Case No: TLQ/13/1345

Neutral Citation Number: [2016] EWHC 924 (QB)
IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 26/04/2016

Before :

MR JUSTICE GARNHAM
- -

Between :

SARAH LOUISE COX	**Claimant**
(A protected party by her Father and Litigation Friend ALAN COX)	
- and -	
THE SECRETARY OF STATE FOR HEALTH	**Defendant**

- -
- -

Mr Derek Sweeting QC and Mr Richard Baker (instructed by **HLW Keeble Hawson LLP**) for the **Claimant**
Mr Paul Rees QC (instructed by **Hill Dickinson LLP**) for the **Defendant**

Hearing dates: 8th – 18th March 2016

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Judgment

Mr Justice Garnham:

Introduction

1. On 30 May 1986 Mrs Sandra Cox gave birth to twins at the Jessop Hospital in Sheffield. The first twin, Samantha, was born by vaginal delivery at 06:20 hours. About five minutes later it was noted that the umbilical cord of the second twin, Sarah, had prolapsed. Thereupon the decision was taken to move the mother to the operating theatre where Sarah was delivered by Caesarean section at 06:45 hours. Sadly, as a consequence of the prolapse, Sarah was deprived of oxygen and suffered serious brain injury.

2. These proceedings are brought on behalf of Sarah Cox by her father, Alan Cox. Sandra Cox, her mother, died some years ago. The Claimant alleges that her injury was a consequence of the negligence of the hospital staff, for which the Defendant, the Secretary of State for Health, is now responsible.

3. I heard evidence and submissions on this case over eight days. I record here my gratitude to counsel for both parties for their very substantial assistance in this case.

The Issues

4. There are essentially two issues in this case. First, the Claimant alleges that the Defendant Hospital failed to ensure that the delivery of Sarah was conducted in a safe environment. By that she says she means that it should have taken place in the presence of an anaesthetist, in a place where there could be immediate recourse to Caesarean section should an emergency occur, where anaesthesia for Caesarean section could be administered without delay and where the obstetrician present was experienced in twin delivery. It is the Claimant's case that the failure to perform the delivery within such an environment meant that 20 minutes elapsed between the cord prolapse being detected and her delivery by Caesarean section. It is said that those 20 minutes included "*an unacceptable delay of at least 10 minutes by comparison to the likely timeframe if delivery had taken place within a safe environment*".

5. Second, it is alleged that delivery could and should have been by means of a vaginal breech extraction which would have been markedly quicker. It is said that the failure to deliver by this means also amounted to a breach of duty.

6. The Defendant denies any breach of duty.

7. It is common ground that had the Claimant been delivered 10 minutes earlier than in fact she was, she would in all probability have been spared damage. It follows that I am called upon to decide only the question of breach of duty.

The History

8. Unfortunately, the full delivery records in respect of the Claimant are no longer available. It appears they, along with many other records, were destroyed in a flood when a water main burst outside the hospital. Nonetheless, the treatment of Mrs Cox during May 1986 is not substantially in dispute.

9. Mrs Cox was admitted to the hospital for planned induction of labour on 29 May 1986. She went into spontaneous labour at about midnight and was transferred to the labour ward, which was on the first floor of the hospital. Such records as still exist suggest that Samantha's birth was at 6:20am and that timing was not disputed before me.

10. A hospital summary note reads as follows:

> "*Progressed satisfactorily to full dilation. Twin I delivered – no problem. No presenting part twin II then cord prolapse. Emergency LSCS to deliver twin II.*"

11. The paediatric records contain a little more detail:

> "*Prolapse 5 min after delivery twin 1 – emergency C/S 20 mins later. Breech extraction, two cords entangled + wrapped around body twin 2. (Foetal heart heard – 40 just before section).*"

12. The evidence from the notes is to the effect that these two twins were mono-chorionic, mono-amniotic and mono-zygotic. In other words, they were genetically identical and shared one outer foetal membrane and one inner membrane. Critically, that means that the two twins shared the same amniotic sac. As Mr Roger Clements, the Claimant's obstetric expert explained,

> "*this is the only way in which the two cords could have become entangled and wrapped around the body of the second twin. Had the amniotic cavities been separate the cords could not have become entangled.*"

13. Thus, there was only one amniotic sac, shared by the twins, and that ruptured some time before the birth of Samantha.

14. It is likely that Sarah's position altered with the birth of her sister. The evidence suggests that thereafter Sarah was lying obliquely. The attending obstetrician, Dr Giller (née Mitchell), conducted a vaginal examination and was "*just able to touch*" the foot of the second twin. Following the birth of Samantha, Sarah's umbilical cord prolapsed; in other words it descended from its proper place, leaving it vulnerable to occlusion. Occlusion of the cord would leave Sarah deprived, partially or completely, of oxygen.

15. Faced with what was undoubtedly an obstetric emergency, Dr Giller decided not to attempt a breech extraction; such an extraction would have necessitated grasping the second twin's foot and pulling it down the birth canal. Instead, she decided to proceed immediately to a Caesarean section.

16. In 1986 the Jessop Hospital had a labour ward on the first floor and operating theatres dedicated for the use of obstetric patients on the fourth floor. The two floors were linked by two lifts. The operation of at least one of those lifts could be overridden by means of a key kept on the labour ward. The effect of that arrangement was that at

least one lift would always be immediately available should it be required to transport a patient from landing one to landing four.

17. The potential for damage to the foetus arises from the occlusion of the cord by the presenting part of the baby. It is essential that this is minimised as far as possible by the treating clinician lifting the presenting part off the cord. That is what happened in the present case; Dr Giller (or possibly her assistant) kept a hand in Mrs Cox's vagina throughout the time she was being transferred from the delivery bed to the theatre.

18. Samantha was born weighing 2.2 kilograms and in excellent condition with an Apgar score of 8 at one minute and 9 at five minutes. She required minimal resuscitation and developed normally. Sarah was born 25 minutes after her sister weighing 2.495 kilos. She was born in a very poor condition with an Apgar score of 2 at one minute and 4 at five minutes. At birth her condition was described as follows:

> "*pale, very floppy. Heart rate less than 40. No spontaneous respiration. Intubated… heart rate picked up – 60 by one minute. Colour – pink by two minutes… heart rate over 100 by five minutes… first gasp at seven minutes but respiration very irregular still. Extubated at ten minutes of age – onset of regular respiration… transferred to special care baby unit in air. On arrival put in incubator in air. Some recession and gasping. Still floppy.*"

19. Sarah and her sister are now aged 29. Sarah suffered brain injury which has left her significantly disabled.

The Witnesses

20. I heard lay evidence on behalf of the Claimant from Alan Cox, the Claimant's father and litigation friend; from Mrs Janet Yates, who had given birth to twins at the same hospital in December 1985; and from Professor Tin-Chiu Li, a professor of obstetrics and gynaecology at the Chinese University, Hong Kong, who had worked at the Jessop Hospital as a consultant obstetrician between 1992 and 2014. Professor Li gave evidence by video link. I also had the benefit of reading the witness statement of the late Mrs Sandra Cox.

21. I also heard lay evidence from six witnesses on behalf of the Defendant, namely Shelia Duncan, a retired consultant obstetrician and gynaecologist, who had worked at the Jessop Hospital, (as well as at the Northern General Hospital in Sheffield), between 1969 and 1996; from Dr Joan Giller, the obstetric registrar caring for Mrs Cox at the time of the birth of the twins; from Dr Richard Birks, who had been a consultant anaesthetist at the Jessop Hospital between 1983 and 2010; from Dr Robert Cruickshank, who had been the anaesthetic registrar at the time of the birth of the twins; from Professor Anthony Smith, who between 1985 and 1990 was a senior registrar in obstetrics and gynaecology at the Jessop; and from Angela Culley, who was head of midwifery at the hospital from September 1987.

22. Expert obstetric evidence was called on behalf of the Claimant from Mr Roger Clements and on behalf of the Defendant from Mr G Jarvis. Finally, I heard from

consultant anaesthetists instructed by both parties, Dr Anthony Rubin on behalf of the Claimant and Dr Ian Russell on behalf of the Defendant.

23. The fact that the evidence was directed to events occurring almost 30 years ago caused predictable difficulties. The witnesses of fact did not always find it easy to cast their minds back some decades. Their difficulty in doing so was compounded by the absence of a full set of contemporaneous records. The experts were having to comment upon what was accepted clinical practice back in the mid-1980s. I have concluded that, for the most part, all the witnesses from whom I heard were doing their best to assist me. Criticism, however, was made of a number of both lay and expert witnesses.

