negligence claims in *Bailey v Ministry of Defence* [2008] EWCA Civ 883. The claimant suffered a gall stone and underwent surgery. Following surgery she became weak and suffered pancreatitis and underwent further surgery for a liver bleed and sepsis. Later, when she was very weak, she vomited and inhaled her own vomit and suffered cardiac arrest and hypoxia. Foskett J held that there were various cumulative causes for her weakness such that she could not clear her airway when she vomited. These included (1) negligence in her treatment and (2) pancreatitis, the surgery for her gall stone and many others. The judge held that the breach materially contributed to her weakness and he awarded 100% of the damages. On appeal Waller LJ gave the lead judgment dismissing the appeal in relation to causation. At paragraph 46 he ruled:

> "46. In my view one cannot draw a distinction between medical negligence cases and others. I would summarise the position in relation to cumulative cause cases as follows. If the evidence demonstrates on a balance of probabilities that the injury would have occurred as a result of the non-tortious cause or causes in any event, the claimant will have failed to establish that the tortious cause contributed. Hotson's case exemplifies such a situation. If the evidence demonstrates that "but for" the contribution of the tortious cause the injury would probably not have occurred, the claimant will (obviously) have discharged the burden. In a case where medical science cannot establish the probability that "but for" an act of negligence the injury would not have happened but can establish that the contribution of the negligent cause was more than negligible, the "but for" test is modified, and the claimant will succeed.

> 47. The instant case involved cumulative causes acting so as to create a weakness and thus the judge in my view applied the right test, and was entitled to reach the conclusion he did"

377. In *Bailey* there was clearly an evidential impossibility over proof of which causative factor caused the claimant to fail to clear her airways after vomiting. So the but for test could not be satisfied and the material contribution test was used instead. There was no argument raised on apportionment in the appeal. In addition it seems clear that the various cumulative causes could not be said to have had a linear relationship to the outcome so apportionment was impossible.

378. In 2012 in *Popple v Birmingham* [2012] EWCA Civ 1628, the Court of Appeal upheld the judge's findings on causation in a Cerebral Palsy case caused by PHI at birth. The judge held that the evidence did not permit any finding on whether the PHI lasted 15 or 20 minutes. At paragraph 79 Ward LJ considered the scientific gap rationale for using the material contribution test for causation and upheld the judge's ruling that 100% of the damages should be awarded where the negligence made a material contribution to the brain injuries. However there was no argument made about apportionment in the appeal.

379. In 2016 the Privy Council considered causation and material contribution and whether sequential causal factors make any difference to the test, in *Williams v Bermuda* [2016] UKPC 4. The hospital's negligence was a delay of over 2 hours before an operation for appendicitis which meant that the claimant had endured moderate suffering during the delay and then post operation complications. The judge dismissed the claim for complications because he found it failed on causation and awarded of 2,000 dollars for the suffering during the delay. The claimant appealed. The appeal court overturned the causation decision and the trial judge later assessed the quantum of the complications at 60,000 dollars. The Privy Council dismissed the defendant's appeal on causation. Lord Toulson noted:

> "31 As Professor Sarah Green has succinctly observed (Causation in Negligence (2015), chapter 5, p 97):
>
> > "It is trite negligence law that, where possible, defendants should only be held liable for that part of the claimant's ultimate damage to which they can be causally linked . . . It is equally trite that, where a defendant has been found to have caused or contributed to an indivisible injury, she will be held fully liable for it, even though there may well have been other contributing causes . . ."

380. In relation to the correct test for causation the defendant sought to make a distinction between simultaneous causal factors and consecutive causal factors but Lord Toulson rejected this submission and ruled as follows:

> "39 The sequence of events may be highly relevant in considering as a matter of fact whether a later event has made a material contribution to the outcome (as *Hotson v East Berkshire Health Authority* [1987] AC 750 illustrates), or conversely whether an earlier event has been so overtaken by later events as not to have made a material contribution to the outcome. But those are evidential considerations. As a matter of principle, successive events are capable of each making a material contribution to the subsequent outcome."

381. It seems to me that none of these cases resolved the issue of apportionment in acute PHI brain damage cases where the functional outcome cannot be apportioned or divided because none of them addressed it head on. But they do set out the principles which this Court should apply. The key one being the effect of scientific impossibility in modifying the test which the Court will apply for causation at various stages.

