This judgment was delivered in private. The judge has given leave for this version of the judgment to be published on condition that (irrespective of what is contained in the judgment) in any published version of the judgment the anonymity of the children and members of their family must be strictly preserved. All persons, including representatives of the media, must ensure that this condition is strictly complied with. Failure to do so will be a contempt of court.

Neutral Citation Number: [2021] EWFC 27

Case No: CV19C00816

IN THE FAMILY COURT
SITTING AT THE BIRMINGHAM CIVIL JUSTICE CENTRE

IN THE MATTER OF THE CHILDREN ACT 1989

Date: 23/02/2021

Before :

MR JUSTICE PEEL

- -

Between :

A Local Authority	**Applicant**
- and -	
XX	**1st Respondent**
and	
XY	**2nd Respondent**
and	
John, Philip and Ruth (through their Guardian)	**3rd, 4th and 5th Respondents**

- -
- -

Andrew Bagchi QC and Christopher Watson for the Local Authority
Vanessa Meachin QC and Stephen Abberley for the 1st Respondent

Aidan Vine QC and Jennifer Steele the 2nd Respondent
Matthew Brookes-Baker for the 3rd, 4th and 5th Respondents

Hearing dates: 18 January-5 February 2021

- -

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

.....

Mr Justice Peel:

1. In this judgment I shall refer to the Local Authority as "LA", to the Mother as "M" and to the Father as "F". The names of the children are in substitution for their real names, as with other family members.

Introduction

2. In April 2019 Mark was born 10 weeks premature. On 21 May 2019 he was discharged from hospital. Tragically, on 13 June 2019 he died during the night at his parents' house. Unquestionably, the parents were devastated.

3. Subsequent investigations have established that he had sustained the following fractures in the rib/sternum area, totalling 12 in all:

Perimortem

i) A fracture or fissure through the cartilaginous segment of the sternum.
ii) A subtle microfracture to the 3rd anterior right rib.
iii) A partial fracture to the 4th anterior right rib
iv) A partial fracture to the 5th anterior right rib.
v) A complete, transverse non-displaced fracture to the anterior 2nd left rib.
vi) A complete, transverse and displaced fracture to the anterior 3rd left rib.
vii) A complete, transverse and slightly displaced fracture to the anterior 4th left rib.
viii) A complete, transverse non-displaced fracture to the anterior 5th left rib.
ix) A partial fracture to the anterior 6th left rib.
x) A small corner fracture to the posterior 7th left rib.

All the above were consistent with having occurred in the perimortem period i.e. immediately before, at the time of, or after death. They could have occurred as a consequence of a single event or more than one event.

Other

xi) A corner fracture to the posterior left 8th rib.
xii) A corner fracture to the posterior left 9th rib.

These were not perimortem and occurred between 2 to 4 days (the 8^{th} rib) before death and 3 to 5 days (the 9^{th} rib) before death, caused either on two separate occasions or on the same occasion.

4. The parents have three other children, one born before Mark's death and two born after his death:

(i) John, now 3 years old.
(ii) Philip, now 1 year old.
(iii) Ruth, now 2 months old.

5. John was removed from his parents almost immediately after the death of Mark, initially to his great aunt and then into a foster placement. Philip was removed into foster care upon his discharge from hospital after birth. Both John and Philip are living with the same foster carer.

6. Ruth was made the subject of an interim care order upon her birth for a short period of time while she was in hospital with M. On 21 December 2020 I heard a contested interim care order application. There was no dispute that the interim threshold criteria were met; the issue was separation of baby from mother. I decided that upon discharge from hospital M and Ruth should move to a mother and baby foster placement (which was the submission of M, F and the Guardian) rather than be separated (which was the submission of the LA). That placement broke down on 8 January 2021 when M left the foster carer's house and returned home. By 11 January 2021 she had changed her mind and sought to return to the placement. The LA (supported by the Guardian) opposed a resumption of the placement. I convened an urgent hearing on 13 January. For reasons set out in an ex-tempore judgment, I approved the LA's position. Ruth continues to live with the same foster carer, but without her mother in the same placement.

Findings sought

7. Counsel for the LA were careful to keep open the possibility of amendment of the Schedule of Findings sought depending on how the case evolved. Revised findings sought were circulated on 5 February 2021. The fourteen specific paragraphs, and multiple sub-paragraphs, coalesce around 6 categories which should be seen as part of an overall picture:

The fractures and the death of Mark

i) a) That the fractures were caused by the application of compressive force by the body of one or both parents during co-sleeping, although the LA acknowledges that CPR may have caused the perimortem fractures.

b) That the death of Mark was caused while co-sleeping with the parents, during which Mark suffered cardiac and/or respiratory arrest resulting from one or a combination of airway obstruction, circulatory failure, significant increase in temperature or thermal imbalance, and the creation of a micro-environment high in carbon dioxide.

It is not alleged that either (a) or (b) were caused deliberately, rather that they were the result of grossly negligent parenting by M and/or F.

Co-sleeping

ii) That the parents co-slept with Mark despite clear professional advice that they should not do so.

Drug and alcohol use

iii) That both parents are long-term users of cannabis and were under the influence of cannabis and alcohol on the night of Mark's death.

Poor home conditions and poor personal hygiene

iv) That the family property was frequently found to be dirty and chaotic, and the parents had very poor personal hygiene.

Failure to engage with professionals

v) That the parents have failed to engage fully with various professional services.

Domestic violence/abuse

vi) That the parental relationship has been characterised by violence, swearing and volatility, often in front of the children.

The hearing before me

8. The witness evidence fell broadly into the following categories:

i) Clinical staff at the hospital.
ii) Police officers involved in the investigation.
iii) Social care and other workers involved with the family.
iv) Family members and others present in the house at the material time.
v) Experts instructed in the proceedings.

9. The electronic bundle totalled over 5000 pages, and I heard oral evidence from 20 witnesses. I received detailed written submissions from highly experienced legal teams. The hearing lasted 16 days (including a day for preparation of closing written submissions in lieu of returning to deliver oral submissions), at the end of which I reserved judgment. No stone has been left unturned.

10. This case took place during national lockdown and was conducted as a hybrid hearing with most of the evidence given by MS Teams. M and F initially both joined remotely from M's house. I was told by counsel for each parent at the outset that they would probably absent themselves from parts of the evidence which they might find distressing. For those and other reasons they attended some, but by no means all, of the proceedings. However, counsel made clear throughout that they had instructions to proceed in their various absences, and at no point were adjournments sought on their behalf.

11. To begin with, the hearing proceeded reasonably smoothly and in accordance with the trial template. By the second week, and in particular the third week, a number of witness evidence issues had arisen.

12. At the start of the hearing, I was informed that F would prefer to give his evidence remotely from his solicitors' office. There was no objection from the other parties, and I acceded to this request. He had been the subject of a psychological report dated 14 January 2020 which recommended the use of an intermediary to assist him. As requested by F's counsel, I made two directions (one before the hearing and one during the hearing) enabling him to be assessed by Communicourt. Unfortunately, F did not attend either of the assessment meetings. Although F was largely in attendance (albeit remotely) at the start of the hearing, his presence reduced as the hearing went on. By the second week his legal team were unable to obtain instructions from him. He ceased communicating with them on Monday 25 January. On Thursday 28 January I made orders requiring him (i) to attend a Communicourt assessment on 1 February and (ii) requiring him to attend court in person (rather than remotely) on Wednesday 3 February. Fortunately, that same afternoon he made contact again with his solicitors. He attended a Communicourt assessment and made himself available to give his evidence as previously planned; the order requiring him to attend court was varied to provide for attendance at his solicitors' offices for the purpose of giving evidence by the videolink. The Communicourt report indicated that an intermediary was not necessary, but certain measures should be put in place for the

giving of his evidence. Those measures were incorporated in a ground rules document which underpinned his evidence given to me remotely on Wednesday 3 February 2021.

13. Jack, the ex-partner of M's sister Rachel, was served with a witness summons dated 21 December 2020 to attend court on 1 February 2021. He did not attend as required. I issued a bench warrant for him to be brought to court on Wednesday 3 February 2021 when he gave his evidence.

14. A witness summons was issued on 21 December 2020 for M's sister Rachel to attend court. For some weeks it was not possible to serve her. M and the maternal grandmother said they did not know her whereabouts. Eventually, she was served on 28 January 2021 at M's house where, it transpires, she was staying; M's claimed ignorance of her whereabouts was hollow. Rachel did not comply with the witness summons or take up offers of taxis to attend voluntarily. I issued a bench warrant, and she was brought to court on the last day of the allotted 16-day hearing. Before giving evidence, she was palpably distressed, shaking and crying volubly, not helped by M saying to her over the video-link "Don't do it Rachel, they can't make you". At one point it seemed unlikely she would be able to give her evidence at all, but after a break she was sufficiently composed to start, and conclude, her oral testimony.

15. M indicated through counsel at the start of the case that she would prefer to give her own evidence in person at court rather than remotely. Some Covid issues arose, and M's counsel informed me that in the circumstances she was willing to give her evidence remotely from home on Tuesday 2 February. After she began giving evidence, it swiftly became apparent that the connection was unsatisfactory. She kept on breaking up and questions had to be repeated. I paused the hearing to allow attempts to be made to remedy the problem. By that stage her examination in chief had ended and she was being cross examined by leading counsel for the LA. I was then told by M's counsel that M had become distressed by giving evidence and could not resume. I allowed M more time to compose herself, and invited her counsel and/or solicitors to discuss with her whether she would prefer to continue giving evidence remotely from another venue such as her solicitors' offices, or in person at court if a Covid test so allowed. After taking an early lunch, the hearing resumed at 1.15pm and I was told that M felt unable to continue giving her evidence. In the circumstances, and with no opposition from any counsel, I made an order for her to attend at court on Thursday 4 February. On 4 February (having tested Covid negative that morning) she was present at court with her leading counsel to resume her evidence at 11.30am. Within a few minutes, at 11.43 she walked out of the court room saying she had had enough and couldn't go on.

16. When she came back into court with leading counsel at 12.10, she told me directly and through counsel that she did not want to give evidence. I emphasised to her that I wanted to find a way for her to do so as comfortably as possible. Suggestions such as giving evidence remotely from a room with her counsel present did not find favour. I sensed an almost total resistance to giving evidence.

17. I made plain to her counsel that her legal team should have time to consider a way forward. I indicated, however, that at some point a decision would have to be made. I adjourned the case to allow M and her legal team to have discussions. At 2pm I was

told she was still unwilling to give oral evidence. Her counsel said that an intermediary was able to see her that afternoon to assess how her evidence might be given. The LA were generally resistant to more latitude being given to M, but I adjourned for her to see the proposed intermediary.

18. At 4.30pm the hearing resumed. By this stage, M was at her counsel's chambers with her legal team and the intermediary, Ms Backen; they attended remotely. I was invited to hear Ms Backen's observations. She told me that although M has had limited education, her reading and writing skills are functional. Her comprehension is reasonable, with basic reasoning skills. She had explored with M the possibility that she might regret not giving evidence. She told me that M was willing to resume giving evidence the next day (5 February), and would be assisted by the presence of Ms Backen, regular breaks and clear questions. It seemed to me that, with those steps taken, there was no reason why M could not resume her evidence. I bear in mind that no application for special measures had ever been made, and M's opposition to giving evidence was taking place at the very end of the hearing with no prior warning.

19. Unfortunately, when Ms Backen asked how long the questioning might take, and was informed by me that the witness template indicated 3 hours, M stated again that she would not give evidence. Her counsel asked to consider the position with Ms Backen and M overnight, and I adjourned the hearing to the next morning. In so doing I made it clear that this would very likely be the last chance for evidence to be given by M. I was mindful that she had started evidence on Tuesday 2 February and had had ample time to reflect on her position and find, with her legal team, a way forward enabling her to complete her evidence. In short, a line had to be drawn. I considered it unfair on all parties, including the children, not to set a deadline. Nobody demurred from this course of action.

20. The next morning at 9.30am I received a message from her counsel that M had not taken the taxi which was provided for her, and had decided not to give evidence. She said that she had already "given her side", did not want to continue talking about how her son died and was stressed and upset. That position was subsequently confirmed by her counsel orally. No applications for an adjournment were made, or for any other steps to be taken to enable the giving of her evidence. I was informed that M's legal team felt her decision not to give evidence should be respected. Her evidence therefore concluded.