24. Mr Sweeting was highly critical of the evidence given by Dr Birks. Amongst his many criticisms, the most powerful related to the production of the "protocols" (or more accurately "handbooks") which were to feature large in this case.

25. In his first witness statement, Dr Birks said that there were no protocols in place in 1986 in relation to delivery of twins in operating theatres. In his second statement, he referred to the extract of a "written protocol" which had been referred to in the report of Mr Clements. Dr Birks said that it was his understanding that that protocol did not come into force until 1992 and did not represent practice in 1986. In cross-examination Dr Birks accepted, having been shown various archive material obtained by the Claimant, that he had had some involvement in the creation of a handbook in about 1991. He accepted that the first handbook, whenever it was produced, represented practice at the time it was created. During his cross examination, Dr Birks accepted that he was wrong to assert in his second statement that the handbook did not come into force until 1992; it was plain there already existed a handbook by that date. He accepted that he had made no reference to being part of a small group responsible for producing the first handbook. He felt able to estimate when the first handbook came into existence, namely 1987 or 1988, despite having asserted in his statements that there was no such handbook in place at that time.

26. Mr Sweeting suggested in his closing submissions that Dr Birks had been "*motivated by a desire to defeat the Claimant's claim rather than to give a full and open factual account of the matters in issue*". Implicit in that submission was an allegation that he set out deliberately to mislead the court. I reject that submission. It is likely, in my view, that when he made his original statement he did not recollect accurately all that had happened in the late 1980s in relation to the preparation of the handbook and subsequent evidence genuinely refreshed his memory.

27. However, I did not find Dr Birks an entirely satisfactory witness. I detected in his manner a reluctance to acknowledge what plainly were errors in his account and a tendency to present his refreshed memory in a way as helpful as possible to the Defendant's cause. In my judgment he allowed himself, at least to some degree, to act as an advocate for the Defendant.

28. A number of the Defendant's witnesses struggled to remember the detail of events in the 1980s and 1990s. I do not think they can be criticised for that. With the exception of Dr Birks, I am firmly of the view that their failures of memory were no more than the consequence of the passage of time and the difficulty of reconstructing events

whilst standing in the witness box. I detected no attempt by any of them to trim their evidence to fit a pre-determined narrative.

29. Criticism was made by both sides of their opposing experts. Mr Rees was critical of Mr Clements, in particular in relation to his evidence on the second substantive head of negligence, namely the failure by Dr Giller to deliver Sarah by a vaginal breech extraction.

30. Mr Clements agreed in cross examination that there had been no reference to a failure to attempt vaginal breech extraction in an earlier report (an "advisory report") he had produced for the Claimant's solicitors. He agreed that the possibility of mounting such criticism had only occurred to him some time later when considering some different case. He said:

> "*Discussing the case again, probably after a conference with Counsel, I revisited the question regarding breech extraction. The primary criticism was a lack of proper system dealing with it. Then, I realised, as a second twin, and a small baby it was not unreasonable to also allege that breech extraction was an option the doctor could have taken. I advised those instructing and they modified the Particulars of Claim accordingly."* (emphasis added)

31. It was suggested to him that when he was first instructed he took the view that "*vaginal breech extraction was not an option*". He said he had considered it, but:

> "*was persuaded after some time that this was a secondary twin so breech extraction could be pleaded*."

32. Later he said:

> "*When I say persuaded, I don't mean someone pinned me against a wall, I mean that over a period of time I was persuaded, I persuaded myself, I came to the view that it was not unreasonable to consider vaginal breech extraction*." (emphasis added).

33. I confess that I am somewhat troubled by that evidence, and in particular by the account of Mr Clements being "persuaded" or "persuading himself", his making value judgments about what would be the better case to plead and his including in a report for the court an opinion which he thought it would "not be unreasonable" to advance. In my judgment the role of the expert witness is to provide expert evidence on the issues he is asked to address, rather than to concern himself with the conduct of the litigation.

34. I accept that there is here no evidence of any impropriety on the part of either counsel or solicitors for the Claimant in their contact with Mr Clements. I accept that it is perfectly proper for legal representatives to discuss with expert witnesses the contents of their reports. It is proper for a legal team to invite an expert to consider the evidence that has arisen and to reflect on the effect of that on his opinion. There is nothing to suggest anything beyond that was done here.

35. The evidence presented to the court should be the independent opinion of the expert, uninfluenced by the course of the litigation. As Lord Wilberforce said in Whitehouse v Jordan [1981] 1 WLR 246, at 256:

> "*While some degree of consultation between experts and legal advisers is entirely proper, it is necessary that expert evidence presented to the court should be, and should be seen to be, the independent product of the expert, uninfluenced as to formal content by the exigencies of litigation. To the extent that it is not, the evidence is likely to be not only incorrect but self defeating.*"

36. On balance, I am satisfied that Mr Clements' evidence on this topic stayed the right side of the line of what is acceptable in this regard. However the extent to which he saw himself as concerned with the conduct of litigation has led me to consider his evidence on this topic with particular care (see, on this subject, paragraphs 146 and following, in particular).

37. Mr Sweeting, in turn, is critical of the evidence of Mr Jarvis and of Dr Russell. I say immediately that, in my judgment, the criticism of Dr Russell is entirely misplaced. Dr Russell expressed his opinion to me in firm terms, making it very clear that he regarded the case being developed by the Claimant as wholly without merit. There were answers given by him which contained a degree of hyperbole and might have been expressed in more measured terms. But I see nothing improper in an expert expressing himself forcefully if it is his genuine view that that is what the questions require. I regarded Dr Russell as an impressive and entirely credible witness. I will turn later on in this judgment to indicate what I made of his opinion.

38. The criticism of Mr Jarvis has a little more force. His evidence got off to a bad start. His report makes no reference to the fact that Sarah and Samantha were mono-amniotic twins, despite the fact that Dr Giller so describes them in her first witness statement and despite the fact that Mr Jarvis had that statement when he prepared his report. I am driven to the conclusion that Mr Jarvis simply made a mistake about that and proceeded on the basis that this case concerned the more common type of twin pregnancy, rather than the rare type described by Dr Giller. Mr Jarvis' explanation that he doubted that Dr Giller's account was correct is not, in my judgment, convincing. At the very least, his report ought to have referred to the nature of her account, addressed that account and explained why he thought it was unlikely to be accurate. He accepted that criticism whilst giving evidence.

39. Second, Mr Jarvis' assertion in his report that "*an operating theatre must be available in case emergency caesarean section was required*" is not supported expressly in the literature to which he referred. Mr Sweeting suggested that that had demonstrated a woefully inadequate approach; in my judgment that is to put it too high. In my view, Mr Jarvis' error lay in not making it clear that that was simply his opinion.

40. Third, Mr Sweeting makes complaint about the nature and extent of Mr Jarvis' connection with the Jessop Hospital. It is right to say that Mr Jarvis had been a registrar at this hospital between 1978 and 1981. However, Mr Jarvis made it clear at the very beginning of his report that that was the position and I see no possible basis for criticism of him, his having made that declaration on first being instructed.

41. Mr Sweeting refers to the observations of Haddon-Cave J in Sardar v NHS Commissioning Board [2014] EWHC 38, where Mr Jarvis was described as a "*most unsatisfactory expert witness*", who "*appeared to forget his duty to the court and seemed illegitimately to stray into advocacy for the Claimant's cause*" (paragraph 33). Having been alerted to this authority by Mr Sweeting, I made particular point of reflecting on what Mr Jarvis told me with that criticism in mind. In my judgment, Mr Jarvis did not make a similar mistake in this case. He maintained his opinion as to the propriety of the Defendant Hospital's conduct of this pregnancy, but he did not, in my judgment, stray into becoming an advocate for them.

42. It follows from what I have said above that I need to approach all the obstetric evidence with a degree of care. I do not feel able to decide this case simply by reliance on one expert in preference to the other. My judgment will turn on the merits of the factual case rather than the merits of the experts. The same can be said about the anaesthetic experts, although for rather different reasons; I regarded both experts in this discipline as being wholly reliable.

The Respective Cases

(i) Caesarean Section on the Labour Ward

43. In 1986 the risks of an emergency arising during the delivery of twins was well recognised. The Claimant argues that those risks "*mandated certain safety precautions*". It is said that it was necessary to provide a location where an anaesthetist would be present or available, where general anaesthesia could be induced quickly and where Caesarean section could be carried out quickly.