Impossibility of proof of causation to apportion functional outcome compared with mere difficulty of proof

382. In *John v Central Manchester* [2016] EWHC 407, Picken J considered apportionment and ruled on the correct test for causation in a brain injury claim based on clinical negligence. However the case did not concern acute PHI. The Claimant, a GP, fell down stairs and suffered a head injury which needed surgery. There was negligent delay in carrying out the necessary surgery amounting to about 6 hours and the Claimant suffered damaging raised intra cranial pressure (RIP) and a fit during that period. The Claimant also suffered an infection during the operation and had to undergo a second brain operation. The result was that the Claimant was unable to work due to the brain injuries. The Defendant initially submitted that the Claimant had to prove that the brain injury would not have been suffered but for the RIP but in closing submissions accepted that the Claimant only had to prove that the RIP materially contributed to the injuries and then submitted that the Court should apportion the damages to match the relative contribution of the breach factor to the non breach factors. Picken J rejected apportionment on the basis that it was *"impossible to attribute particular causes to particular loss"* (paragraph 100). He ruled as follows:

> "97… In short, the 'material contribution' approach applies, in my view, just as much to multiple factor cases as it does to "single agency" cases.

98 This brings me, then, to Mr Kennedy's submission that in a case such as the present the court should engage in an apportionment exercise of the sort carried out in the *Holtby* case. I cannot accept that this can be right. First, I am in some doubt how this argument can work in circumstances where, as Mr Kennedy accepted during closing submissions, if the 'material contribution' test has been satisfied, then causation is made out. It seems to me that, if that is the position, then if the evidence is such that it is not possible to attribute particular damage to a specific cause, the claimant must be entitled to recover in respect of the entirety of his or her loss.

99 Secondly and in any event, I am quite clear that apportionment is not appropriate where it is not merely difficult but is impossible to allot particular loss to a particular cause. The *Holtby* case itself makes this clear since that was a case in which it was not impossible but merely difficult to work out what damage had been caused by particular factors. This is apparent from the passage in Stuart-Smith LJ's judgment on which Mr Kennedy himself relies, namely, para 20, in which reference is made to the "question of quantification" being possibly "difficult", as opposed to impossible. Stuart-Smith LJ cited with approval the following observations made by Mustill J in *Thompson v Smiths Shiprepairers (North Shields) Ltd* [1984] QB 405, 443:

> "whatever the position might be if the court were to find itself unable to make any findings at all on the issue of causation and was accordingly being faced with a choice between awarding for the defendants in full, or for the plaintiffs in full, or on some wholly arbitrary basis such as an award of 50%, I see no reason why the present impossibility of making a precise apportionment of impairment and disability in terms of time, should in justice lead to the result that the defendants are adjudged liable to pay in full, when it is known that only part of the damage was their fault. What justice does demand, to my mind, is that the court should make the best estimate which it can, in the light of the evidence, making the fullest allowances in favour of the plaintiffs for the uncertainties known to be involved in any apportionment …"

This is not talking about impossibility of attributing cause but about difficulty and impossibility of making a precise apportionment. The two things are not the same.

100 The point is further reinforced by Clarke LJ saying the following in *Holtby* [2000] ICR 1086, para 37, albeit by way of postscript and whilst dissenting:

> "although I have expressed a different view from that expressed by Stuart-Smith LJ, I entirely agree with him that in reality these cases should not be determined by onus of proof. That seems to me to be so whatever the correct view of where the burden of proof lies. That is because, as Mustill J put it in *Thompson v Smiths Shiprepairers (North Shields) Ltd* [1984] ICR 236, 274G, 'The fact that precise *quantification* is impossible should not alter the position' … (My emphasis.)
>
> In contrast, the *Bailey* and *Williams* cases are cases where it was impossible, not merely difficult, to attribute particular causes to particular loss. The present case likewise entails impossibility rather than simply difficulty. As such, it is not an appropriate case for an apportionment exercise of the sort advocated by Mr Kennedy."

383. I accept that there is a distinction to be drawn between impossibility of proof for apportionment of functional outcome and difficulty over proof for apportionment of functional outcome. The dividing line depends on the evidence. I consider that in the case before me, where the Claimant's cerebral palsy has been caused by one noxious factor: acute PHI, and where the agreed medical evidence is that every minute of PHI caused increasing brain damage, the scientific gap is how to attribute the breach PHI (or each minute of brain damage) to each or any functional deficit.

Findings and rulings on apportionment

384. Dr Rosenbloom gave evidence that the Court could and should apportion the quantum if the Court finds that part of the PHI was caused by negligence and part would have arisen in any event. But he made clear that his opinion to apportion and his Aliquot theory only works if the Court takes chunks of 5 minutes, not less. The chart in the Appendix to this judgment summarises his allocation methodology. If chunks of less than 5 minutes are to be considered material then his advice and both parties' submissions were that his theory would not be scientifically sufficient because apportionment is impossible.