21. The consequence of these matters is that the evidence was completed at lunch on the final day of the hearing. The parties agreed to send in written submissions, which comprised nearly 100 pages. No party sought time to be set aside for oral submissions. I reserved judgment.

22. I am immensely grateful to the legal teams for their assistance. The electronic bundle was well prepared, coherently put together and easy to navigate. The parties cooperated about the witness template. The specific witness issues to which I have just referred were handled by counsel patiently and sensibly. Directions orders had to be made during the case and were drafted promptly for my attention. The lawyers involved were throughout immensely constructive, focused and practical. Counsel did their very best to assist the court without in any way impacting the quality of the

advocacy on behalf of their clients. No more could have been said or done on behalf of the parties.

The background

23. M was born in 2000 and is now 20 years old. She and her siblings were all made the subject of care orders and removed from their mother's care. 3 of her siblings were adopted. She herself was made the subject of a final order in 2012 and thereafter placed either in foster care or residential units. I do not underestimate the impact of these life experiences upon her.

24. F was born in 1997 and is now 24 years old. He describes himself as having had a "good childhood". He has been in and out of employment since the age of 16.

25. Due to her personal history and young age, the LA was aware of M prior to the birth of John. As at 21 September 2017 social services recorded "No significant concerns have been identified and therefore the threshold for social care involvement has not been met at this time".

26. In 2018 John was born at full term by normal delivery. There were no significant associated medical problems.

27. A referral on 20 March 2018 expressed concern about lack of engagement with support services, the possibility of neglect of John and a poor home environment. A s47 investigation was undertaken.

28. On 3 April 2018 it was recorded that "The home conditions were very clean, and parents are very organised. There are no safeguarding concerns, and the care of John is excellent".

29. On 27 June 2018, a re-referral by the Family Nurse Partnership identified poor and unhygienic home conditions and one incident of alleged domestic violence.

30. On 22 October 2018 the case was closed on the basis of M receiving continuing support from Through Care and the Family Nurse Practitioner.

31. In late November 2018, a further referral was made due to an ongoing lack of engagement, but there is nothing before me to indicate that the LA ever actively contemplated care proceeding in respect of John. The limited evidence I heard about this period suggests that the overall picture of the family was reasonably positive. The parents' good interaction with John was remarked upon and he appeared happy and developing normally.

32. In 2019 Mark was born at approximately 29 weeks and 6 days gestation. He was noted to be in good condition at birth. He was given added oxygen and gentle inflation breaths before being transferred to the neonatal intensive care unit. His birth weight was between the 50th and 75th centile, and his head circumference was on the 25th centile. He had mild respiratory difficulties for a few hours but did not develop significant respiratory distress. He was given 5 days of antibiotic treatment because of a possible inflammation. His feeding intake was good, and he gained weight normally. His head circumference also grew normally. Ultrasound scans showed signs of some cranial bleeding before birth.

33. On 8 May 2019 a referral was made by the Family Nurse Partnership and the Through Care Team raising issues of neglect. The LA allocated a social work team, and an assessment began. Initial concerns revolved around (i) poor home conditions and personal hygiene, (ii) John occasionally presenting as poorly clothed and fed and (iii) failure by the parents to engage with the professionals, in particular not keeping to pre-arranged meetings. As time passed, the parents came to trust the social workers more, and all aspects appeared to improve. I heard about the parents' positive relationship with the children, their politeness to the professionals and their increasing levels of cooperation.

34. Against this generally improving picture, it is disappointing to note that on 15 May 2019 and on the morning of 21 May 2019, shortly before the discharge meeting, the parents were asked by social workers, respectively Barbara Darby and Lucy Lowe (both of whose evidence to me I accept without hesitation) whether they took drugs; both replied no. The LA was not aware that in fact the parents were habitual cannabis users. There were no signs of cannabis when social workers attended and nothing to alert them to this possibility. Outwardly, all was well. Had they been aware, the assessment process would have been very different, focusing on drug dependency and its consequences including protective issues and whether the parents were able properly to prioritise the children. Sleep safe advice would have carried even greater urgency.

35. Nor did the parents inform social workers that other family members were living with them during this assessment period, in particular M's sister Rachel and her then boyfriend Jack. Indeed, the parents asked Rachel and Jack to leave when social workers attended. This was deliberate concealment. One reason, as the evidence established, is that the parents thought the presence of Rachel and Jack might impact on their care of the children. Another reason, I suspect, is also that they too were regular cannabis users (M's mother confirmed that Rachel has regularly smoked cannabis since before Mark's death, and Jack is a long-standing drug user).

36. After a meeting on 21 May 2019, attended by the parents, three social workers and the neonatal unit ward manager, Mark was discharged from hospital and went home with his parents. One of the court appointed experts, Professor Mangham, comments that by the time of discharge "…despite having been born more than 10 weeks before his estimated birth date, Mark had a relatively straightforward course in the neonatal unit, with no major complications and no identified significant medical or developmental abnormalities".

37. Thereafter regular home visits by social workers and family nurses took place. No developmental concerns about Mark were observed and I have already noted the family's apparent steady progression. By 12 June 2019, albeit the social work assessment had not yet been completed, there were no obvious grounds for concern. It is likely that had it not been for the death of Mark, the LA would not have instigated formal care proceedings, rather it would have offered continuing support. There was no apparent need for intervention.

38. The necessary and important caveat is that the LA was not aware of two important matters, either of which would have raised serious red flags:

    i) The parents' drug use which was deliberately concealed

ii) Family members staying in the house who were cannabis users, again concealed.

39. On the evening of 12 June 2019, the family went to a nearby social club just after 7pm, returning home shortly before 10pm. At some point during the night Mark stopped breathing. The ambulance was called at 05.49am and arrived at 05.54am. It left for hospital at 06.04 and arrived at 06.10. The paramedics applied CPR to Mark both at the house and in the ambulance. At 06.22 all resuscitation attempts ceased, and Mark was declared dead by the Emergency Department consultant at 06.27 on the morning of 13 June 2019.

40. Both parents gave accounts to DI Miles and the on call paediatric consultants from about 7.45am to just after 9am. At about 1pm, DI Miles and Dr Green (one of the consultants) made a home visit. The parents' bedroom smelled strongly of cannabis. An open box containing a large quantity of cannabis was found on the windowsill. A baby bottle was on the adult bed. The duvet was a winter 13.5 tog. The room was hot, with the window closed and the heating on. The thermostat was set at 27.5 degrees and the boiler was set to maximum. DS Cooper (part of an attendance at the house by 4 police officers about half an hour before) described that she was overwhelmed by the heat. Dr Green in oral evidence said she was told by M that they had kept the heating on all night.

41. The parents were arrested and interviewed by police that day, and subsequently re-interviewed on 20 June 2020.

42. Care proceedings were promptly issued by the LA. On 19 September 2019 at court the parents stated that they were no longer in a relationship and wished to be assessed separately. On the evidence I have heard they have never completely separated, and their relationship has been on/off with F periodically leaving M for a few days before returning. Even during this hearing, that pattern was apparent with F staying at M's property for the first week before leaving after a row at the start of the second week.

43. In November 2019 Philip was born at 25-week gestation. He was intubated at birth and in the ICU. He was discharged from hospital on 30 May 2020 into the same placement as John.

44. M has attended only one out of 5 parenting assessment sessions and as a result her parenting assessments could not be completed in either December 2019 or in August 2020. F attended some (but not all) meetings for the parenting assessment which concluded in December 2019 and was negative. His updating assessment in September 2020 was similarly negative.

45. In December 2020 Ruth was born at nearly full term, and without any major health complications. She was discharged from hospital on 21 December 2020.

The parents' case about 13 June 2019

46. In their initial written Children Act statements, the parents say that on the evening of 12 June 2019 they had a takeaway at home between about 6 and 7pm. M's sister, Rachel, and her then boyfriend Jack were staying with them, sleeping on the sofa. M's mother, Rose, was working at a local social club. M and F decided to go to the social club. They took a taxi there with John and Mark, leaving home between 7 pm and

7.30pm (the taxi records show they left home at 7.17pm and arrived at the club at 7.28pm).

47. On M's case, she had 3 sips of a bottle of Rekorderlig; F finished her drink and had a pint of Carling cider, as well as a pint of Carling cider dark fruits. On F's evidence they each had one drink and he had 3 sips of a second drink which he abandoned. At about 9.30-10pm they went home, again by taxi (the taxi records show they arrived home at 9.50pm).

48. Their home consists of 2 upstairs bedrooms. John was put to bed in his bedroom by F.

49. M says that at about 10.30pm, she bathed and fed Mark and put him in his Moses basket to sleep in the parents' bedroom; the Moses basket was placed on M's side of the small double bed. M and F went into the garden to share a spliff, asking Rachel to look after Mark. The parents then went up to bed and fell asleep at about 11pm.

50. F says in his statement that after putting John to bed, he came downstairs and took over feeding Mark. They took him upstairs in his Moses basket. Mark woke up 10 minutes later to finish the bottle. They then brought him downstairs. M and F went outside to smoke a spliff. When they came inside, they went upstairs, F carrying the basket and M carrying Mark who was then "put in the basket". They fell asleep.

51. M says that at about 2 or 3 am she felt what she thought was Mark's foot in bed. She told F to put him in the Moses basket which he did. Later that morning she woke to the sound of F shouting; he was standing at the foot of the bed holding Mark in his arms.

52. F says that at some point he woke to feed Mark and fell asleep sitting up in bed, with Mark lying in his arms. During the night, M woke up and nudged F to put Mark back in his basket which he did. Later he got up to go to the toilet, saw Mark was not breathing in his basket, picked him up and shouted at M to wake up.

53. Both refer to doing chest compressions and resuscitation attempts. M ran downstairs with Mark and continued chest compressions on the sofa. She shouted out to her sister, Rachel, to call the ambulance. Rachel carried out some further chest compressions. M says, and F does not dispute, that F ran around the house, and said "it's all my fault".

54. It is immediately apparent that there are some discrepancies between each party's accounts of the events of 12/13 June 2019.

The Law

55. The foundation stone of any fact-finding hearing is Section 31(2) of the Children Act 1989:

> (2) A court may only make a care order or supervision order if it is satisfied—
>
> (a) that the child concerned is suffering, or is likely to suffer, significant harm; and
>
> (b) that the harm, or likelihood of harm, is attributable to—
>
> (i) the care given to the child, or likely to be given to him if the order were not made, not being what it would be reasonable to expect a parent to give to him.

56. The law is well-established and not in dispute. I am grateful to the parties for providing an agreed legal note.

57. The nature and purpose of a fact-finding hearing has been summarised thus by McFarlane LJ in **Re R (Children) (Import of Criminal Principles in Family Proceedings) [2018] EWCA Civ 198** at paragraph 61**:**

> "In family proceedings, the outcome of a fact-finding hearing will normally be a narrative account of what the court has determined (on the balance of probabilities) has happened in the lives of a number of people and, often, over a significant period of time. The primary purpose of the family process is to determine, as best that may be done, what has gone on in the past, so that that knowledge may inform the ultimate welfare evaluation where the court will choose which option is best for a child with the court's eyes open to such risks as the factual determination may have established."

58. The burden of proving the facts pleaded rests with the local authority. As Mostyn J said in **Lancashire County Council v R and W [2013] EWHC 3064 (Fam):**

> "There is no pseudo-burden or obligation cast on the respondents to come up with alternative explanations".

59. Just because the parents do not give an explanation for an injury, it does not follow that the real explanation must be a sinister one. There is no requirement upon the parents to satisfy the court that the injuries were accidental: **Re M (fact-finding: burden of proof) [2012] EWCA Civ 1580**.

60. The standard to which the local authority must satisfy the court is the simple balance of probabilities, neither more nor less: **Re B (Care Proceedings: Standard of Proof) [2008] UKHL 35**.