44. The Defendant maintains that there was an anaesthetist, namely Dr Cruickshank, readily available on the labour ward and it was accepted by those acting for the Claimant that that was adequate. The Claimant's case on this ground, therefore, turns on the availability of general anaesthesia and facilities for an immediate Caesarean section.

45. The Claimant says that she pleaded her case on the basis of expert evidence and contemporaneous literature describing the standard of care in 1986. But she says that subsequent investigations by her solicitors revealed that the hospital had put in place "*its own protocols*" which reflected the Claimant's case as to the precautions necessary in the case of twin delivery. The protocols referred to are in fact two editions of a labour ward handbook. As is material for these proceedings, the two editions differed only in the number given to the room in the delivery suite where it is said that the labour of twins should "ideally be monitored". The section of the handbook entitled "Twins" included the following:

> "*These women should be prepared normally and blood taken for cross match.*
>
> *Ideally, labour should be monitored in Room 4 of delivery suite (anaesthetic machine to hand).*
>
> *Paediatricians and special care baby unit to be informed as soon as possible.*

If elective induction is to be performed a few days notice is advisable.

Epidural and analgesia is strongly recommended and all cases should have an intravenous infusion sited.

The senior obstetric resident should supervise labour and delivery…

Persons who should be present at delivery (i) senior obstetric resident; (ii) senior midwife; (iii) two paediatricians; (iv) anaesthetist."

46. It was the Claimant's primary case that that handbook was in existence at the time of the delivery of the twins. In support of that contention she referred first to the fact that someone had endorsed on the top of two copies of the handbook the words "1986-1992". Second, she relies on records of committee meetings indicating an intention to prepare such a handbook dating back to 1984. Third, she relies on what was common ground, namely that there was a second version of the handbook, produced in 1992 by Professor Li. The Claimant says that the previous edition must have been in existence for some years prior to that and was probably in existence in 1986.

47. In the alternative, the Claimant alleged that the handbook describes a practice that was in existence at the Jessop Hospital at the time of the twins' delivery.

48. By whichever of these routes it is reached, the Claimant says that the proper conclusion is that at the time of the Claimant's birth the Defendant recognised a need for the labour of women carrying twins to be monitored in a particular room in the delivery suite where it was possible for anaesthetists to be present and able to administer anaesthesia. She says the inevitable implication of that is that it was, or should have been, envisaged that it might be necessary to carry out Caesarean section in that delivery room.

49. The Claimant maintained that what happened in fact was that no consideration was given to the performance of Caesarean section in the room where Mrs Cox's labour had been monitored. Instead it is said that as soon as it was appreciated that Sarah's cord had prolapsed and the treating clinicians were facing an emergency, it was decided to move Mrs Cox to the operating theatre.

50. That, as is common ground, involved moving her out of the delivery room along a corridor to a lift, up three floors in the lift and along a corridor on the fourth floor to the operating theatre. It was there that the Caesarean was conducted. No criticism was made of the Caesarean procedure itself. However, the Claimant alleges that the need to transport her mother via the lift produced a delay of at least 10 minutes and it was that delay which caused her brain damage.

51. The Defendant responds by contending that the need for emergency Caesarean section was detected promptly, and that the Claimant's mother was moved with all possible speed from the delivery room to the only place where a Caesarean section could properly and safely be performed. The Defendant says that it would have been unsafe to have conducted a Caesarean section on the ward. Contemporary standards, it is

argued, did not demand either that there was an obstetric operating theatre on the same floor as the labour ward, or that any labour ward without such a theatre should have the facility to convert one of its rooms immediately into an impromptu operating theatre. In fact, it is contended, to carry out a Caesarean section within 20 minutes of the emergency being detected was entirely within the standards of the day.

(ii) Vaginal Breech Extraction

52. In the alternative, the Claimant argues that Sarah should have been delivered by vaginal breech extraction. She says that delivery "*could have been expedited by the use of breech extraction, as this was a second twin. The Claimant accordingly alleges that the failure to deliver the Claimant by breech extraction also amounted to a breach of duty*" (paragraph 24D of the Amended Particulars of Claim).

53. It was accepted by the Defendant that if successful, a vaginal breech extraction would have been quicker than the delivery that in fact occurred. It was not suggested that a successful breech extraction would have taken longer than 10 minutes from the time the prolapse was detected. However the Defendant denies that it was negligent not to attempt breech extraction.

54. It is argued on the Defendant's behalf that, faced with a second twin situated high up in the pelvis, and given the known risks associated with breech extraction, it was safer to transfer the mother to theatre for delivery by Caesarean section. That, it is said, was certainly consistent with a reasonable body of obstetric opinion.

55. Dr Giller says that when she examined Mrs Cox vaginally after the birth of Samantha, she found no second sac and little "liquor"; (her reference to "liquor" is a reference to the amniotic fluid released when the sac ruptured). Instead there was a mass of tangled cord. She says there was no presenting foetal part in the vagina, but a foot was palpable high up in the birth canal. She says that any attempt to try to pull the foetus down "*with a high presenting part and no liquor*" would be potentially much more dangerous than proceeding to an emergency Caesarean section.

<u>Questions to be Addressed and the Test to be Applied</u>

56. Against that background, it seems to me that the following six questions arise for decision:

    i) Was the first labour ward handbook in use by 30 May 1986?

    ii) If not, was there, by that date, an established practice at the Jessop Hospital to the same effect as that subsequently set out in the handbook? Did that practice make provision for the conduct of caesarean sections on the labour ward?

    iii) Whether by reference to the handbook or otherwise, did proper practice require the Defendant Hospital to make provision on its delivery ward, in May 1986, for the administration of a general anaesthetic and the conduct of a Caesarean section?

iv) Would the conduct of a Caesarean section on the delivery ward have meant that Sarah would have been delivered 10 (or more) minutes earlier than in fact she was?

v) Were the clinicians involved in the decision to proceed to Caesarean section in the operating theatres in breach of duty?

vi) Should a vaginal breech extraction have been performed by Dr Giller on the labour ward?

57. In considering all those questions, I remind myself that the burden of proof is on the Claimant and that the standard of proof is the balance of probabilities.

58. The legal principles to be applied in clinical negligence actions are well established and are not in dispute here. They are conveniently summarised at paragraph 25 of the judgment of Haddon-Cave J in Sardar. Adapted to apply to the facts of this case, those principles are as follows:

> "*(1) The test to be applied is the standard of the ordinary skilled man or woman exercising and professing to have that special skill.*
>
> *(2) It is sufficient if he or she exercises the ordinary skill of an ordinary competent person exercising that particular art.*
>
> *(3) He or she is not negligent if he or she has acted in accordance with a practice accepted as proper by a responsible body of medical people skilled in that particular art.*
>
> *(4) The standard by which the individual doctor, nurse or midwife is to be judged is the standard of a reasonably competent doctor, nurse or midwife carrying out the functions expected of him or her in the delivery suite of a general district hospital.*
>
> *(5) The relevant standards by which the Hospital's acts or omissions are to be judged are the standards of the day, i.e. of May 1986.*"

(i) The Publication of the First Handbook

59. Neither edition of the labour ward handbook contains any integral indication of the date on which it was produced or published. It was only discovered at all as a result of the particular diligence of the Claimant's solicitors. As noted above, two copies of this printed document have been unearthed, each endorsed by hand "1986-1992". It emerged that that endorsement had been added by Angela Culley, the senior midwife.

60. She told me that it was her handwriting at the top of both copies of the document. She explained that she must have made the annotations in or after 1992. She agreed that the purpose of the annotation must have been to indicate the date on which she understood, at the time, that the handbook came into force. Because she did not join

the hospital until 1987 she agreed she could not have learnt that information first hand. She could not recall anything about the source of her information.

61. Ms Culley went on to explain that although she could not say when the handbook was actually introduced, it was not part of the bundle of material she had been given when she first started in the job. Furthermore, she said that she remembered the handbook being produced whilst she was in post. That plainly contradicts the suggestion that she had understood from what she had been told that the handbook came into force in 1986. In my judgment, Ms Culley's evidence could not be decisive in itself.

62. In her oral evidence, Ms Sheila Duncan, who had been a consultant obstetrician at the Jessop Hospital at the relevant time, was taken to the minutes of the inaugural meeting of a newly constituted committee called the "Maternity Services Liaison Committee" dated 2 December 1983. The function of the committee was to monitor and regulate maternity practices in the Sheffield district. She agreed she was made chair of that committee.