385. I consider that on logical analysis the Aliquot theory falls apart. On the hypothetical assumption (which I am not prepared to make in any event) that the theory is applied when the total PHI is 20 minutes (10 of which were damaging) and the negligent PHI is 5 minutes, then using Doctor Rosenbloom's Aliquot approach the quantum would be apportioned in line with the attached chart. The relevant claimant would be in the moderate category and the damages would be assessed on the difference between the actual symptoms and the symptom pattern set out in the mild category. However if the negligent PHI was only 3 minutes, in my judgment that would still make a material contribution to the extent and severity of the Claimant's brain injury but apportionment would not be possible in relation to functional outcome so recovery

would be 100%. This is plainly illogical. Less damage/injury results in more damages. I raised this problem before submissions but the Defendant could provide no resolution for the inherent unfairness in that approach.

386. Furthermore, quantification of the difference between the Claimant's actual symptoms in this case and the but for symptoms set out in Doctor Rosenbloom's Aliquot theory under the heading "mild" would necessitate a far greater level of detail in the 3 categories (mild/moderate/severe) for all the other experts (care, physiotherapy, deputy costs, accommodation, assistive technology, psychology, visual, hearing etc.) to be able to quantify the difference. Also each paediatric neurologist in each case might have a different view of the constituent elements of the chart in each Aliquot category.

387. The final reason why Doctor Rosenbloom's Aliquot theory should not be applied by this Court in my judgment is that his recommendation in 2011 in his joint paper published with Janet Rennie was to gather together a database of cerebral palsy sufferers setting out their symptoms and the duration of the PHI they had suffered. This has not been effected. Nor, I should point out, has the NHSLA gathered together into a database its considerable bank of available information in all of the cerebral palsy cases it has settled, won or lost since 2011 to put in evidence before this Court. (There may be GDPR reasons for this). So no accurate or satisfactory epidemiological evidence is before me.

388. Thus in my judgment the Aliquot theory, honestly and helpfully put forwards, as it was, by an impressive and experienced expert, is not an acceptable, fair or practicable way to apportion quantum in this Cerebral Palsy case caused by acute PHI.

389. As to the law on causation of injury I find that for this cerebral palsy case caused by acute PHI before and just after birth, the material contribution test is not appropriate in relation to deciding the issue whether the breach caused brain injury because all the experts in this case advised that, on the balance of probabilities, every minute of acute PHI caused damage to the Claimant's brain cells after the 10th minute. I Consider that the but for test is sufficient and is satisfied.

390. As to the law on causation and proof of the quantification of the loss caused by the 1st Defendants' breach, there is clearly a scientific gap in the ability of all of the medical experts to predict with any accuracy the "but for" outcome for this Claimant had she suffered say 1 to 3 minutes less acute PHI. This is easily exemplified by looking at the normal categories of activities of daily living (ADL): gross mobility; fine motor movement; feeding; speech; bladder and bowel continence; hearing; vision; work capacity; capacity to manage money; cognition; memory; concentration; behaviour and many more. None of the experts could accurately or generally advise the Court

on the Claimant's likely level of functioning in each of these ADL categories had she suffered 1 or 3 minutes less PHI.

391. In law I consider that the cases I have reviewed above show that if there is a scientific gap making proof of causation of functional outcome, therefore also quantification, impossible in contra-distinction to merely difficult, then the Claimant will recover 100% of the damage she has suffered due to the acute PHI so long as the Claimant can prove that the breach made a material contribution to the reduced functional outcome which was more than de-minimis.

392. As to apportionment, I remain attracted to Mustill J's fairness approach in *Thompson* and Schiemann LJ's approach in *Allen* and would have ruled that apportionment of quantum is fair on the basis of a percentage tied to the relative duration of PHI: negligent to non negligent, had the evidence permitted this approach.

393. I have already found that all the damage was probably caused by the negligent PHI, taking the mid point of my timing ranges which I consider to be the most likely timings. However if one takes the high end of the range of duration of the PHI which I have found occurred (18 minutes) and the low end of the negligent delay range I have found (5 minutes), a case is made for the need to apply apportionment of functional outcome to the material contribution test. Of the 8 minutes of damaging PHI, 5 would have been caused by negligence and perhaps between 1 and 3 would have occurred in any event (the resuscitation period would have been shorter with shorter PHI before birth so it would not have been the full 3 minutes). Would it be possible, albeit difficult, for the Claimant to prove her functional outcome after only 1-2 minutes of damaging PHI? On the expert evidence before me it was agreed by all the experts that such proof was scientifically impossible. In my judgment a reasonable and fair quantification of the Claimant's functional outcome on the but for scenario for each minute of negligently caused acute PHI is impossible not merely difficult. So the Claimant shall recover 100% of her damages.

394. **Conclusions**

Diagnosis

395. I find that the Claimant was born in a very poor state at 01.03 hours on 3.2.1996. She had suffered acute PHI for between 14 and 18 minutes duration (mid point 16 minutes). 3 minutes of that PHI occurred after her birth until she was resuscitated at around 01.06. The acute PHI caused the Claimant's cerebral palsy. Working back from 01.06 I find that fetal bradycardia (low FHR) was occurring from around 00.50 (the mid point of 00.48 to 00.52).