61. The inherent probability or improbability of an event remains a matter to be taken into account when weighing the probabilities and deciding whether, on balance, the event occurred: **Re B [2008] UKHL 35.** As Peter Jackson J (as he then was) said in **Re BR (Proof of Facts) [2015] EWFC 41** at [7]:

> (3) "The court takes account of any inherent probability or improbability of an event having occurred as part of a natural process of reasoning. But the fact that an event is a very common one does not lower the standard of probability to which it must be proved. Nor does the fact that an event is very uncommon raise the standard of proof that must be satisfied before it can be said to have occurred.
> (4) Similarly, the frequency or infrequency with which an event generally occurs cannot divert attention from the question of whether it actually occurred. As Mr Rowley QC and Ms Bannon felicitously observe:
>
> > "Improbable events occur all the time. Probability itself is a weak prognosticator of occurrence in any given case. Unlikely, even highly unlikely things do happen. Somebody wins the lottery most weeks; children are struck by lightning. The individual probability of any given person enjoying or suffering either fate is extremely low."
>
> I agree. It is exceptionally unusual for a baby to sustain so many fractures, but this baby did. The inherent improbability of a devoted parent inflicting such widespread, serious injuries is high, but then so is the inherent improbability of this being the first example of an as yet undiscovered medical condition. *Clearly, in this and every case, the answer is not to be found in the inherent probabilities but in the evidence, and it is when analysing the evidence that the court takes account of the probabilities."* [emphasis added]

62. It does not follow that once all other possibilities are rejected, whatever remains must be the truth: **Rhesa Shipping SA v Edmunds, The Popi M [1985] 1 WLR 948** per Lord Brandon at 955G.

63. Findings of fact must be based on evidence, not on suspicion or speculation: per Munby LJ at paragraph 26 of **Re A [2011] EWCA Civ 12.**

64. The LA must prove not just the primary facts, but also the causal link between any facts found and the risks alleged: **Re A [2016] 1 FLR 1** and **Re L-W [2019] 2 FLR 278.** In **Re A** Sir James Munby P said:

> **[12]** The second fundamentally important point is the need to link the facts relied upon by the local authority with their case on threshold, the need to demonstrate *why*, as the local authority assert, facts A + B + C justify the conclusion that the child has suffered, or is at risk of suffering, significant harm of types X, Y or Z. Sometimes the linkage will be obvious, as where the facts proved establish physical harm. But the linkage may be very much less obvious where the allegation is only that the child is at risk of suffering emotional harm or, as in the present case, at risk of suffering neglect. In the present case, as we shall see, an important element of the local authority's case was that the father 'lacks honesty with professionals', 'minimises matters of importance' and 'is immature and lacks insight of issues of importance'. Maybe. But how does this feed through into a conclusion that A is at risk of neglect? The conclusion does not follow naturally from the premise. The local authority's evidence and submissions must set out the argument and explain explicitly why it is said that, in the particular case, the conclusion indeed follows from the facts. Here, as we shall see, the local authority conspicuously failed to do so.

65. The decision on whether the facts in issue have been proved to the requisite standard must be based on all of the available evidence. The court looks at the broad canvas of the evidence before it in order to make findings on the balance of probabilities accordingly. Each piece of evidence should be considered in the context of all of the other evidence.

As Dame Elizabeth Butler-Sloss P observed in **Re T [2004] 2 FLR 838**:

> "Evidence cannot be evaluated and assessed in separate compartments. A judge in these difficult cases must have regard to the relevance of each piece of evidence to other evidence and to exercise an overview of the totality of the evidence in order to come to the conclusion whether the case put forward by the local authority has been made out to the appropriate standard of proof."

And as King LJ said in **Re A (Children) [2018] EWCA Civ 1718**:

> "57. I accept that there may occasionally be cases where, at the conclusion of the evidence and submissions, the court will ultimately say that the local authority has not discharged the burden of proof to the requisite standard and thus decline to make the findings. That this is the case goes hand in hand with the well-established law that suspicion, or even strong suspicion, is not enough to discharge the burden of proof. The court must look at each possibility, both individually and together, factoring in all the evidence available including the medical evidence before deciding whether the "fact in issue more probably occurred than not" (Re B: Lord Hoffman).
>
> 58. In my judgment what one draws from Popi M and Nulty Deceased is that:
> i) Judges will decide a case on the burden of proof alone only when driven to it and where no other course is open to him given the unsatisfactory state of the evidence.
> ii) Consideration of such a case necessarily involves looking at the whole picture, including what gaps there are in the evidence, whether the individual factors relied upon are in themselves properly established, what factors may point away from the suggested explanation and what other explanation might fit the circumstances.
> iii) The court arrives at its conclusion by considering whether on an overall assessment of the evidence (i.e. on a preponderance of the evidence) the case for believing that the suggested event happened is more compelling than the case for not reaching that belief (which is not necessarily the same as believing positively that it did not happen) and not by reference to percentage possibilities or probabilities."

66. The use of the terms accidental and non-accidental injury was considered by Ryder LJ in **Re S (A Child) [2014] EWCA Civ 25:**

> [19] "The term 'non-accidental injury' may be a term of art used by clinicians as a short hand and I make no criticism of its use, but it is a 'catch-all' for everything that is not an accident. It is also a tautology: the true distinction is between an accident which is unexpected and unintentional and an injury which involves an element of wrong. That element of wrong may involve a lack of care and/or an intent of a greater or lesser degree that may amount to negligence, recklessness or deliberate infliction. While an analysis of that kind may be helpful to distinguish deliberate infliction from, say, negligence, it is unnecessary in any consideration of whether the threshold criteria are satisfied because what the statute requires is something different namely, findings of fact that at least satisfy the significant harm, attributability and objective standard of care elements of section 31(2).
> [20] The court's function is to make the findings of fact that it is able on the evidence and then analyse those findings against the statutory formulation. …. If, as is often the case when a clinical expert describes harm as being a 'non-accidental injury', there is a range of factual possibilities, those possibilities should be explored with the expert and the witnesses so that the court can understand which, if any, described mechanism is compatible with the presentation of harm.
> [21] The threshold is not concerned with intent or blame; it is concerned with whether the objective standard of care which it would be reasonable to expect for the child in question has not been provided so that the harm suffered is attributable to the care actually provided. The judge is not limited to the way the case is put by the local authority but if options are not adequately explored a judge may find a vital piece of the jigsaw missing when s/he comes to look at all the evidence in the round"

67. In this case, apart from the cause of death and fractures, the LA seeks findings about drug use, poor home conditions, poor personal hygiene, failure to engage with professional services and domestic abuse. Where there are shortcomings in the family's social circumstances it is for the LA to demonstrate that the requisite threshold is crossed: **Re L [2007] 1 FLR 2050** and **Re B (Care Proceedings: Appeal) [2013] 2 FLR 1075**, **Re A (Application for Care and Placement Orders: Local Authority Failings) [2016] 1 FLR 1** and **Re L-W (Children) [2019] 2 FLR 278.** The smoking of cannabis by itself does not mean that the threshold is crossed: **Re J [2015] EWCA Civ 222**. Lord Wilson in **Re B** cited with approval the famous words of Hedley J in **Re L** that:

> 'society must be willing to tolerate very diverse standards of parenting, including the eccentric, the barely adequate and the inconsistent'; and, at para [51], that 'significant harm is fact-specific and must retain the breadth of meaning that human fallibility may require of it' but that 'it is clear that it must be something unusual; at least something more than the commonplace human failure or inadequacy'.

Baroness Hale in the same case said:

> **[179]** Since well before the Children Act came into force, the courts have recognised that there is a line to be drawn between parents whose personal characteristics mean that they may be less than perfect parents and parents who may cause harm to their children. Lord Templeman put the point this way in his well-known words in *Re KD (A Minor) (Ward: Termination of Access)* [1988] AC 806, [1988] 2 WLR 398, [1988] 2 FLR 139, at 812, 400 and 141 respectively:
>
> > 'The best person to bring up a child is the natural parent. It matters not whether the parent is wise or foolish, rich or poor, educated or illiterate, provided the child's moral and physical health are not endangered. Public authorities cannot improve on nature.'
>
> If, by that last sentence, Lord Templeman was making a factual statement, then some might disagree: if local authorities remove children from unsatisfactory parents at birth and swiftly place them with highly satisfactory adoptive parents they can undoubtedly improve on nature. But in my view Lord Templeman was making a normative statement: public authorities have no right to improve on nature.

68. Appropriate attention must be paid to the opinion of medical experts, but those opinions need to be considered in the context of all the other evidence. The judge is the decision maker, the expert is not. The roles of the court and the expert are distinct: per Charles J at paragraphs 38-41 of **A Local Authority v K, D and L [2005] EWHC 144 (Fam).** The expert evidence is part of a wider canvas. It must be

weighed against the lay factual evidence and the court's conclusions concerning the credibility of the participants.

69. It should be borne in mind that today's medical certainty may be discarded by the next generation of experts or that scientific research will throw light into corners that are at present dark: **Re U (Serious Injury: Standard of Proof): Re B [2004] 2 FLR 263** at paragraph 23. Scientific certainties of a past age are often proved conclusively wrong by later generations: per Mostyn J in **A County Council v M and F [2012] 2 FLR 939** at paragraph 251. Today's orthodoxy may become tomorrow's outdated learning: **R v Holdsworth [2008] EWCA Crim 971** at paragraph 57.

70. The court should also consider, to the extent appropriate in the given case, the possibility of an unknown cause for the child's presentation: **R v Henderson and Butler and Others [2010] EWCA Crim 126, Re R (Care Proceedings: Causation) [2011] EWHC 1715 Fam)** and **Re TG [2013] EWCA Civ 5** where Munby LJ said:

> **[33]** In this connection the case management judge will also need to bear in mind what Hedley J said in *Re R (Care Proceedings: Causation)* [2011] EWHC 1715 (Fam), [2011] 2 FLR 1384, para [10]:
>
> > '… there has to be factored into every case which concerns a disputed aetiology giving rise to significant harm a consideration as to whether the cause is unknown.'
>
> My Lord elaborated the point in an important passage (para [19]) which merits quotation in full:
>
> > 'I have been impressed over the years by the willingness of the best paediatricians and those who practise in the specialities of paediatric medicine to recognise how much we do not know about the growth patterns and what goes wrong in them, particularly in infants. Since they grow at a remarkable speed and cannot themselves give any clue as to what is happening inside them, and since research using control samples is self-evidently impossible in many areas, perhaps we should not be surprised. In my judgment, a conclusion of unknown aetiology in respect of an infant represents neither professional nor forensic failure. It simply recognises that we still have much to learn and it also recognises that it is dangerous and wrong to infer non-accidental injury merely from the absence of any other understood mechanism. Maybe it simply represents a general acknowledgement that we are fearfully and wonderfully made'.

71. The evidence of the parents and carers is of utmost importance. The court should form a clear assessment of their credibility and reliability. The court is likely to place considerable reliability and weight on the evidence and impression it forms of them; **Re W and another (Non-accidental injury) [2003] FCR 346**. Peter Jackson J said in **Lancashire County Council v M and F [2014] EWHC 3 (Fam)** that:

> "To these matters I would only add that in cases where repeated accounts are given of events surrounding injury and death, the court must think carefully about the significance or otherwise of any reported discrepancies. They may arise for a number of reasons. One possibility is of course that they are lies designed to hide culpability. Another is that they are lies told for other reasons. Further possibilities include faulty recollection or confusion at times of stress or when the importance of accuracy is not fully appreciated, or there may be inaccuracy or mistake in the record keeping or recollection of the person hearing or relaying the account. The possible effects of delay and repeated questioning upon memory should also be considered, as should the effect on one person of hearing accounts given by others. As memory fades, a desire to iron out wrinkles may not be unnatural – a process that might inelegantly be described as "story-creep" may occur without any necessary inference of bad faith."

In this regard, I am hampered by the absence of M's full testimony.

72. A witness may tell lies during an investigation and the hearing for many reasons, such as shame, misplaced loyalty, panic, fear and distress. The fact that a witness has lied about some matters does not mean that he or she has lied about everything: **R v Lucas [1982] QB 720**, applied in family proceedings in **Re H-C (Children) [2016] EWCA Civ 136**).

73. The need for care with memory and witness demeanour was highlighted by Leggatt J (as he then was) in **Gestmin SGPS SA v Credit Suisse (UK) Ltd & Anor [2013] EWHC 3560** and by the Court of Appeal in **Sri Lanka v the Secretary of State for the Home Department [2018] EWCA Civ 1391.** Macdonald J in **A Local Authority v W & Ors (Finding of Fact Hearing) [2020] EWFC 68** noted that the authors of **Phipson on Evidence** say at 12-36:

> "The credibility of a witness depends on his knowledge of the facts, his intelligence, his disinterestedness, his integrity, his veracity. Proportionate to these is the degree of credit his testimony deserves from the court or jury. Amongst the more obvious matters affecting the weight of a witness's evidence may be classed his means of knowledge, opportunities of observation, reasons for recollection or belief, experience, powers of memory and perception, and any special circumstances affecting his competency to speak to the particular case—all of which may be inquired into either in direct examination to enhance, or in cross-examination to impeach the value of his testimony."