63. In 1984, a national Maternity Services Advisory Committee, under the chairmanship of Mrs Alison Munroe, produced a report on intra partum care (the "Munroe report"). That report advocated the adoption of written operational policies "*to ensure a consistent standard of care and avoid any confusion over practice*". Part 8 of that report identified design features and equipment which "*should be included in any new delivery suite and, as far as practicable, in any upgrading of existing buildings*".

64. It was said that delivery rooms should be "*large enough to have the flexibility in the type of delivery… they should be suitable for all types of vaginal delivery; where this is not practicable, a larger room for abnormal deliveries will be needed*". It was said that "*an operating theatre suite of adequate size, for the sole use of the maternity unit, should be an integral part of the delivery suite*". It then provided a list of equipment and apparatus that should be available in every delivery suite. That apparatus included, "*apparatus for electronic foetal monitoring, apparatus for inhalation analgesia, apparatus for general anaesthesia*". The report also advocated the establishment of district maternity service liaison committees.

65. The liaison committee in Sheffield continued to function under the chairmanship of Ms Duncan. At a meeting on 7 June 1984, it was noted that "*most interested parties supported the majority of the recommendations contained in"* the Munroe report.

66. A report dated July 1984, apparently produced by Ms Duncan, advocated the adoption of written operational policies by each of the three units in Sheffield. It was said that:

> "*this 'unit handbook' should be widely distributed within each maternity unit and its associated community services. Although it could be modest in size and presentation, nevertheless it must be robust, widely distributed and frequently revised. The basis for funding for this must be clarified.*"

67. It is thus apparent that there was from 1984 onwards some encouragement to produce unit handbooks in each hospital in Sheffield. There is, however, no contemporaneous documentation as to when that was done in the Jessop Hospital.

68. The next contemporaneous material I was shown was a letter dated 10 September 1991, from Ms Duncan to a Mr Johnson, a consultant obstetrician and gynaecologist. That letter is entitled "labour ward handbook". It reads in material part as follows:

> "*I wonder if we could resuscitate the organisation of the labour ward handbook, which has lapsed, I think its presence is missed.*
>
> *As you are aware, Tony Smith was the prime mover in setting this up and we had a little sub group, including myself, Ms Dunn and Dr Birks to get it together in the first place.*
>
> *Tony got some drug firm support to get it printed and I think what basically happened is that the first printing became exhausted. As Tony was leaving around this time the second edition has never gotten established.*
>
> *I really think it is essential. We require some means of communication of Jessop Hospital procedures for new staff and the lack of any advice is already obvious…*"

69. The "Tony Smith" referred to in that letter is the now Professor Anthony Smith. Professor Smith gave evidence before me and he was a singularly impressive witness. In his witness statement he had described himself as the "*main instigator behind the production of the handbook*", explaining that it was designed as a pocket book for junior doctors working on the labour ward.

70. In his oral evidence, he explained how he had arrived at the Jessop Hospital in 1985 from Manchester where he had been doing research for two years. Referring to his clinical practice, he said that on arrival at the Jessop Hospital he was "*rather rusty initially*". He said it would flatter the document to call it a "protocol"; it was a handbook designed to fit in a doctor's white coat pocket. As he put it, "*locums would drop in*" to work and this was a guide for them when they did so.

71. Professor Smith described how it took some considerable time to produce the handbook. He said that, as the new doctor coming into the unit, he did not start the process straight away. His clinical practice was "rusty" and he felt he needed to build up people's confidence in him before he started laying out a prescribed procedure. He said that was particularly the case when "*you come from the other side of the Pennines*". He said initially he involved midwives, anaesthetists and obstetricians in the work. However, at some stage in the process the paediatricians in the hospital indicated that they too should be involved and so he included them. He said it took him some months to find funding for the project; it was his estimate that it took six months to persuade a drug company to put up the funds. The process of producing the document was lengthened further by the fact that he wanted it in a waterproof ring binder so that it was hardy enough for daily use and so that clinicians could add their own notes.

72. Taking account in particular of the fact that he did not feel qualified to begin the task for about a year after he arrived, he estimated that the handbook was produced in 1988 or 1989.

73. Although I have expressed my reservations above about the quality of Dr Birks' evidence, it is of some weight that he told me that Professor Smith did not start the task until he had "*got used to the unit in 1986 or 1987*". He said, he thought the first iteration was produced in 1987 or 1988 and he too recalled that it was designed to fit in a white coat. He confirmed that he was part of a small group involved in producing the first handbook. I regard Dr Birks' evidence as providing only modest support to the much more powerful evidence given by Professor Smith.

74. Professor Li told me that he had worked at the Jessop Hospital as a research fellow and lecturer for five years from 1985. He became a consultant in 1992. He recalled updating the first handbook with a view to drafting the 1992 version. He said that as regards the section dealing with twin delivery, the only change from the first edition was the substitution of "Room 6" for "Room 4". He told me that he had been given a copy of the first edition of the handbook, some "*three or four years before the revision*".

75. In light of all this evidence, it seems to me most likely that this handbook was produced in 1987 or 1988. Professor Smith's evidence on the topic was particularly powerful. His description of needing to establish himself before starting to produce a work providing guidance to others was entirely convincing. I am unable to account for the fact that Ms Culley has endorsed "1986" on her copies of the handbook, but I place little weight on that endorsement given that she could shine no light on where that information came from, and nor could anyone else.

76. I also place little weight on the Claimant's suggestion that, in the light of the Munroe report there would have been pressure to produce a handbook or protocol quickly; the obstetricians in their joint report make it clear that in the mid-1980s the production of such protocols was not mandatory and depended on the initiative of individual hospitals.

77. I am reinforced in my view as to the likely date on which the handbook was introduced by the evidence of Dr Cruickshank and Dr Giller. I found their recollection of the history of this matter entirely convincing. Dr Cruickshank, who had come to the hospital in October 1985 as a "*special experienced senior house officer*" and started as a registrar in May 1986, described having "*cameo memories*" of the events concerning the Claimant. He said he recognised Dr Giller when she gave evidence earlier in the proceedings. He told me that he had "*no recollection of the handbook*" in 1986. He said he had received a "*verbal induction*" when he started work at the Jessop Hospital but he knew nothing about a handbook. In my judgment, he was exactly the sort of clinician who would have been provided with the handbook had it existed, either when he first joined or when he became a registrar, the very month of the Claimant's birth.

78. Dr Giller gave evidence to similar effect. She struck me as a highly intelligent, caring and genuine doctor. She was a first class witness, providing clear, honest and helpful testimony and acknowledging where her memory was deficient. Dr Giller began work at the Jessop Hospital in 1981 and at the time of the birth of the twins she was an obstetric registrar. She left the Jessop Hospital in June 1986 to pursue a career outside hospital medicine. She said in her second witness statement that she could not recall seeing any "*protocol*" of the sort referred to by the Claimant. Again, had one been circulated, I have no doubt that it would have been circulated to her. The fact that she

has no recollection of it confirms me in my view that it had not been circulated before she left the Jessop Hospital in June 1986.

79. In those circumstances I find as a fact that the handbook was not in use at the time of the twins' birth.

80. Had I reached the contrary view, it would have been necessary to decide whether the handbook contemplated the conduct of open abdominal surgery on the labour ward for the purpose of Caesarean section.

81. I note first, that the part of the handbook headed "Twins" makes no reference to Caesarean section. The high point of the Claimant's case is that it refers to labour being monitored in Room 4 with an "*anaesthetic machine to hand".* In my judgment had that been intended to indicate a recommendation or a practice of conducting Caesarean section in the labour room it would have said so in terms.

82. In fact the handbook has a separate section dealing with Caesarean sections. That section sub-divides these procedures between elective and emergency. The text of the emergency section reads as follows:

> "*It will often be possible to predict the likely need for Caesarean section some hours before it is actually required. Some cases, however, represent a true emergency where caesarean section must be carried out without delay. They include: prolapse of the umbilical cord, acute foetal distress and severe anti-partum haemorrhage… but decision to undertake an emergency Caesarean is made by the senior resident after discussion with the consultant on call, in all but the most clear cut cases.*"

83. The handbook then goes on to describe the need for experienced paediatricians to be present at all deliveries by Caesarean section and then sets out guidelines for allowing a husband in the operating theatre when his wife is undergoing an elective Caesarean section under epidural anaesthesia.