Breach

Antenatally

396. I find that the consent process on 30.1.1996 carried out by Doctor Dunlop was reasonable and lawful for medical practice in 1996. CS was discussed with the parents and they agreed to NVD with IOL and as little intervention as possible. Therefore the claim against the 2nd Defendant fails.

In labour

397. In my judgment the 1st Defendant was negligent in delaying the birth of the Claimant by 6.5 minutes (the mid point of the range 5 and 8 minutes of delay).

398. The delay was caused in part by the clinician keeping M in the delivery suite too long after Bethany's birth and getting M to theatre later than was necessary.

399. I find that the delay was also caused or increased by the clinician refusing to accept the parents' reasonable requests for a CS at 00.26 hours and at 00.35 hours on 3.2.1996. I find that the clinician failed to explain the reasonable treatment options to M and F starting at 00.25/00.26 and wrongfully failed to grant the parents' request for a CS at that time and again at 00.35 and failed to arrange transfer to theatre quickly. I find that the SHO acting as registrar failed to inform the consultant of the relevant facts and the choices made by the parents when seeking approval for the way forwards some minutes after 00.27. I find that the clinician continued with her plan for ARM in theatre despite the parents' expressed choice for CS. I find that M was not properly consented for ARM or CS at around 00.35.

400. The overall delay was caused or increased by the clinician taking matters *slowly,* to use her words, from 00.26 to the actual time of birth rather than taking matters quickly and in particular whilst the Claimant's FHR was not being monitored adequately because the CTG had been removed at 00.40.

401. I find that there was also delay in the starting of the administration of the general anaesthetic, because the clinician was unnecessarily seeking further discussion with the parents and then further approval for CS from the consultant after reaching the theatre.

402. Further delay was negligently caused by the clinician failing to carry out the CS sufficiently quickly.

Causation

Primary ruling

403. The agreed expert evidence was to the effect that of the 16 minutes of acute PHI which I have found, the first 10 are not generally damaging and the minutes thereafter cause increasing or incremental brain damage. Therefore I find that there were 6 minutes of damaging PHI (range 4-8).

404. I find that had the 6.5 minutes of negligent delay (range 5-8) not occurred, on the expert evidence of Doctor Newton, the Claimant would have avoided all brain injury. Instead of being born at 01.03 by CS she would have been born by CS at 00.56.5 (range 00.55 and 00.58). The resuscitation period would also have been shorter as a result of her earlier birth reducing the PHI suffered.

Secondary ruling on causation

405. Taking the extremes of the ranges of the timings I have found, on the basis that the negligent delay was at the lower end of my range (5 minutes) and the duration of the PHI was at the higher end of my range (18 minutes), in which case most of the PHI was negligent but a minority was non negligent, I rule that the negligent delay caused significant brain damage on the balance of probabilities and the but for test for causation is satisfied in relation to the majority of her brain injury.

406. In relation to quantification and proof of causation of the functional outcome for the Claimant caused by the breach, on the basis of the extremes of my findings ranges, I find that the delay made a material contribution to the Claimant's disabled functional outcome and that it is impossible on the evidence before me to determine the functional outcome "but for the negligence", so in law the Claimant is entitled to recover 100% of the damage caused by the PHI she suffered using the material contribution test.

407. I have been greatly assisted by senior counsel in this case.

Appendix 1 is incorporated here.

NOTE
I shall deal with consequentials after this judgment is handed down.

Appendix 1

Rosenbloom Apportionment Table					
Minutes of APHI	**Mobility**	**Speech**	**Cognition**	**Independence**	**Vision/Hearing/ Continence/Capacity /Behaviour/Fine Motor Skills etc.**
10 – 15 (paras 94-98)	Bilateral dystonic cerebral palsy: retain independent mobility.	Some dysarthria but can communicate through speech.	Preserved.	Socially and economically independent. Reduced economic capacity	?

	GMFCS level II, can walk with limitations. Some impairments of fine motor function can use hands to undertake self-care activities and to write/type.	Can feed orally.			
15 – 20 (paras 100-104)	Severe limitations on mobility GMFCS level IV, mobility achieved with a body support walking aid and wheelchair dependent. Hand functions are significantly impaired, thus requiring care assistance.	Severe dysarthria. Can feed orally but with difficulty.	Some cognitive impairment.	Neither socially nor economically independent.	?
20 – 25 (para 106)	Immobile: wholly wheelchair dependent and wholly dependent for care.	Frequently requires gastrostomy feeding.	Significant cognitive impairment.	ditto	?

END