74. Commenting on the assessment of credibility, Mostyn J in **Lancashire County Council v R [2013] EWHC 3064** said:

> "The assessment of credibility generally involves wider problems than mere 'demeanour' which is mostly concerned with whether the witness appears to be telling the truth as he now believes it to be. With every day that passes the memory becomes fainter and the imagination becomes more active. The human capacity for honestly believing something which bears no relation to what actually happened is unlimited. Therefore contemporary documents are always of the utmost importance".

75. King LJ in **Re A (A Child) [2020] EWCA Civ 1230** referred to the need for a balanced approach to the significance of oral evidence. Having reviewed, among other cases, **R v Lucas** and **Gestmin** she said:

> 38. I do not seek in any way to undermine the importance of oral evidence in family cases, or the long-held view that judges at first instance have a significant advantage over the judges on appeal in having seen and heard the witnesses give evidence and be subjected to cross-examination (*Piglowska v Piglowski* [1999] WL 477307, [1999] 2 FLR 763 at 784). As Baker J said in in *Gloucestershire CC v RH and others* at [42], it is essential that the judge forms a view as to the credibility of each of the witnesses, to which end oral evidence will be of great importance in enabling the court to discover what occurred, and in assessing the reliability of the witness. …
> 41. The court must, however, be mindful of the fallibility of memory and the pressures of giving evidence. The relative significance of oral and contemporaneous evidence will vary from case to case. What is important, as was highlighted in *Kogan*, is that the court assesses all the evidence in a manner suited to the case before it and does not inappropriately elevate one kind of evidence over another.
> 42. In the present case, the mother was giving evidence about an incident which had lasted only a few seconds seven years before, in circumstances where her recollection was taking place in the aftermath of unimaginably traumatic events. Those features alone would highlight the need for this critical evidence to be assessed in its proper place, alongside contemporaneous

documentary evidence, and any evidence upon which undoubted, or probable, reliance could be placed."

76. The court should endeavour to identify on the simple balance of probabilities the person or persons responsible for the injuries in question where it is possible to do so. But the Court should not strain the evidence before it. Where the court is satisfied that the injuries were caused by one or more persons within a pool of possible perpetrators, but cannot identify the specific person or persons responsible, it is open to the court to proceed to the welfare stage on the basis that one or more of the pool of possible perpetrators caused the injuries in question: **Re S-B [2009] UKSC 17, Lancashire County Council v B [2000] UKHL 16, U and N (Minors); Re B (Minors) [2003] UKHL 18,** and **Re B (Uncertain Perpetrators [2019] EWCA Civ 575**. Although generally applied in cases of intentional perpetration of injury, in my view this proposition is equally applicable, where appropriate, to cases of unintentional perpetration of injuries or harm.

77. Finally, and in the light of M's refusal to complete her evidence, I refer to two recent authorities, **Re K (Threshold-Cocaine Ingestion-Failure to Give Evidence [2020] EWHC Fam 2020** and **Re T and J [2020] EWCA Civ 1344.**

78. In **Re K** Williams J said as follows:

"39. In *Re O (Care Proceedings: Evidence)* [2003] EWHC 2011 (Fam). Johnson J was very clear. He said, that 'As a general rule, and clearly every case will depend on its own particular facts, where a parent declines to answer questions or, as here, give evidence, the court ought usually to draw the inference that the allegations are true.' The power of the court to draw adverse inferences is found elsewhere, for instance in relation to failures to participate in or comply with other directions of the court designed to assist the court in determining a case justly; for instance a failure to participate in an expert assessment can also allow the court to draw inferences against an individual: see Re C (A Child) (Procedural Requirements of a Part 25 application) [2015] EWCA 539 at #34. However, as the closing submissions of the Mother and the Guardian argue (and indeed the general rule proposed by Johnson J is subject to 'particular facts') the statutory framework and the jurisprudence suggest a more nuanced approach which takes account of the circumstances of the refusal or failure to give evidence and the nature of the issue and the evidence which is given by other parties.

40. Although the general approach is that any fact which needs to be proved by the evidence of witnesses is generally to be proved by their oral evidence (r22.2(1)(a) FPR 2010) facts may also be proved by hearsay evidence. The effect of Children Act 1989 s.96(3), Children (Admissibility of Hearsay Evidence) Order 1993 is to make all evidence given in connection with the welfare of a child admissible notwithstanding its hearsay nature. This would commonly include Local Authority case records or social work chronologies which are very often hearsay, often second- or third-hand hearsay but also extends to witness statements. The court should give it the weight it considers appropriate: Re W (Fact Finding: Hearsay Evidence) [2014] 2 FLR 703 and where hearsay goes to a central issue the court may well require the maker of the hearsay statement to attend to give oral evidence.

41. The provisions of section 1 and 4 of the Civil Evidence Act 1995 also make provision for the court to admit and rely on hearsay evidence and set out a range of factors that the court should consider in assessing the weight to be given to and the reliability of hearsay evidence. These include matters such as the circumstances in which the statement was made and whether the circumstances suggest an attempt to prevent proper evaluation of its weight.

42. Cases from other fields such as *T C Coombs v IRC* [1991] 2 AC 283 and Wisniewski v. Central Manchester Health Authority [1998] PIQR P324 support a more nuanced approach. Brooke LJ said in the latter case.

From this line of authority, I derive the following principles in the context of the present case:

> (1) In certain circumstances a court may be entitled to draw adverse inferences from the absence or silence of a witness who might be expected to have material evidence to give on an issue in an action.
> (2) If a court is willing to draw such inferences they may go to strengthen the evidence adduced on that issue by the other party or to weaken the evidence, if any, adduced by the party who might reasonably have been expected to call the witness.
> (3) There must, however, have been some evidence, however weak, adduced by the former on the matter in question before the court is entitled to draw the desired inference: in other words, there must be a case to answer on that issue.
> (4) If the reason for the witness's absence or silence satisfies the court then no such adverse inference may be drawn. If, on the other hand, there is some credible explanation given, even if it is not wholly satisfactory, the potentially detrimental effect of his/her absence or silence may be reduced or nullified.
>
> 43. I consider that the approach outlined by Brooke LJ more fully reflects the proper approach. These are inquisitorial proceedings rather than adversarial, where the welfare of the children is at stake and where the authorities on fact-finding require the court to survey all the evidence and to avoid compartmentalisation. The legislative framework allows for the admission of hearsay evidence. The approach to lies in ***Lucas*** requires a more measured approach. At one end of the spectrum, there will no doubt be cases where the court is satisfied that a person has deliberately refused to come to court to support their written statement and where there is no excuse or explanation. In that scenario, the court might take a bright line approach and refuse to place any weight on any of their evidence and draw inferences against them that any allegations are true. In other cases, the court will need to consider the circumstances of their failure to give evidence, any explanations offered or which present themselves and the evidence itself and the issues it goes to. Where there is compelling evidence explaining an inability to attend full weight might be given and no inferences drawn. In between will be cases where the court might determine it is appropriate to rely on and give weight (even full weight) to some evidence but not to other evidence and to draw some but not necessarily all possible inferences.

79. In **Re T and J** the Court of Appeal held that where a witness does not give evidence the court has a very broad discretion as to whether to draw adverse inferences, which must be exercised in a very fact specific context.

The written medical and expert evidence

80. Shortly after death a radiological skeletal survey carried out by Dr Simon, and reported by Dr James, both consultant radiologists, identified no fractures.

81. Dr Lockyer, a consultant forensic pathologist, and Dr Marton, a consultant perinatal pathologist, carried out a post-mortem on Mark on 19 June 2019 which gave as the provisional cause of death "Unascertained pending investigation". Dr Lockyer in a preliminary report dated 23 June 2019 identified rib fractures into which he recommended further investigation.

82. Professor Al-Sarraj, a consultant neuropathologist, carried out a macroscopy of the brain on 11 July 2019. There was no evidence of subarachnoid haemorrhage, subdural haematoma or internal bleeding. "There is no clear evidence of traumatic brain injury that could have caused or contributed to death. There was some evidence of old ischaemic changes in the white matter, suggestive of one or more unrecognised episodes of prenatal hypoxic ischaemic injury to the central nervous system".

83. On 15 August 2019 a Micro-CT examination report by Dr Baier and Professor Williams identified the 8 anterior rib fractures and recommended further assessment of posterior rib irregularities.

84. Professor Mangham, a consultant histopathologist, in a report dated 30 April 2020 and addendum report dated 9 August 2020 identified, in addition to the 8 anterior fractures already found, 3 posterior fractures and the sternum cartilaginous fracture. Thus, the full range of fractures was by this stage identified.

85. Professor Mangham concluded that:

i) The posterior fractures would have been caused by compression to the rib cage in which there was at least an element of side-to-side compressive force. "Posterior rib fractures are strongly associated with non-accidental injury, but it is conceivable that a similar chest compression mechanism could be delivered by severe chest compression due to co-sleeping. It would seem that the latter is a distinct possibility given the statements made…" and, in answer to a written question "…. there is no evidence that posterior rib fractures are caused by CPR".

ii) "Both sets of fractures (i.e., perimortem and earlier fractures) could have been caused by overlaying due to co-sleeping", and, in answer to a written question, "The literature on co-sleeping being a cause of rib fractures is almost non-existent."

iii) The anterior fractures were caused by front to back compression of the rib cage. This could have been as a result of CPR chest compression, although anterior rib fractures due to CPR are uncommon.

iv) "In terms of force, CPR imparts a significant force to the rib cage and yet, in infants, does not cause rib fractures in the vast majority of cases (over 90% of cases). This gives an idea of the level of force that is required to cause rib fractures in infants".

v) A small fracture, compared to a larger fracture, "would still need to be delivered in the manner described and be of significant magnitude".

vi) "Both sets of fractures – the perimortem fractures and the earlier posterior 7th and 8th rib fractures [he must have been referring to the 8th and 9th rather than 7th and 8th]- could have been caused by overlay during co-sleeping. Alternatively, (1) the perimortem fractures could have been caused by CPR chest compressions, or (2) all of the fractures could have been caused by non-accidental injury on at least 2 separate occasions. The lack of haemorrhage in the anterior rib fractures is evidence against them being caused by non-accidental injury."

vii) "A minimum of 2 fracturing events occurred across both sets of fractures".

86. By a report dated 27 August 2020 Dr Herron, consultant neuropathologist, was asked to review the existing neuropathological reports and findings. He said there was no neuropathological evidence to demonstrate the cause of death. He said that asphyxiation by overlaying or other type of chest compression was a possibility but there was no neuropathological test capable of diagnosing or excluding this. Prematurity and low birth weights per se are significant risk factors for sudden death in infancy. "Whether or not he was in the Moses basket or co-sleeping, he would have been at increased risk of sudden death".

87. By reports dated 6 May 2020 and 11 September 2020 (by which time he had had sight of Professor Mangham's report), Dr Lockyer concluded:

i) No significant external injuries were identified.
ii) There was hypostatic staining (lividity) across the right side and anterior aspect of the body.
iii) There was no evidence of traumatic head or brain injury.
iv) The perimortem fractures "could be consistent with CPR… although the fractures could have been caused by overlay and this cannot be excluded".
v) The posterior rib fractures "may occur as a consequence of non-accidental injury….It is also possible these were caused by previous overlay scenarios…when considering the apparent lack of other injury to the child….I would suggest that overlay would explain such injuries but this does not entirely exclude intentional inflicted trauma".
vi) Toxicological samples for Mark showed an absence of drugs and alcohol which can therefore be excluded in causing death.
vii) There was no evidence of congenital abnormalities and/or anatomical natural disease to account for sudden death.
viii) It would not be appropriate to assign the cause to sudden unexpected death syndrome in infancy. It can be excluded in this case "since it is apparent [Mark] was found after co-sleeping with a parent and that the post-mortem examination did identify findings of an unnatural cause".
ix) "Overlay can cause asphyxia. There may be some obstruction of the upper airway or creation of a micro environment which becomes rich in carbon dioxide and poor in oxygen. Death caused by asphyxia is possible. There is no evidence to support this diagnosis but equally there is no evidence to exclude it".
x) "Overlay and the pathology of this scenario is not well described and literature on the subject is lacking at the current time".
xi) Sudden Infant Death Syndrome ("SIDS") can be excluded. "It is very difficult to provide a cause of death in this case. What can be concluded is that the post-mortem examination has not identified a natural anatomical cause for death such as infection or a lethal congenital structural abnormality (this includes the incidental finding within the brain). Toxicological analyses have excluded common drugs and alcohol in the cause of this infant's death…… It is not possible to provide probable causes of death in this case. It is not merely a task of favouring one cause over another. What can be determined is that there are several features in this case which would support the cause as 'unnatural' (such as rib fractures and co-sleeping)."