84. In my judgment it is significant that that section makes no cross reference to the section "Twins", and that the section "Twins" makes no cross reference to the section dealing with Caesarean section. In my view no newly arrived clinician at the Jessop Hospital would take this handbook as indicating that Caesarean sections could or should be performed in the labour ward.

85. Furthermore, the reference to there being an "*anaesthetic machine to hand*" does not itself point to a use of that machine to anaesthetise for the purpose of Caesarean section. I accept the evidence from the Defendant's witnesses that there are a number of procedures which may need to be carried out on the labour ward which require anaesthesia.

(ii) Existing Practice

86. It was common ground between all the witnesses from whom I heard that the handbook was intended to reflect existing practice in the labour suite at the time of its

production. Professor Smith, for example, said that the aim of producing the first handbook was to provide something which reflected existing practices and policies. However, the fact that the handbook had not been produced by the time of the birth of the twins means it is not possible to test what went on in 1986 against a written standard. In order to conduct that test it is necessary first to identify what that existing standard was.

87. Even in the absence of a handbook, it is clear on the evidence that there existed arrangements in labour wards on the first floor of the Jessop Hospital for the emergency administration of anaesthesia. It was also common ground between all those who could recall it, that there was a piece of equipment called an "*anaesthetic bar*" in Room 4/6. As noted above, the subsequently published handbook made reference to there being an "*anaesthetic machine to hand*".

88. All the witnesses who speak on the topic, except Dr Giller, recall there being an anaesthetic machine available for use on the labour wards. For example, Professor Li says in his statement that "*there were anaesthetic machines to allow for urgent delivery if that became necessary*". Although it is not certain to precisely which time period Professor Li was referring, it is clear such machines were available when he came to write the handbook in 1992. In his oral evidence he confirmed that the reference to "*anaesthetic machine*" was a reference to a machine which would enable the administration of anaesthesia, including general anaesthesia, to assist in the delivery of a baby.

89. Ms Duncan told me that there was an anaesthetic machine available on the labour ward. She says its purpose was to enable the administration of anaesthetics up to and including full general anaesthesia. She thought its presence was a "throwback" or "hangover" to obstetric procedures in the 1960s and 1970s. She agreed that general anaesthetic would permit the performance of Caesarean section in emergency cases. Ms Culley agreed there was a machine present. She said it was never envisaged it would be used for Caesarean section but it might have been needed for other procedures. She said the machine was mobile; it was kept on a trolley and it could be moved anywhere. She thought it was kept in Room 4 or 6 for storage.

90. Dr Birks made no mention of an anaesthetic machine in his witness statement but in cross examination he said he could recall one being present. He said its anticipated use was for resuscitation rather than anaesthesia. It might, however, be used as an "*absolutely emergency backup*". Dr Cruickshank was also asked whether he remembered an anaesthetic machine on the labour ward. He said he knew there was "*anaesthetic provision*". He said it was commonplace to have emergency anaesthetic facility on labour wards but he could not recall where the machine was kept at the Jessop Hospital.

91. In those circumstances I find as a fact that in May 1986, there were facilities in the labour ward of the Jessop Hospital for the administration of anaesthesia, including the administration of general anaesthesia.

92. It was also agreed between all those who were to describe the labour ward as it was in May 1986, that there was at least one large labour room. The best description of this was provided by Ms Culley. She said that the room was larger because the scrub area was "*around a corner*", whereas in the other rooms space was taken up by the scrub

area. The larger capacity of this particular room was an advantage when a mother was being delivered of twins, for whom more staff would be required. Those staff would include an experienced obstetrician and midwife, and one, or preferably two, paediatricians (one to look after each of the twins). There would also be available, if not in the room itself then immediately available nearby, an anaesthetist. All those who gave evidence agreed on the need for these members of staff.

93. It can be seen, therefore, that the existing practice corresponded in essential detail with what the handbook was subsequently to recommend. Thus, the preferred position would be that women giving birth to twins would be cared for in a larger than average delivery room, probably the room numbered 4 or 6; an anaesthetic machine would be available if required; the mother would be attended by an experienced obstetrician, an experienced midwife and at least one paediatrician; and there would be an anaesthetist either attending or immediately available.

94. In the light of all the evidence I have heard, however, it is impossible to conclude that it was, in 1986, the practice at the Jessop Hospital to deliver any baby by Caesarean section in the delivery suite. There was no evidence that that had ever occurred. Professor Li said that he had never carried out Caesarean section in a delivery room and could never remember any colleague doing so. He had never asked an anaesthetist to do a general anaesthetic in the delivery room at the Jessop Hospital. He said there had never been circumstances in which he had been persuaded not to go to the operating theatre for Caesarean section.

95. Ms Duncan said Room 4 had certainly never been intended as a place for the performance of Caesarean section. She said that if a Caesarean section was necessary it would always take place in the operating theatre on the fourth floor. She had never understood that Caesarean section could be performed in the delivery room and never contemplated that the room would be used for that purpose. Dr Giller said that she had never delivered by Caesarean section in the labour ward and it had never occurred to her that it would be possible to do so. It was her view that her only option was to go to theatre for such a procedure. Dr Birks said that the only circumstances in which he could envisage it would be necessary to administer general anaesthetic for the purpose of a Caesarean section on the ward would be if there was an immediate threat to the mother's life.

96. Ms Culley said it was never envisaged that Room 4 or 6 would be used for Caesarean section. She said it would be highly unsafe to attempt to do so. Midwives were not skilled at assisting at a Caesarean section. The necessary equipment was not readily available; in particular there was no diathermy equipment, no proper suction equipment and no surgical packs available on the labour ward. Dr Cruickshank told me that general anaesthetic was given in theatre for every emergency case of which he was aware. No one had ever suggested he should provide general anaesthetic in the delivery room. He would not give general anaesthetic in the delivery room for the purpose of Caesarean section without what he regarded as the essential equipment and assistance; namely, an ECG machine, a CO2 monitor, skilled assistants and the necessary drugs.

97. Professor Smith said that Room 4 would be entirely unsuitable for surgery. He said the necessary equipment would not be available, (although it could be brought down from the operating theatres); he said lighting would be sub-optimal in the labour

rooms, (although mobile lights were available); he said there was no theatre scrub staff on the delivery floor, (although midwives could be trained to act as theatre staff); there was no operating table and the delivery room beds were wider than the tables. He said that the only circumstances where he would even consider a Caesarean section on the delivery room would be where the mother's life was already lost. He said he had no real concept of doing abdominal surgery in the labour room.

98. Against that background I have no hesitation in finding as a fact that established practice at the Jessop Hospital was substantially to the same effect as that subsequently set out in the handbook, but the performance of Caesarean sections in the labour rooms was never part of that practice.

(iii) Did Proper Practice Require Caesarean Section in the Labour Suite?

99. It is the Claimant's case that in 1986 a competently managed delivery suite, if it did not include an integral operating theatre, would have had a delivery room in which Caesarean section could be conducted in an emergency. In support of that contention, the Claimant points to the contemporary academic literature, the lay and the expert evidence.

The Literature

100. The literature on which the Claimant relies does not purport to address the precise location in which Caesarean section should take place. In other words, there is no reference in the literature to a requirement either that all Caesarean sections should take place in operating theatres or to the possibility of conducting such surgery on a labour ward. It was not for that purpose that the Claimant relied upon this material. Instead, reference was made to it to underline the importance, in cases of emergency, of urgent recourse to Caesarean section.