88. By report dated 31 October 2020, Professor Fleming, consultant paediatrician, concluded:

i) Mark had a relatively straightforward course in the neonatal unit with no major complications and no significant medical or developmental abnormalities.
ii) There is no medical evidence of a link between overlaying and rib fractures.
iii) At hospital Mark was found by Dr John and Dr Green to be cyanosed (blue in colour) through his upper chest and back, face and right shoulder while the rest of the body was pale. The final post-mortem report of Dr Lockyer placed the blue colouring on the right of the back and upper chest. This is lividity, the effects of blood settling in the body after death, which is suggestive that after death he was lying on his side and/or front, for a significant period of time before being moved into the face up position for resuscitation attempts.

iv) The anterior fractures are not common consequences of resuscitation but may have been caused by CPR. "In the absence of any other identifiable explanation for these injuries the most likely explanation in my opinion is that they were caused by attempted resuscitation".

v) The posterior fractures in the 8th and 9th rib were not caused by resuscitation because they occurred days before death. They were not identified on the skeletal survey x-rays or at the post-mortem examination. They were picked up by the Micro-CT scan and then identified. It is not possible to be certain about the significance of the posterior rib fractures as indicators of abusive injury. This is particularly so in the case of infants born prematurely.

vi) The rib fractures could have arisen from overlaying by co-sleeping. This is a theoretical possibility but there is no published scientific evidence to confirm or deny the suggestion.

vii) The likelihood is that Mark had been dead for some time (probably at least an hour) before resuscitation was attempted.

viii) The finding of persisting lividity over the upper chest is strongly suggestive that at the time of death, and probably for at least an hour after death, Mark was lying on his front or side.

ix) There are no physical or pathological findings that allow a definite diagnosis of asphyxia as a cause of death.

x) SIDS is not a diagnostic cause of death, but a label used to explain that no sufficient cause of death has been established. It means precisely the same as the label "unascertained" which is used by pathologists.

xi) Mark was at greater risk of unexpected death because of prematurity, parental smoking, parental drug use, and the relative deprivation of their living conditions. These are risk factors, not explanations of a direct causal relationship with death. The pathophysiology of unexplained infant deaths is complex and relatively poorly understood. Thus, it is not possible to state with any certainty whether the presence or absence of any specific risk factor did or did not have a direct influence on the risk of death for any individual infant, or to state what the most likely mechanism for any such effect might have been.

xii) The risk of unexpected death is much higher for an infant sleeping on his/her side or front than on the back.

xiii) If proven that Mark was sharing a bed with a parent, this would clearly identify a factor potentially contributing to his death, and overlaying is one possible mechanism by which such a risk may be manifest. It would not be appropriate to conclude that being in this sleep environment was the cause of his death, rather it being a potentially contributory factor to death.

xiv) Given the cramped conditions in the house, it was almost impossible for the parents to feed him other than on the bed and the parents should have been given advice about how to manage night feedings safely.

The oral evidence of the medical experts

Professor Fleming

89. Professor Fleming told me that the analysis of microfractures such as in the posterior ribs is in its infancy, unlike the established research into more visible fractures.

90. A Glasgow study of X-rays in ex-preterm infants revealed unknown, and inexplicable fractures (both anterior and posterior) in 2% of cases. It is impossible, he says, to say how they were caused although the fact that Mark was pre-term may have been a

contributory fracture. The most one can say is they were caused by the application of a degree of force (which could be consistent with normal handling) and he did not exclude the possibility of "overlay", although he said there is no evidence to that effect.

91. He was very uncomfortable with the word "overlay". Research suggests parents do not sleep across babies. Parents and babies find ways to wriggle their bodies out of "overlay", although if parents are under the influence of alcohol and/or drugs, their sensory responsiveness may be limited. He thought it unlikely that an overlay mechanism caused the perimortem fractures.

92. His view was the anterior fractures were most likely caused by the CPR administered by the paramedics; "it is hard to see any other cause". He thought the 7th posterior rib fracture was caused in the same way.

93. In his view there was insufficient evidence as to what caused the death of Mark which he firmly places in the category of SIDS or simply "unascertained", of which there are about 200 such deaths each year in this country. In simple terms, he says we just do not know how it occurred and there is no pathological explanation. Any medical explanation would be pure hypothesis.

94. SIDS is not a cause of death. It is a description of those category of cases where the cause of death is not known. A number of indicators are associated with SIDS, but he emphasised that these are features, and not explanations. They include birth prematurity (accounting for some 30% of SIDS), sleeping on the front (which increases the risk of death 10-fold) or side (a 2-fold increase), poorer socio-economic conditions (which has a 10-fold increased risk of death), bottle feeding rather than breast feeding, alcohol intake (normally more than 2 units), smoking tobacco and cannabis which can reduce parental responsiveness.

95. He emphasised that co-sleeping is not by itself a mechanism of death, but it can bring into play risk factors because of failure to protect. Mothers frequently fall asleep in bed with an infant. In this case, he felt that the parents had nowhere but their bed to feed the baby in their cramped room and were not given advice as to alternatives.

96. He explained that the lividity findings demonstrate that Mark was on his side or front for at least 1 hour after death. It is inconsistent with a baby being on its back in a Moses basket. He added that a baby of this age would not have been able to roll over spontaneously.

97. He referred to the white matter in the cranial area which showed up on ultrasounds suggesting some element of pre-birth brain damage which is also associated with SIDS. It increases the risk of "something going wrong".

98. He considered that the visit to the parent's home on the morning of Mark's death was not in accordance with established procedure requiring the parents to be there so that they could have visual prompts to help explain the events of the night before.

99. He expressed the view that obstruction of the airway during the night was a theoretically possible cause of death, but unlikely as babies wriggle so as to find a

way of being able to breathe. A more plausible explanation based on the research is overheating. Babies lose 80% of heat, and absorb 40% of heat, through the head. If a baby overheats, blood pressure drops, and cardio-vascular failure can follow. Either possible cause (asphyxia or overheating) would be more likely if the parents were under the influence of drugs or alcohol, but he emphasised that in his view there was no evidence to back up either theory which would be little more than hypothesis.

Professor Mangham

100. Professor Mangham told me that the anterior rib fractures would have been caused by front to back chest compression whereas the posterior fractures would have included an element of side-to-side force.

101. Mark, although premature at birth, did not have a fragile skeleton. There was no underlying abnormality or disease affecting the skeleton. He considered that the fact of prematurity by itself does not make a bone structure more fragile; more important is whether a condition associated with prematurity, such as osteopenia, is present. In this case, there was no such condition. He thought that if there was some wholly unexplained reason for fractures to take place, that would have manifested itself in multiple fractures from birth onwards rather than the two episodes in this case at or shortly before the time of death.

102. He considered that the anterior fractures could have been caused by CPR, although that is uncommon according to the published evidence (he referred to research that during CPR, anterior fractures occurred in about 8.5% of cases), or by the application of some other compressive force such as an adult lying on the baby.

103. He was confident in his view that the posterior 7th rib fracture (involving an element of side-to-side force) would not have been caused by CPR which is a front to back application of force. The study to which he referred specifically addressed posterior rib fractures during CPR, and there was no evidence of any such fractures having occurred. Anterior fractures are uncommon but posterior fractures non-existent. He said that "we now keep an eye out for posterior rib fractures" in CPR but there is no evidence of it.

104. The posterior 7th fracture and the anterior fractures all occurred approximately at the time of death or afterwards and could have been caused in two separate ways e.g the anterior fractures by CPR and the posterior 7th fracture by some other means.

105. The 8th and 9th posterior rib fractures of course could not have been caused by CPR. He agreed that the suggestion of overlay (between two adults, or an adult and a surface) does not have any published medical literature to support it, but pointed out that in criminal and family courts overlay has been found to be causative of fractures (although he did not mention it, one such case in which he gave evidence is **Re ABC (Overlaying Child) [2020] EWFC 57)**. He said the presence of alcohol or drugs increases the risk of overlay.

106. He did not care for the term "microfractures" which he felt wrongly implied a different type of fracture whereas, he told me, a fracture is a fracture; the difference in size depends on the nature, direction and degree of force applied. He told me that the rib fractures were, in ascending size order:

i) The posterior 7th rib
ii) The posterior 8th and 9th rib
iii) The 3rd anterior right rib
iv) The 4th and 5th anterior right ribs and the anterior 6th left rib
v) The anterior 2nd to 5th left ribs

107. Where Professor Fleming referred to guarding against hypothesis in the absence of evidence, Professor Mangham said pithily that "the fact we don't know everything does not mean we know nothing".

108. I asked Professor Mangham to consider further the Glasgow paper referred to by Professor Fleming and send in his comments on it. He pointed out that in the study of 1,446 pre-term infants, 26 (1.8%) were identified as having rib fractures during what might be termed routine X-rays, and 47% of those fractures were posterior. Of the 26 infants all but three had underlying medical problems known to affect the skeleton, the remaining 3 being attributed to NAI, the point being that the study "does not describe any rib fractures in premature infants who had a benign clinical course". He concludes that the paper "provides no evidence that rib fractures do occur in infants where prematurity is the only risk factor (as is the case for Mark)" and that "rib fractures do not occur (or at least are not radiologically detectable) in cases of uncomplicated prematurity (as in Mark's case)". He referred to another study where low birth weight was the modelling, and only 0.3% of the cohort of infants with body weights lower than Mark's at birth, were found to have rib fractures. Professor Fleming in turn replied that the Glasgow study dealt only with fractures identified on chest X-rays, whereas here the small fractures were not visible on X-ray. Accordingly, he said, the study does not directly assist in cases of microfractures.

Dr Lockyer

109. Dr Lockyer confirmed that the lividity was present on the front chest and right side, indicating that the body was face down tilting slightly downwards to the right for a period measured in hours after death. This was corroborated by some blanching on the front of the body indicative of coming into contact with a surface, whereas there was no area of blanching on the back.

110. Dr Lockyer was asked about the findings of the on-call paediatricians, Dr Green and Dr John, both of whom gave oral evidence. Dr Green observed lividity on the back but readily accepted that she is a not a pathologist and deferred to Dr Lockyer's finding. Dr John observed lividity on the chest and back which was closer to Dr Lockyer's findings. The undoubted expert in this area is Dr Lockyer. He thought the different observations of Dr Green and Dr John were probably a result of (i) their lesser expertise, and (ii) the hypostasis may not by then have been as pronounced as it was when he became involved. I unhesitatingly accept Dr Lockyer's evidence on the presence of lividity and its location, together with the blanching presentation which clearly supports his lividity findings.

111. All the fractures were caused by some degree of force and not spontaneously. There were no indicators of Non-Accidental Injury, such as haemorrhaging or external bruising, and, in the case of the posterior fractures, NAI would more commonly be associated with macro visible fractures whereas these were much smaller and not visible to the naked eye.

112. In the absence of an alternative explanation, the anterior fractures were probably caused by the CPR, although he could not completely rule out deliberately inflicted injury.

113. He could not rule out that the 7th posterior rib was caused by CPR although he considered that "possible but extremely rare". He thought it significant that the posterior 7th rib fracture was of the same type as the earlier 8th and 9th fractures which he felt pointed away from CPR as a cause. He could not rule out Non-Accidental Injury but would have expected a larger fracture and/or other features associated with NAI. On balance he thought the most likely explanation was some form of co-sleeping event, particularly if Mark was lying on his front.

114. The abnormal white matter was probably not directly significant. After birth there were no seizures or other events indicating brain malfunctions, and he thought that the brain had adapted. He considered it possible that if Mark had been placed under stress on the night of his death, the white matter abnormality may have triggered something which contributed to death.

115. He was keen to stress that there is very little research on microfractures, and they should not be over interpreted. Other evidence should be looked at for context.

Dr Herron

116. Dr Herron confirmed that there was no head trauma to Mark or any infection. He offered no opinion from a neuro-pathological point of view as to the cause of the fractures or death. He commented that SIDS risk factors do not equate to causation.

117. He mentioned in particular the damage to the white matter which he described as "significant", placing more emphasis on this than other experts. He said that if Mark had been lying in bed with his parents, and other factors came into play such as respiratory or cardiovascular issues, in those circumstances the brain damage could have been a contributory factor to death, causing a very rapid deterioration.

118. He urged the court to be careful with generalisations from research which is difficult to apply to a particular child in particular circumstances.

Other medical/nursing/social worker/police evidence

119. I do not propose to rehearse the evidence given to me by numerous witnesses under this category. It is not necessary to do so. I have incorporated it where relevant into this judgment. For the avoidance of doubt I have taken it all fully into account.

The parents' evidence

120. The parents were notably hostile to each other in the witness box (in M's case, even in the short time she gave oral evidence), angrily accusing the other of lying. Their relationship is complex. They have been together for a number of years and although they regularly separate, they are drawn back to resume their relationship. It is not a consistent or stable partnership. It is clearly volatile, but they appeared to me to be more dependent on each other than they would care to admit.

121. As I have already mentioned above, when summarising their Children Act statements, the parents' evidence as to the events of 12/13 June was contradictory in many respects, such as:

i) How much alcohol they consumed.
ii) Whether Mark was fed downstairs by M before bed.
iii) Whether Mark had a bath before bed.
iv) When exactly Mark was finally put in his Moses Basket.

122. The parents' accounts are also at odds with (i) the contents of their police interviews and (ii) what was said to Jack and Rachel on the fateful morning of 13 June, as summarised below.

123. These and other discrepancies could not fully be explored because of M's refusal to complete her oral evidence.

124. Notably, in closing submissions M largely sought to cast any blame on F, and F sought to expose what was described as M's "jumbled" (i.e contradictory) evidence. They did not present a unified and coherent narrative of events.

The Father's evidence

125. F gave his evidence to me remotely in accordance with the Communicourt recommendations including breaks, clear questions and the ability to refer to a timelines document. He was composed and gave clear answers, and really only showed flashes of emotion when expressing tangible bitterness towards M and her family. At one level he was seemingly plausible, giving detailed answers expressed in very definite terms. But as he was probed in questioning, it became apparent that there were inconsistencies in his evidence which undermined his presentation. I acknowledge that (i) evidence given to me orally now is over a year and a half since Mark's death and may be affected by the passage of time and (ii) statements made to professionals and in police interviews in the immediate aftermath of Mark's death were given at a time of great distress, but these allowances do not explain the significant discrepancies.

126. In particular, the events of the night of 12/13 June were narrated to me in oral evidence differently from the accounts given in his police interview on 13 June 2019 and in his written Children Act statement. To pick out some of the most prominent aspects:

i) F told me orally in firm terms that he fed Mark after he and M went upstairs to bed, and did not feed him before going up. He added that he didn't know if M had fed him downstairs. Yet in his first Children Act statement he said that M fed Mark while he put John to bed, after which he went downstairs to continue feeding Mark.

ii) F told me that when they all went to bed, Mark was not put in his Moses basket. Instead, F fed Mark with an ounce of milk from the bottle while sitting on the bed with his back to the wall, he thought at about 11.30pm, at which point he dozed off with Mark in their bed. That is inconsistent with his first Children Act statement which related Mark being put in his Moses basket, and

F waking during the night to feed him for the first time. It is also inconsistent with his police interview in which he said that when they went up to bed, Mark was placed in his Moses basket by M for a couple of hours before he woke for his next feed.

iii) He told me that during the night M woke him up and told him to put Mark in the Moses basket, which he did after giving Mark another ounce of milk. He could not say precisely when this second feed occurred. Yet in his police interview he first refers to waking up because he sensed Mark was awake wanting a feed, then in the same interview refers to a later time when M woke him. F told me that this narrative given to the police was wrong.

127. He has on other occasions shown himself capable of concealment. Immediately after Mark's death he denied to DI Miles and Dr Green at hospital having drunk alcohol or taken drugs in the previous 48 hours. This was in similar vein to denying drugs use to the Local Authority before Mark's death and not informing the LA (he said on M's instructions) about the presence of others (Rachel and Jack) in the household.

128. He agreed that the cannabis box was in the bedroom overnight, and there was a strong smell of cannabis, but was unable to explain how it got there. Having heard the evidence, it seems to me most likely that either he or M brought it up to their room after they had smoked the spliff outside.

129. F told me that he has smoked cannabis since the age of about 14 or 15. In June 2019 he was smoking spliffs 3-4 times a day, usually in the afternoon/evening after returning from work, although he denied, unpersuasively in my judgment, having smoked more than one spliff on 12 June 2019. He said the spliffs help him relax and get to sleep. Generally, M would share the spliffs with him. He thought he was spending £10-£15 per day on cannabis.

130. He told me he could not have been responsible for the earlier posterior fractures as he had separated from M over a week before Mark's death, returning to the house 3 days before i.e on Sunday 9 June 2019. This appeared in his written evidence for the first time in a statement dated 19 January 2021 (albeit the statement refers to 2 days prior to Mark's death rather than 3 days), the first day of the trial. I do not accept this evidence.

131. He said he had one pint, not two at the social club. He denied M's evidence that he had more than two pints, or that he was tipsy. I am inclined to accept this evidence which was corroborated by Rose's (Maternal grandmother) very clear account to me. He agreed with counsel that drinking even one pint, and smoking cannabis that evening, would have made him sleepy.

132. F confirmed that the bedroom could get uncomfortably hot sometimes and that neither he nor M had at that time worked out how to adjust the temperature.

133. He accepted that he had received lots of information about the dangers of co-sleeping and had been told of the matters referred to by the social workers, including the need to feed an infant at night by sitting on the side of a bed rather than in the bed. He said that he had only once fallen asleep in bed with Mark, during the afternoon, and only

once with John. He denied Rose's account of a co-sleeping episode at night on 28 May, but I am quite sure that it did indeed happen as Rose said; she was consistent and persuasive in her evidence on this episode.

134. He told me that Mark was never placed on his front and could not give an explanation for the lividity evidence.

135. He told me that during the night M slept under the duvet.

136. He accepted that in the morning he said "I'm sorry, it's my fault" which he explained as referring to his inability to do anything more to keep Mark alive. That did not strike me as plausible; far more likely is that he realised he had brought Mark into the bed and exposed him to considerable risk.

137. Overall, I have reached the clear conclusion that he has concealed the truth about that fateful night, and other matters, and has presented the court with an account which is false in material respects.

Mother's evidence

138. I only heard from M for a limited time (about 45 minutes in all) before she stopped giving evidence. She answered questions in chief from her counsel, and some questions in cross examination from the LA's counsel. The abrupt end to her evidence was most unfortunate.

139. I am sure that she found the process of reliving the events of 12 and 13 June difficult. This hearing must have been harrowing. I accept also that she has been under enormous scrutiny from many quarters since then. Her three children have been removed from her care. The pressures on this young woman have been intense. Nevertheless, she understood that her evidence was important to the process of establishing what happened to Mark, and I would have expected her to want to assist. She had plenty of time to prepare for the trial. During the hearing she had the assistance of her immensely conscientious and experienced legal team. Various measures were suggested to assist her in giving evidence. She was given considerable latitude by me as to how, where and when to give evidence. Her outbursts were prompted by questions pointing out contradictions in her evidence (e.g. about how much drink was consumed at the club) and the inference that she was not telling the truth. The questioning was entirely appropriate, and I felt that her reaction was somewhat petulant. I am satisfied that she was well able to give evidence (she had no functional or capacity issue) but refused to do so. In my judgment, her refusal was caused by a mixture of (i) the distress of reliving the events of 12/13 June 2019 and (ii) not wanting to answer questions which might expose inconsistency.

140. It seems to me that the concept of adverse inference may be less apposite where, as here, there is no suggestion that she deliberately inflicted injury. I have concluded that I will not draw adverse inferences against her in the sense of using her failure to give evidence as being directly probative of a particular fact. I prefer instead to approach her written evidence with caution, weigh it against the other evidence and draw the appropriate conclusions.

141. Even in the short time I observed her, some of her answers appeared unsatisfactory to me. She could not explain why her Children Act statement referred to Mark kicking her in the back during the night, but her first police interview did not make any mention of this, although her second interview did. Upon being asked why her police interview referred to F drinking only one pint, as opposed to her evidence that he had two and finished her drink, she could only say that she did not want to get him into trouble which I found unconvincing; why was "two and a bit pints" rather than one likely to "cause trouble"? She said that she had told the LA about her mother living with them, which was flatly contradicted by all the social work evidence. She denied telling Rachel and Jack to leave the house when social services attended, evidence which I thought was less than credible.

142. Other discrepancies on the papers were not put to M because of her refusal to complete her evidence; they included (i) internal discrepancies as between her witness statement and police interviews and (ii) discrepancies as between her evidence and that of other witnesses. They were listed in the LA's closing written submissions and I agree that they raise a prima facie case of inconsistent presentation about the events during the night. Two particular matters stand out.

143. First, differing accounts in police interviews of M waking up during the night:

i) As noted above, in her first interview she spoke of waking at about 1.30am when F was putting Mark in his Moses basket, making no mention of being woken by feeling Mark's foot in her back. In the same first interview she mentioned getting up to go to the toilet 20 minutes later and seeing Mark in bed, breathing.
ii) In her second interview she referred to feeling Mark's foot at 2am-3am, waking F and shouting at him to put Mark in his Moses basket.

144. Second, according to Rachel, M told her that:

i) She woke up with Mark in bed, unresponsive, contrary to M's case that she woke up and saw F holding Mark in his arms.
ii) That F had put him in the bed, contrary to M's case that he had put Mark in the Moses basket.

145. Weighing up her evidence, written and oral, in the context of all the other evidence in the case, I am satisfied that, like F, she has sought to conceal the truth about the events of the 12/13 June 2019.

Other family members' evidence

146. The grandmother's former partner, Wayne, related in a statement to the police dated 18 August 2019, which was not challenged in his oral evidence**,** that M told him F had fed Mark at 1.30am and then "put him into their bed". In a further statement to the police dated 24 November 2019 Wayne checked his phone which contained a text message from Rachel at 06.10 on 13 June 2019 that "[F] put him in bed with him and now he's gone". Wayne commented on the parents' drug use; "[F] was always stoned when I saw him", M smoked less weed but at times was stoned, high and talking gibberish.

147. The maternal grandmother, Rose, told the police that both M and F smoked cannabis every day (M once a day, F much more). She told me that she stayed with M and F for about 1 week after Mark's birth, between approximately 29 May 2019 and 5 June 2019. On one occasion during that period, she heard Mark crying at about 4am, took a feed up to the bedroom and saw Mark in the parents' bed, lying in the crease of F's arm, an event which, I am satisfied, she told M about the next day**.** On the evening of 12 June 2019 at the social club she was adamant that M had no more than half a drink, and F only 1 drink.

148. Jack told me that on the morning of 13 June 2019 he had heard (he thought possibly from Rachel) that when M woke up, Mark was in the middle between them, and that F had "put him" in the bed. He heard M shout at F "Why did you put him in the bed?" He thought F had been at the house for about a week before Mark's death. He told me that in the days and weeks before Mark's death, M and F told him and Rachel to leave whenever social workers came round because otherwise it might "jeopardise" the children.

149. Rachel told me that she had very little recollection. However, under cross examination it appeared to me that her memory was jogged a little when she was referred to the police interview she gave. She re-read the interview, said it seemed fine, and that she had tried to tell the police the truth. In summary, the interview records:

i) She described F as "tipsy" on the evening of 12 June when he returned from the club.
ii) She described on more than one occasion how M told her she had woken up in the morning with Mark in bed, where F had put him. She was clear that (as the interview reads) M had been referring to the time when she discovered Mark was unresponsive and not an earlier time in the night: "And that's when at 6 o'clock this morning she woke like, she woke with him in bed and he weren't breathing or nothing and she didn't even know he was in bed with her".
iii) M told her that F admitted it was his fault, and that he had put Mark in bed.