101. I was taken to a considerable quantity of literature. In the survey that followed I refer only to the most important. In the fourth edition of Dewhurst's textbook "*Obstetric and Gynaecology for Postgraduates*", edited by C R Whitfield, and published in 1986, the author says this about labour in multiple pregnancies:

> "*In 70% of twin pregnancies the first foetus presents by the vertex and in 40% both will be born by this presentation. Mal presentations are common especially of the second twin, but mechanical difficulty is rare as the foetuses tend to be small… Labour should be conducted in a well-equipped hospital under the supervision of an experienced obstetrician, with an expert obstetric anaesthetist and a paediatrician in attendance or two paediatricians if the labour is pre-term or there are other complications… General anaesthesia may become necessary at any time… Immediately the first twin is delivered, a transverse lie of the second foetus is sought and corrected by external versions* (manipulation) *through the lax abdominal wall.*"(emphasis added)

102. In the 1984 textbook by Selwyn Crawford entitled "*Principles and Practice of Obstetric Anaesthesia*", fifth edition, the following appears:

> "*There will inevitably be the occasional case in which the second twin lies transversely or obliquely following the delivery of its sibling. The lie can sometimes be corrected under the epidural block alone… If however these manipulations prove to be unsuccessful, urgent delivery by caesarean section will be required, and it is likely that this will have to be conducted under general anaesthesia. Similarly, vaginal delivery of an infant presenting by the breach can prove to be so difficult as to make it advisable to expedite the delivery abdominally, and again provision of a general anaesthetic will probably be indicated. For these reasons in particular, it is mandatory that antitheists be present – and prepared to administer general anaesthesia – when the vaginal delivery of multiple pregnancies or of a foetus presenting by the breach is anticipated, even when the mother is in receipt of an epidural block.*"

103. In the 1980 edition of "*Neural Blockade in Clinical Anaesthesia Management of Pain*", by Cousins and Bridenbaugh, it is said that:

> "*multiple pregnancy is also commonly associated with premature labour and preeclampsia, which contribute further to a higher perinatal mortality. Obstetric intervention and the need for anaesthesia are commonly indicated with urgency in order to expedite delivery of the second twin.*"

104. In his 1979 textbook "*Practical Obstetric Problems*", Iain Donald writes:

> "*An anaesthetist should always be present throughout the second and third stages of all viable twin deliveries, prepared to induce an anaesthetic at a minutes notice…*
>
> *All of us have long recognised that the second twin is at far greater risk than the first…*
>
> *Any general anaesthesia given after the delivery of the first twin has longer in which to affect the second, and wherever possible anaesthesia should be restricted to regional methods for the first and instantly available by a general technique for the second.*"

105. In the 1976 edition of his book "*Obstetric and Anaesthesia and Analgesia*", Donald Muir writes:

> "*It is widely agreed that the mortality is greater among second twins, whatever the method of anaesthesia… Current obstetric opinion emphasises the need to deliver the second twin without delay and in a controlled manner…*
>
> *The anaesthetic requirements for the delivery of twins are influenced by the presentation of each infant and by the*

> *growing recognition of the need to avoid delay in delivering the second twin…*
>
> *An anaesthetist and an experienced obstetrician should be present at every multiple birth. Personnel and facilities for resuscitation and care of two infants will be required.*"

106. What this learning serves to underline is the need, well recognised in and prior to 1986, for expedition in the delivery of a second twin. It says nothing about the central question in the present case, namely whether in a case of great urgency, such as a prolapsed cord during the delivery of a second twin, the risks are such as to mandate immediate surgery on the labour ward if transfer is likely to take more than a very few minutes.

The Lay Evidence

107. The lay evidence on the topic is limited. As noted above, none of the Defendant's witnesses had ever conducted Caesarean section on a labour ward, nor witnessed it, nor heard of it occurring, nor advocated it.

108. The Claimant's one professional lay witness, Professor Li, pointed in his witness statement to the recommendation in the two labour ward handbooks for twin labours to be monitored in Room 4/6 with anaesthetic machines to hand. He said he believed that this guidance was included because these were larger rooms able to accommodate all the people who would need to be present at the delivery of twins and also "*because there were anaesthetic machines to allow for urgent delivery if that became necessary*". He said that the presence of an anaesthetic machine was desirable "*because of a higher risk of operative delivery, particularly of a second twin*".

109. He went on to confirm, however, that he could not recall "*a situation where an operative delivery was carried out under general anaesthetic in room 4 or 6 or elsewhere on the labour ward. However it would have been possible to undertake an operative delivery in these rooms if it was necessary*". In his oral evidence he made it clear that the expression "*operative delivery*" refers to "*a range of means of using equipment for vaginal delivery",* but could include open abdominal surgery.

The Expert Evidence

110. In his report, Mr Clements said the following:

> "*In the late 1980s it was common practice in delivery suites without an obstetric theatre within the unit to have an 'operative delivery room' in which an emergency anaesthetic could be administered if necessary, so as to obviate the time consuming business of moving the mother from the delivery suite to a distant operative theatre.*" (emphasis added)

111. Mr Clements made it clear that he was not suggesting that twins should be delivered in theatre. Instead, he asserted that Mrs Cox should have been cared for "*in a room where a general anaesthetic could immediately have been administered*".

112. In my judgment the evidence to support the assertion that in the late 1980s it was, as Mr Clements suggests, "*common practice*" in delivery suites without an obstetric theatre to have a delivery room in which Caesarean section could be conducted is thin in the extreme.

113. Mr Clements is a clinician of enormous experience. He was a consultant at the North Middlesex Hospital for more than 20 years. He was an honorary lecturer at the Royal Free, an honorary gynaecologist at the Hammersmith and assistant professor at St George's University Medical School in Grenada. He has also worked at University College Hospital, the Royal Northern Hospital, Addenbrooks Hospital, Queen Charlotte's Hospital, Old Church Hospital, Hackney Hospital and Charing Cross Hospital. Yet he could recollect only a single occasion, in that long career, when he had carried out such surgery in a delivery room adapted for the purpose. That was when he was a registrar at the Charing Cross Hospital in the late 1960s. He said he could also recall it happening once at the North Middlesex Hospital, although he was not himself involved.

114. Dr Rubin's experience was similar. He could recall a Caesarean section being performed on a labour ward in St Margaret's Hospital, Epping, in September 1964. He told me that that same year he took up employment in the Charing Cross group of hospitals. He said that he "*understood*" that one hospital member of that group, the Fulham Maternity Hospital, had a delivery room in which operative deliveries could be conducted, although he could not say whether a Caesarean section had ever been performed there.

115. Mr Jarvis had no experience of Caesarean sections being conducted on labour wards. Mr Russell regarded the administration of general anaesthetic on any labour ward in 1986 as objectionable other than in cases where the mother's life was in danger. In no hospital in which he had worked, and that included hospitals in Aberdeen, Canada, Holland, Perth in Western Australia, and latterly in Hull, had he ever seen or heard of Caesareans being conducted under general anaesthetic on a labour ward.

116. Mr Sweeting sought, late in the trial, to deploy print-outs from websites maintained by the Hinchingbrooke Hospital in Cambridgeshire and the Queen Elizabeth Hospital in Gateshead relating to the use of labour rooms for surgery in the 1990s and thereafter. I permitted him to ask Mr Russell questions about them. I accept Mr Russell's evidence that these documents say precisely nothing about practice in or before 1986 and so are of no value to me in this case.

117. It is to be noted that the Monroe Committee report, referred to earlier in this judgment, mandated neither the immediate construction of operating theatres within every delivery suite, nor the immediate provision of delivery rooms equipped in a way that would make Caesarean section operations safe in such rooms. Furthermore, the Munroe report advocated that delivery rooms should be "*large enough [and] suitable for all types of <u>vaginal</u> delivery*" (emphasis added). It suggested that every delivery suite should include apparatus for general anaesthesia without suggesting that such suites ought also to be capable of providing facilities for Caesarean sections, outside theatres. I see nothing there to support a conclusion that the provision of delivery room in which Caesarean sections could safely be performed was common practice or generally required.

118. That then is the totality of the evidence before me going to what Mr Clements called a "*common practice*" of maintaining an operative delivery room in which an emergency anaesthetic could be administered if necessary. I do not suggest that such a practice has not been followed in some hospitals. But I have come very firmly to the view that there was no well-established practice of that sort in 1986 and that this provides no basis for criticising the Defendant in these proceedings.

119. That being so, I reject the Claimant's argument that the system operated at the Jessop Hospital in 1986 was below acceptable standards.

(iv) Would the Conduct of a Caesarean Section on the Delivery Ward have Advanced Delivery by 10 Minutes?

120. The consistent evidence I heard was that a patient could be transferred by trolley from landing one to the theatre on landing four in no more than five minutes. I accept that evidence. It is right to say, however, that there was a difference of view amongst the Defendant's witnesses, notably Professor Smith and Dr Birks, as to whether that five minutes included the time required for getting the patient onto a trolley and ready for the move. Professor Smith's evidence was that it did not and that further time should be allowed for that. I prefer his evidence on this point.

121. I have no precise evidence as to how long those preparations would take but, from the description of what needed to be done it seems to me likely that, in a case such as that of Mrs Cox, they would take about five minutes. The administration of anaesthetics would, on all the evidence I have heard, take about five minutes and the surgery itself would take about five minutes. Adding the five minutes for the transfer itself that produces a total time of 20 minutes. That would fit precisely with the evidence that the total time from the decision to go to Caesarean section to the delivery of Sarah was 20 minutes.