Conclusions

150. In reaching my conclusions I have considered the totality of the evidence in the round.

151. I am quite satisfied that at no time have the parents intentionally sought to harm any of their children. The LA has, rightly in my view, not sought such a finding. The medical evidence, although not completely ruling out some sort of deliberately inflicted trauma, in my judgment points overwhelmingly towards unintentional events. None of the features commonly associated with deliberate causation of fractures is present in this case, such as haemorrhaging or bruising. There is nothing to suggest that the parents ever physically injured any of their children or had a propensity for aggressive behaviour towards them. I have noted that, after some initial concerns, there was much that was positive about the parents' care of Mark as described to me by social workers, family partnership nurses and the manager of the neonatal ward.

152. That said, they did not give the LA the full picture, concealing their drug use, family members living at their home and, as I am quite satisfied, co-sleeping with Mark. The

motivation was probably a fear of what steps might be taken by the LA; the effect was to conceal serious aspects of parental care from safeguarding agencies, and thereby place the children at risk.

153. I have been careful not to over interpret the medical evidence which is just one part of the overall picture. The experts agree on a great deal. The particular area which has caused difficulty is the three posterior fractures. These did not show on the early imaging because they were too small to be seen by the naked eye on conventional radiographing. They were identified as a result of the Micro-CT scan. Such small fractures have only become more readily apparent in the past 5 or so years. All experts agree that there is limited research and published literature on fractures as small as these. That said, I generally preferred the approach of Professor Mangham who concentrated more on what is known or can be reasonably inferred, based on decades of experience in his field of expertise as a forensic histopathologist, rather than the approach of Professor Fleming who was more inclined to concentrate on what is unknown.

154. All the experts, perfectly properly, were inclined to concentrate on causation in the anatomical and pathological senses. Thus, for the fractures the focus was on the biomechanics of the degree and direction of force, and for Mark's death it was on the possible physical causes of death. Understandably, they were less inclined to comment on what acts or omissions, if any, by the parents (or any other person) might have set in train the pathological outcome.

155. I have the advantage over the experts that I have seen and heard all the evidence. The expert evidence is one part, albeit an important one, in an overall picture.

156. Looking at the whole of the evidence, in my view the following stand out as particular features bearing on my findings:

i) Unascertained events occurred on at least two occasions, namely the death of Mark (together with one posterior and 8 anterior rib fractures) on 13 June 2019, and the left 8th and 9th posterior rib fractures a few days earlier. Each of these were, all experts agreed, highly unusual events if they occurred innocently and without obvious natural explanation. For one of these unascertained events to have occurred is improbable. For at least two unascertained, and improbable, events to have occurred separately within a short space of time is in my judgment a very remote possibility.

ii) The likelihood is that the anterior fractures were caused by CPR.

iii) The left posterior 7th rib fracture, perimortem in nature, is in my judgment unlikely to have been caused by CPR and therefore has a different cause.

iv) The left posterior 7th rib fracture is almost identical to the left posterior 8th and 9th fractures which occurred on a different day or days. In my view, it is likely that the cause was similar, but the timing was different.

v) The parents' accounts of the events of the 12/13th June are false and riddled with inconsistencies and contradictions.

vi) The accounts of Wayne, Jack and Rachel of what they were told on the morning of Mark's death, bely the parental narrative. In particular, M said that F had put Mark in bed, and they both woke with Mark in their bed, unresponsive.

vii) F's words that morning "it's all my fault" is a clear acknowledgment of wrongdoing.

viii) The evidence about lividity (and in this regard I accept what Dr Lockyer told me) demonstrates that at about the time of death Mark was lying partly on his front and partly on his side, tilted to the right, and not on his back.

ix) The evidence of Professor Fleming that Mark, at his age, would not have been able to roll over from his back to his front spontaneously. The parents' case that during the night he was placed on his back in the Moses basket where he remained until he was found unresponsive, still on his back, is therefore wholly inconsistent with the lividity evidence that Mark was on his front.

x) The parental use of alcohol and, in particular, cannabis reduced their capacity to respond properly to Mark's needs that night. The toxicology report for both parents indicated the results "could support prior heavy use of cannabis, assuming no cannabis use occurred after the emergency services were contacted" and both parents "could have been experiencing effects of cannabis around the time of the incident". In my judgment they are both likely to have consumed more than one spliff.

xi) The clear evidence, as I find, that the parents co-slept with Mark on occasions between 21 May and 13 June 2019, including on the night of his death. The account of Rose, which I accept, that she saw Mark in bed with the parents during the night prior to the events of 12/13 June 2019 contradicts F's evidence and supports a conclusion that the parents on more than one occasion co-slept with Mark.

xii) The presence of white matter indicating pre-existing birth injury which may have contributed to death if other trigger events were present.

xiii) The overheated and cannabis suffused atmosphere in the bedroom on the night of his death.

157. I turn now to consider these specific matters in greater detail and my conclusions on the findings sought.

Co-sleeping

158. The primary, non-medical, factual issue is the extent to which Mark co-slept with his parents, in particular on the night of his death, and the circumstances thereof, including whether there was any overlay. I acknowledge Professor Fleming's reservations about the term overlay in a medical context, but it has been widely used by other experts in this case, and in this judgment, I use the word in a lay person's sense to mean a process by which an adult, while sleeping, lies across or over the infant with whom he/she shares the bed.

159. I find that the parents co-slept with John at times, and, because John came to no harm, probably minimised the potential risks of co-sleeping with Mark. I am confident that the parents co-slept on occasions with Mark between 21 May and 13 June including on the night of his death. It is impossible to say precisely how often, but more than once or twice. The likelihood is that on occasions, when Mark woke up, he was brought into their bed and kept there for much of the night. It is probable that this occurred principally when one or both parents were under the influence of cannabis, which they habitually smoked at night, and were less able or willing to ensure that Mark did not sleep in their bed. The evidence in support of these conclusions

comprises (i) their failure to tell me the truth about the events of 12/13 June 2019 and (ii) the following facts, as I find them to be:

Co-sleeping with John

i) On 9 April 2018 M showed the Family Nurse a photograph of F asleep on the bed with John.

ii) On 26 June 2018 F told the Family Nurse that the night before he had removed John from M's bed where they (M and John) were asleep together.

iii) M told the police in interview that F had co-slept with John when he was younger.

Co-sleeping with Mark Prior to 12/13 June 2019

iv) Mark was seen co-sleeping with the parents by Rose, the maternal grandmother. She gave very clear evidence that she heard Mark crying at about 4am, went up with a bottle and saw him sleeping in the bed of M and F, lying in F's left arm. Despite a suggestion that she was mistaking this for the photograph referred to below, I accept what she said. I also accept that she told M, to whom she is close, about this the following morning.

v) There is a photograph on M's mobile telephone showing F co-sleeping with Mark during or after feeding on 28 May 2019. Although this was during the day rather than at night, it demonstrates the propensity to sharing a bed with Mark.

Co-sleeping with Mark on the night of the death

vi) Rachel told Wayne, including by text message, that on the night of the death, F put Mark in the bed.

vii) According to Rachel, M related to her that F put Mark in the bed and when she woke at about 6am, Mark was in bed with them.

viii) The parental case that Mark was on his back in the Moses basket when found lifeless in the morning is contradicted by the clear lividity evidence that Mark must have been on his front or side. There is no reason to think that either of the parents placed Mark on his front or side in the Moses basket, and the medical evidence is that had he been placed on his back he would not have been able to roll over on to his front or side. It follows that I do not accept the parents' evidence on this and conclude that the lividity evidence points clearly in the direction of co-sleeping.

160. On the night of 12/13 June 2019 both parents were under the influence of cannabis having smoked a spliff outside just before going upstairs. Given that in evidence, F told me he smoked cannabis 3-4 times a day at this time, usually in the evening and usually sharing spliffs with M, it seems probable to me that this was not the only time F and M had used drugs that day. Although the Guardian suggested that the presence of the open cannabis box on the windowsill may indicate that they were smoking drugs in their room that night, this was not a finding pressed strongly on me by the LA and I decline to go this far. It is suspicious, but suspicion alone is insufficient. More concretely, the toxicology report refers to "heavy" cannabis use by both parents which in my judgment accurately describes both parents' usage that day. F had in addition consumed one pint of alcohol, an amount which combined with the cannabis is likely to have reduced further his sensory responsiveness; he acknowledged that

even only one pint, combined with a spliff, made him drowsy. The bedroom was hot; I accept that the thermostat was set at 27.5 degrees and the parents had the heating on all night. It was airless (the window was shut), and it was suffused with a strong cannabis smell from the cannabis box on the windowsill. Even if the door was open, the atmosphere must have been oppressive.

161. Piecing together the precise events from the time the parents and Mark went to bed is not easy because of the various inconsistencies, not helped by the absence of the bulk of M's evidence. It seems likely to me that Mark was fed and then placed in his Moses basket in the bedroom at about 11pm; I was not persuaded by F's account that Mark was not placed in his Moses basket and instead was fed by F in the bed. At some point, probably in the next 2 hours or so (I was told that he generally required a feed every 2 hours), Mark awoke and was brought into the bed by F who then fell asleep having fed him. I consider it likely that M woke up and found Mark in bed with them. I do not accept, as M says, that she was woken by Mark kicking her. She did not give oral evidence on this point and her written/interview evidence conflicts; I see no reason why I should simply accept this at face value. Having woken, she did not herself put Mark back in his Moses basket. She may well have told F to put Mark back in the Moses basket, but she did not ensure that he did so. On the contrary, it is clear that Mark was not put back. Both parents were drowsy and unconcerned by the consequences. Mark remained in the bed for the rest of the night, unable to move. The lividity presentation strongly suggests that at the time of death, and probably for at least an hour after death, Mark was lying on his front or side. It is likely that this was his position before death as well, probably for a lengthy period of time.

162. Accordingly, for several hours during the night, Mark was in the bed, on his front, and, for some or all of that time, unintentionally overlaid by one or both of the parents until about 5.30am. On the medical evidence, he is likely to have died during that time. I cannot say for sure how much of his body was covered but it seems likely to me that it was the upper part of his body and over or across his head. Contrary to the parents' case, he was not in his Moses Basket, nor was he lying on his back.

163. I do not consider that I can make a finding as to which parent overlaid him. It could have been either or both of them. To make a specific finding in the absence of evidence would be to strain too far to establish the events of that night.

164. I do not accept that F got up in the early hours and discovered Mark not breathing in the Moses basket. Nor do I accept that when M woke, F was standing up, holding Mark. I conclude that the parents awoke with Mark in bed beside them, not breathing. That was relayed to Rachel and Jack, and in my judgment reflects what happened. The accounts given by M and F to hospital professionals, to the police and to this court have concealed the truth, namely that Mark died while in bed with them, as they discovered in the early hours on 13 June 2019. Their false narratives are borne out of a mixture of shame and fear of the consequences. I repeat that none of this happened intentionally or maliciously, but the parents have not told the truth.