122. By contrast, it is self-evident that, if the surgery could be performed in the delivery room, there would be no delay whilst the patient was moved. There would be no need for the difficult and ungainly procedure whereby a clinician had to attempt to elevate the presenting part off the cord during the transfer. The result would have been that the time between the administration of the general anaesthetic to the delivery of the baby would have been markedly less than 20 minutes. In that regard I accept the evidence of Mr Jarvis and Mr Clements that those steps would have taken no longer than 10 minutes, the same time as would have been spent in the theatre once the patient had been transferred there.

123. The obvious result is that the time during which the cord would have been occluded would have been less. The common position of the obstetricians was that a foetus can tolerate total occlusion of the cord for up to 10 minutes but thereafter damage begins to occur.

124. That analysis takes no account, however, of the steps that would have to be taken from the decision to proceed to Caesarean section to the start of administration of the anaesthesia.

125. The Claimant's argument proceeds on the assumption that the anaesthetic can be delivered in the labour room and surgery conducted in the labour room. The only

equipment available in the delivery suite in 1986 was an anaesthetic machine (and the basic anaesthetic back bar). It is common ground that that alone would not be sufficient.

126. In his joint statement with Dr Rubin, Dr Russell set out what equipment would be required if a labour room was to be used as a place for emergency surgery. Each of the suggested items of equipment were put to Dr Rubin and he agreed that the following would be required: proper anaesthetic back bar with a vaporiser connection and an oxygen failure warning alarm, anaesthetic circuits for both mechanical and hand ventilation, a ventilator for mechanical ventilation of the lungs, all the required equipment for ventilation of the trachea, (i.e. a range of oxygen masks, a range of laryngoscope handles and blades, failed incubation equipment), appropriate monitoring equipment, (an automated blood pressure machine and electro-cardiogram), a rapid infusion device, a blood warmer, adequate suction equipment to cope with vomiting/regurgitation during induction of anaesthesia, a tipping and tilting operating table or appropriate trolley, and adequate background and operating lighting. I was told, and I accept, that the need for this level of equipment is emphasised by comments in the Tri-annual Maternal Mortality report of that era.

127. In addition to having available all of this equipment, it was agreed between the anaesthetists that it would also be necessary to ensure that the anaesthetic machine already present on the labour ward was checked everyday to ensure that it was operating correctly.

128. All this equipment was necessary, according to the two expert anaesthetists, because the administration of anaesthesia, in preparation for Caesarean section, had to be given in a place that was safe. According to Dr Rubin, a safe place was one "*properly equipped for the giving of anaesthetics to the same standards as an operating theatre*". Furthermore, according to Dr Rubin, "*not to have the room equipped as if it was an operating theatre would be beneath acceptable standards in 1986*".

129. Dr Russell suggests that, in addition, the facility to establish invasive cardio vascular monitoring would have been required and it would have been necessary to have adequately trained assistant anaesthetists and surgeons. Dr Rubin did not agree with his colleague in this respect. Dr Rubin's view was that the presence of ODA's (anaesthetic assistants) and theatre staff was desirable, but not mandatory.

130. In Dr Rubin's opinion, the provision of all this equipment would not amount to a substantial transformation of the delivery room. He said the changes to the room that would be necessary would "*not take a great deal of time*" to achieve. He told me that when the emergency occurred the theatre nurses could be summoned. They would bring with them the surgical packs. When they arrived they could set out on a trolley the basic pack, the spares, the swabs and the suction tubing. This would be the work of but a few moments. The drugs would also need to be obtained, but on Dr Rubin's analysis, these should all be kept in a locked room on the delivery floor. The trolleys would then be positioned around the bed, the scrub nurses would scrub up and don gowns, the ODA or the anaesthetists could check the anaesthetic machine and the anaesthetist and the surgeon would then be ready to proceed.

131. In my judgment, however, the Claimant has not established that provision of equipment on this scale, and the establishment of a system for using it in

circumstances such as this, was part of what a reasonably competent obstetric unit would have provided in 1986. In truth, there was no evidence to support such an assertion.

132. In any event, even if I am wrong about that and the provision of all this equipment in the delivery suite could reasonably be expected of the Jessop Hospital, in my judgment insufficient allowance has been made by the Claimant for the time it would have taken to get these facilities, these members of staff and this equipment into operation on the morning of 30 May 1986.

133. It was common ground that the need to use this converted delivery room for surgery would have been a rare event; Mr Clements suggested it would be required once or twice a year. None of the staff would be accustomed routinely to deploying in the labour wards in an emergency since their usual practice would be to operate in an operating theatre. Staff would have had immediately to cease what they were doing at the time, come down from the fourth floor, using the same lift as the Claimant was transported up in, and would then have to have spent some time ensuring that all necessary equipment was readily to hand and working properly.

134. If this was not to be, in reality, a fully equipped operating theatre on landing one, then it was going to take some little time to make the necessary changes, even assuming that all equipment, drugs and personnel were ready to hand and available in good time. In my judgment it is a desperate argument to assert that this could have been done without adding a single minute to the total time for preparing and administering the anaesthetic and conducting the surgery.

135. It might be said that the movement of personnel on the fourth floor to the first floor, and the transportation of some necessary equipment from one to the other, could have begun in the minutes whilst the anaesthetist was preparing and administering the anaesthetic. That might shave a little off the additional time that would have had to be spent getting the room ready. It assumes, however, what has not been proven, that staff and equipment could be made instantly available to begin the move.

136. In any event, however, the Claimant's suggested timetable for these steps to be taken is hopelessly optimistic. The reality is that the Claimant assumes that what in substance would be the transformation of a labour room into a safe and properly staffed and equipped operating theatre can be accomplished in the time it takes an anaesthetist to prepare and deliver the anaesthetics. I have seen no evidence to support such a suggestion that that is remotely possible.

137. In my judgment, had the Defendant made provision for the sort of equipment it is agreed would have been required to be assembled in the delivery room, that would not have resulted in Sarah being delivered 10 minutes quicker than in fact occurred.

(v) The Caesarean Section

138. In the light of the findings set out above as to what occurred on 30 May 1986 and as to the quality of the arrangements in place at the Jessop Hospital, I can see no ground for criticising the clinicians involved in the decision to proceed to Caesarean section or in the conduct of the Caesarean section itself.

139. It is said, in paragraph 24(a) of the Amended Particulars of Claim, that the Defendant's staff failed to appreciate the risks associated with twin delivery. I see no evidence of that at all. Dr Giller was well aware that this was a twin pregnancy and appreciated, after the birth of Samantha, that the twins shared the same amniotic sack.

140. This was undoubtedly a very rare presentation; there were about 2,700 babies born at the Jessop Hospital each year. Statistically, according to Mr Clements, a single sack twin pregnancy could be expected at that hospital once in every four years. Again, according to Mr Clements, the incidents of cord prolapse in second twins are about two in every 100. Accordingly, the incidents of cord prolapse in a second twin from a single sack are vanishingly rare. Mr Clements himself said that he had never seen it. Nonetheless, a cord prolapse is always an emergency and its occurrence in this case imposed on Dr Giller an obligation to react immediately. In my judgment, and this is hardly disputed, she did precisely that.

141. Since it was not part of the arrangement operated at the Jessup Hospital to proceed immediately to Caesarean section in the delivery room, the only course open to Dr Giller was to transfer Mrs Cox to the operating theatre on the fourth floor. That was done promptly and efficiently. In order to reduce the risk of hypoxic damage it was necessary for the treating clinicians to lift up the presenting part, here the foot of the foetus, to prevent it compressing the cord. Dr Giller, together with her junior assistant, did that by keeping her hand in Mrs Cox's vagina as Mrs Cox was transported to the operating theatre. Again, Mr Clements makes no criticism of Dr Giller in this regard.

142. The transfer to the operating theatre was, as I have found, managed in 10 minutes from the time when the cord prolapse was detected. The Claimant makes no criticism of that. The surgery was then conducted within 10 minutes of arrival at the theatre. Again, no criticism was made of that.

143. The reality is that the Claimant made no criticism of Dr Giller's conduct once the decision had been made to transfer Mrs Cox to the operating theatre. In my judgment they are right not to do so. I reject any suggestion of negligence on the part of Dr Giller in this respect.

144. The Claimant has made it clear since the commencement of the hearing in this matter that no allegations of breach of duty are made against Dr Cruickshank, the anaesthetist, in relation to the delivery of Sarah. That was plainly the right course to adopt.

(vi) Should a Vaginal Breech Extraction have been Performed?

145. The Claimant alleges, by the amendment to the Particulars of Claim, that delivery could have been expedited by the use of breech extraction and that failure to do so amounts to a breach of duty. It is not disputed that had a vaginal breech extraction been conducted successfully, Sarah would have been born by 06.35.

146. The criticism in respect of the decision not to attempt vaginal breech extraction is set out in Mr Clements' report. It is to be remembered that when Mr Clements first provided an advisory report to the Claimant's solicitors, he did not suggest there was any negligence in the failure to conduct a vaginal breech extraction. However, in his

current report, he says that the "*easiest and quickest solution to the problem*" of cord prolapse in a second twin "*would have been to perform a breech extraction*".

147. He goes on to explain that vaginal breech extraction has fallen out of favour in modern obstetrics and was out of favour in the mid-1980s. However he says the one exception is the delivery of a second twin.

148. Mr Clements refers to chapter 27 of JWK Riche's publication "*Malpositions of the Occiput and Malpresentations*". Mr Clements said that:

> "*a footling breech in a second twin would have been, in prospect, a relatively easy subject for breach extraction. Dr Giller does not give any hint as to why this simple manoeuvre could not have been performed. Breech extraction would have delivered Sarah within a few minutes after discovery of the prolapsed cord.*"

149. Dr Giller in her oral evidence explained why she did not attempt a vaginal breech extraction. She said she knew the risks involved in such a manoeuvre, namely the risk of damage to the organs of the baby. She said that conditions in the present case were not favourable for such an extraction because "*the liquor had already drained*" and the baby was lying obliquely. She would have had to perform a version, in other words she would have had to turn the baby in the uterus so that it was vertical for delivery, and she had been taught that that requires the presence of liquor. In other words, it was the absence or paucity of liquor that led to Dr Giller not to attempt a breech extraction.

150. In his oral evidence, having heard her explanation, Mr Clements remained critical of Dr Giller. He pointed out that she had acknowledged that she had done two previous breech extractions (in rather different circumstances) and said that made her more experienced than most. He agreed that she had to be confident that she could manage a breech extraction at 06:25 hours when she made her decision. He accepted that the choice facing her was "*unenviable*"; pointing out that if she failed to complete the breech extraction "*she would get the blame*".

151. He accepted that Dr Giller was right to point to the need for there to be sufficient liquor for the procedure to be carried out. However, he said that given that the procedure was to be attempted immediately after delivery of the first twin, there would have been sufficient fluid. He based that assessment on the fact that, although he did not know precisely when the membrane had ruptured, it was likely to have been "*shortly before 06:25*". It was then put to him that, in fact, the records still existing in this case did reveal the time at which the single membrane ruptured. It was not shortly before 06:25. It was at 04:00 hours, nearly two and a half hours earlier.

152. Faced with the obvious point that the liquor would have been draining away in that period, Mr Clements attempted to maintain his position by suggesting first that the rate of drainage would have been slow because the patient was laying on her back, and second that the first twin would have acted as a "*plug*" preventing the drainage of the liquor.

153. I find those explanations difficult to accept. It seems to me that Mr Clements was simply changing his ground in an attempt to meet evidence he had not expected. But in any event, the crucial issue is not whether Mr Clements was right about the presence or absence of liquor. The crucial question is the competence of Dr Giller. She was the attending clinician. She knew that the single membrane had ruptured some hours before the birth of the first twin. She examined the patient vaginally. She was concerned, for good reason, that in fact there was insufficient liquor to perform a vaginal breech extraction. She saw the tangled mass of cords around the remaining twin.

154. Mr Clements said he had great sympathy for the position Dr Giller found herself in. He said he could understand why Dr Giller did not want to carry out the breech extraction. I go further. In my judgment her decision not to attempt a breech extraction in the circumstances that presented themselves to her was entirely reasonable. I see no possible grounds for finding her in breach of duty.

155. In cross examination, Mr Clements attempted to move the focus of his criticism from Dr Giller to the Hospital. I see no grounds for that. Mr Clements conceded that Dr Giller was sufficiently qualified and experienced to conduct this delivery; she was the appropriate person to make the clinical judgment as to the proper method of delivery; and in my judgment her professional decision was beyond criticism. I cannot see what instruction or training Dr Giller's superiors could have given her which would have led her successfully to complete a breech extraction on this occasion.

156. It follows that I reject the claim based on the failure to carry out a vaginal breach extraction.

Timings

157. The conclusions set out above are enough to dispose of this claim. However, Mr Rees, counsel for the Defendant, advanced a further argument, based on the timing of events and the agreement as to the need to save 10 minutes to establish causation, which he said was of itself enough to defeat this claim. In deference to the argument I heard and read on this topic, I now address it.

158. As set out above, it is the Claimant's case that had the decision been made at 06:25 hours on 30 May 1986 to proceed immediately to Caesarean section in the delivery suite, Sarah would have been delivered by 06:35 hours, 10 minutes earlier than in fact it occurred. On that basis, it is agreed between the parties, she would have been spared the damage which in fact she suffered.

159. As set out above, I accept the evidence of Dr Rubin that delivery could have been achieved in 10 minutes from the decision to proceed to Caesarean section if at that point Mrs Cox was present in a properly equipped room. The difficulty for the Claimant is that I have rejected her case both that provision of such a room was required in 1986 and that the 10 minutes for which her experts make allowance would have been sufficient time for all the steps required to have been taken.

160. Mr Rees argues that:

> "*in clinical negligence trials, the breach of duty is frequently defined by reference to a time at which proper care should have produced a stated outcome… breach of duty is framed by the statement of case. There can be no doubt but that the allegation is framed by reference to the last time at which delivery could be achieved and still constitute competent care. If the Defendant achieved delivery at the time which the Claimant's alleged method of delivery would reasonably have achieved, it matters not whether the mode of delivery as was used was the Claimant's method or not*."

161. In cross examination, Mr Clements had agreed with Mr Rees that he would not criticise the Defendant had they achieved delivery by 06:40. Mr Rubin agreed with Mr Clements about that. So, says Mr Rees, since delivery was in fact achieved by 06:45 hours, the Claimant can only complain about a delay of five-minutes. On the agreement as to causation, a five minute improvement in delivery times is insufficient to avoid harm. Accordingly, argued Mr Rees, even on the Claimant's case, this case must fail.

162. In my judgment that argument is fallacious. It confuses the matters which must be established to make a good a claim of breach of duty with the evidence going to causation. The primary allegation of negligence, and the allegation to which the vast majority of the evidence in this case was directed, was to the effect that the Defendant failed to ensure that a Caesarean section could be conducted in the labour ward. If the Claimant had made out that case, it is a question of fact, for me to decide, how much sooner delivery would have been achieved. If delivery would have been achieved, by surgery in the labour room, 10 minutes (or more) earlier than it was in fact achieved, the Claimant would have established her claim.

163. The question for me therefore was whether, had the Caesarean section been performed in the labour ward, Sarah would have been delivered by 06:35 hours. If I had found that to be the case on the facts, causation would also have been made out.

Conclusions

164. Against that background I reach the following conclusions:

i) I find as a matter of fact that the handbook marked "1986-1992" was not produced or circulated before 1987;

ii) There was in existence in May 1986, a practice at the Jessop Hospital pursuant to which Room 4 (later known as Room 6) was used for the delivery of twins and pursuant to which an anaesthetic machine was maintained in the delivery suite. However, there was no practice for the performance of Caesarean sections in the delivery suite at the Jessop Hospital;

iii) There was in 1986 no well-established practice in hospitals without integral operating theatres to maintain in the delivery suite in a room which could rapidly be converted so that it could be used for Caesarean sections in

emergency cases; accordingly, there was no deficiency in the system of care operated at the Jessup Hospital in 1986;

iv) Had the Defendant made provision for the equipment it is agreed would have been required to permit safe Caesarean section in the delivery room, use of it on this occasion would not have resulted in Sarah being delivered 10 minutes quicker than in fact occurred;

v) Dr Giller was guilty of no breach of duty in deciding, when cord prolapse was detected, to transfer Mrs Cox to the operating theatre on level four, or in the conduct of the delivery;

vi) There was no breach of duty in the decision not to attempt vaginal breech extraction.

165. In those circumstances, this claim must fail.