165. I am satisfied that each parent was willing to co-sleep with Mark, and before him John, and both knew of and tolerated the other doing so**.** They clearly knew of the risks, particularly as Mark was a premature baby. In M's case, she allowed F to do most of the night-time feeds, taking no steps to ensure that Mark was protected from

co-sleeping even though her mother had told her about just such an episode a few days before. It is clear from the evidence that they did so despite clear professional and other advice to the contrary given on a number of occasions:

i) They had been given sleep safe advice by Wendy Johnson, including in respect of night feeding, to the parents on 5 March 2018, a few weeks after John's birth.

ii) The neonatal unit ward manager, Jane Smith, gave evidence which I accept, that in accordance with the ward's invariable practice, one of the nurses would have spent about half an hour explaining the risks of co-sleeping and the need to avoid it. Ms Aucutt stressed that the advice is given in blunt terms.

iii) The parents were given a discharge information pack by one of the nurses, Ms Alex Jones, containing leaflets and information about safe sleeping.

iv) At the discharge meeting, the advice was reinforced to the parents by the professionals present. They were "strongly advised regarding hygiene and safe sleeping in terms of the baby must not at any time sleep in bed with the parents. As Mark was premature 10+ and had been in a sterile environment for the past 4 weeks the importance of safe sleeping and keeping him and his environment clean and healthy was reinforced by all professionals". The advice included that the baby should be laid on his back, not overheated and there should be no bed sharing; "…under no terms whatsoever were they to sleep with the baby in the bed with them, not even to feed him".

v) On 23 May 2019 the sleep safe advice was reiterated by Wendy Brown of the Family Nurse Partnership. She told me that, although her written evidence does not set out exactly what was discussed, she was confident it included what to do at night when feeding, the importance of not falling asleep in bed and options such as feeding while sitting on the edge of a bed or on a chair. I accept her evidence and although M's counsel asked questions of her, neither she nor F's counsel directly challenged Ms Murphy or put it to her that the parents had not been party to discussions about night feeding. Professor Fleming's proper concern on this point accordingly melts away as he did not hear the evidence which I heard that the parents were given strategies to avoid co-sleeping during the night feed.

vi) M's mother had spoken to M about the dangers of co-sleeping, including after the incident when she saw Mark in the parents' bed in the middle of the night.

vii) The advice given by professionals included warnings about overheating the baby.

viii) The parents ignored the advice on a number of occasions, partly because, I suspect, they did not believe anything untoward was likely to happen to Mark (perhaps because their co-sleeping with John was trouble free) and partly because they were frequently under the influence of drugs. They became complacent and neglectful.

The fractures

166. All experts agree that the fractures were caused by a degree of force. There was no inherent bone vulnerability or anatomical explanation for their occurrence. I am conscious that the analysis of micro-fractures is still relatively new, but having weighed up all the evidence I am confident that I can reach conclusions as to how, on the balance of probabilities, the various fractures occurred.

Anterior fractures

167. The most likely explanation for the anterior sternum and rib fractures is the CPR carried out at the house and in the ambulance. Both parents, Rachel and the paramedics administered CPR. Although rib fractures are an uncommon consequence of CPR (8.5% in the study to which I was referred), and no expert was able to rule out entirely that the anterior fractures were caused by overlay, or by intentionally inflicted trauma, the balance of the medical evidence is to the effect that CPR was the most likely cause of the anterior fractures, or at the very least a plausible explanation. Professor Fleming was definite; he felt it was hard to suggest any other cause. Professor Mangham put it no higher than to say "the anterior fractures could have been caused by CPR", and Dr Lockyer considered that "it's more likely that these were caused by resuscitation". On balance, I am satisfied that the anterior fractures were caused in this way and the finding sought by the LA is not made out.

Posterior fractures

168. The small corner fracture to the posterior 7th left rib, also perimortem, falls into a different category. A degree of force was necessary to cause it. Professor Mangham was clear that it probably took place at about the time of death, or afterwards and could have been a separate episode from the anterior fractures. His evidence is that CPR can be causative of anterior fractures, although not commonly so, but there is no evidence of it causing posterior fractures. Posterior fractures are generated by at least an element of side-to-side force rather than exclusively chest to back force which is the CPR process. There is no evidence that the sort of left/right force required to produce a posterior fracture occurred during CPR in Mark's case. In the study where 8.5% of CPR cases led to anterior fractures, the possibility of posterior fractures during CPR was expressly considered and researched, but not a single such fracture was found, although again the study related to visible fractures rather than the small fractures found in this case. Professor Mangham, in my view perfectly soundly, did not accept that the lack of research into micro-fractures means anything is possible, which was part of Professor Fleming's note of caution. I preferred the emphasis by Professor Mangham on decades of experience about the causation of bony injuries to the emphasis by Professor Fleming on that which is not known. Dr Lockyer thought that there was some evidence of posterior fractures occurring during CPR (although he did not identify any research) but viewed it as an unlikely cause. Further, the type of fracture is identical to those in the posterior 8th and 9th left ribs which occurred some days before and were not the result of CPR. Dr Lockyer felt this was a significant feature of the case and I agree. It is more likely that these almost identical fractures had the same cause. In assessing this particular event, I have also had regard to my finding that Mark was on his front, probably tilted slightly to the right in accordance with the lividity evidence, which means that any overlay will have been across his left posterior ribs. It is far more likely that this fracture was caused during the night by compressive force accidentally perpetrated by one or other of the parents lying on Mark's back/left side. And, of course, I have already concluded that Mark was in bed with the parents on the night of his death and was overlaid by one or both. The overlaying which I describe is in my view the probable cause of this very small fracture.

169. The left 8th and 9th posterior fractures occurred a matter of days before Mark's death, on one or two occasions. They too were caused by some form of compressive force. There is no evidence of underlying propensity to fracture, nor any identified natural

anatomical explanation for the fractures, nor any relevant physiological abnormality. CPR as a cause is not a possibility. The fact of prematurity does not of itself offer an explanation absent some related condition; the Glasgow study does not support that thesis, and at best the presence of microfractures rather than visible fractures brings the prematurity feature into the category of inadequate research-based knowledge. I also tend to agree with Professor Mangham that had there been some underlying unknown, but innocent, explanation for Mark's posterior rib fractures, there would likely have been evidence of further such fractures dating back in time, instead of the limited presentation shortly before and at the time of death. My findings about co-sleeping, including on the night of Mark's death when the almost identical left posterior 7th fracture occurred, support my conclusion that the left posterior 8th and 9th fractures were caused on one, or possibly two, occasions by a similar process. On the balance of probabilities that process was some form of overlaying generating a sufficient degree of force to cause very small corner fractures.

170. In my judgment, the posterior 8th and 9th fractures occurred at a time when both parents were at the house and sleeping together with Mark. I do not accept F's contention that he could not have been responsible as he was not there:

i) This was suggested by F for the first time in a statement dated 19 January 2021, the first day of the hearing. In it he said, "I had moved to my parents' house just over a week before Mark died, and had moved back to M's house two nights before the night that Mark died".
ii) In oral evidence he told me he was back at the house from 10 June 2019 i.e. 3 days before the death of Mark. That falls within the timescales for each of the posterior fractures.
iii) F told DI Miles that he was staying at the house 3 nights a week. In his first police interview F said that he was at the house 3 to 4 nights per week, and later on 4 to 5 nights per week since Mark had returned home. This seems to me to be a more accurate summary of his comings and goings.
iv) I formed the view when listening to F's evidence that he was implausibly precise about having left the house and returned on 10 June 2019. It was the evidence of all witnesses that he would come and go for a few days. I cannot accept that his recollection is sufficiently precise on this to establish a return on 10 June.
v) Jack told me he thought F had been there for about a week before Mark's death.
vi) M in her first police interview said that F was there more or less every night. Although I accept that this was not tested in cross examination there is no particular reason to doubt what was said by her at a time when this issue had not been identified.
vii) None of the LA evidence indicated any suggestion or awareness on the part of social workers that F was absent for a lengthy period before Mark's death.
viii) I have found inconsistencies in F's presentation generally and overall take the view that he has tailored parts of the evidence, including on this, to suit himself.

171. The experts all agree that overlaying is a theoretical possible explanation for the posterior fractures, but that there is no published literature on such a causative link, although Professor Mangham told me that in his experience overlaying findings have

been made in the family courts and the criminal courts. Professor Fleming decried the term "overlay" and pointed out that published evidence, and his own experience, is that parents do not sleep over or across infants. Parents and children instinctively find ways to find more comfortable positions. That said, he acknowledged the theoretical possibility and commented that alcohol and drug use could reduce the acuity of parental instincts in such a situation. That, in my judgment, is what happened here. In the end, the fractures were caused by a degree of force in a particular direction. Respectful as I am of the cautious expert evidence about overlay, I have considered all the evidence from all sources which was presented to me in some detail, and I have concluded that the 3 posterior fractures occurred in the manner described, by a process of accidental application of force by one or both sleeping parents.

The death of Mark

172. The experts all agree that there is no definitive medical explanation for death. The fractures were not causative of death. There is no evidence of a natural disease, congenital abnormality or underlying condition to explain the death.

173. I have already concluded that Mark spent much of the night in bed with his parents. A number of risk factors identified by the experts were present here; co-sleeping, smoking, alcohol and drug use, relatively poor socio-economic and home conditions, prematurity, the baby not lying on his back and the presence of white matter in the cranial area. At some point during the night Mark died. It is my task to establish why, without straining the evidence to do so.

174. I have reached the clear conclusion that Mark's death was caused by either asphyxiation or overheating, or, most likely, a mixture of the two, leading to cardiac/respiratory arrest. He was lying on his front, face down, tilting on his right side. The parents had consumed cannabis (and in F's case a limited amount of alcohol) and were less responsive to Mark's needs than they should have been. The room was very hot and airless. A smell of cannabis pervaded the atmosphere, and the bed was small. A micro-environment rich in carbon dioxide and poor in oxygen was created. During the night, for a number of hours, the upper part of Mark's body (including part or all of his head) was covered by one or both of his parents' bodies. He was unable to roll away. He was unable to lose heat through his head, and probably absorbed more heat. His airway was obstructed, and the flow of oxygen interrupted. The cranial damage may have contributed to a rapid deterioration but was not the primary cause. Respiratory and/or cardiovascular failure followed; as a result, he lost consciousness and died.

175. Ultimately the parents were responsible through neglect of their parental duties rather than through any deliberate act. Cannabis and alcohol use that evening dulled their sensory responsiveness. They should have ensured Mark was at all times, other than when being fed, in his Moses basket lying face up. They should have ensured that he did not come into their bed. They should have ensured that the room conditions were suitable for a baby, with heating either off or set at a low level, no cannabis in their room and plenty of air. They exposed Mark to a risk of significant harm which, tragically, is what transpired. Although I have found that it was F who brought Mark into bed on that fateful night, I am confident that M was aware in general terms that from time-to-time Mark came into their bed for lengthy periods and tolerated the same. On 12/13 June M did on one occasion during the night tell F to put Mark in the

Moses basket but she did not do it herself, or make sure F did it. Both parents largely ignored the sleep safe advice and both parents, I regret to say, carry blame.

176. Whilst I have separated out my analytical conclusions in respect of the fractures and the death of Mark, they must be seen together as part of the totality of the evidence. In the end this was a tragic event, not caused deliberately by the parents, but a direct result of their failure to protect in particular by (i) bringing Mark into their bed and exposing him to co-sleeping and risks of overlay (ii) consuming alcohol and cannabis which reduced their capacity to care for Mark and respond to his needs and (iii) allowing a hot, airless and cannabis filled atmosphere to envelop the room. Their actions fell far short of the standard of care to be reasonably expected of them.

Drug use

177. I am satisfied that both parents have used cannabis on a regular basis for many years, including over the time when they had the responsibility for care of their children. In particular they were under the influence of cannabis on the night of Mark's death:

i) The results of toxicology reports on both parents based on samples taken on the day of Mark's death indicated heavy use of cannabis by them both and that they "could have been experiencing the effects of cannabis at the time of the incident".
ii) Alpha Biolabs analysed hair samples taken from both parents. The results are consistent with (in the case of F) cannabis use between the start of April 2019 and the start of August 2019 and (in the case of M) between mid-April 2019 and October 2019, again covering the date of Mark's death. Later analysis concludes ongoing use by F from October 2019 to June 2020 and by M from December 2019 to June 2020.
iii) F has smoked cannabis since the age of 15. F particularly associates taking cannabis with low mood. At about the time of Mark's death he was smoking cannabis (often mixed with tobacco) 3 to 4 times a day.
iv) M has been a regular cannabis user for 5 to 6 years, frequently sharing with F.
v) During 12 June they smoked cannabis, including just before going to bed, and left a box of cannabis on the windowsill of their bedroom overnight.

Poor home conditions and personal hygiene

178. I have found, particularly on the basis of the social workers' evidence, that by 12th June 2019 the home was fit for habitation, in reasonable condition and there were no lingering concerns about its presentation. Similarly, early concerns after Mark's birth about the parents' body odour, and John's presentation, quickly melted away. This pleaded finding is not made out.

Non engagement with professionals and contact

179. The parents initially displayed some resistance to the various professionals. M did not wholeheartedly take up midwifery services, the services of her personal adviser, or the assistance of the Family Nurse Partnership; her attendance was intermittent. On several occasions social workers attended at the parents' home for pre-arranged visits but the parents were not there. I bear in mind that M in particular was young, with two children, had herself been taken into care, and found herself the subject of intense scrutiny. She was perhaps understandably wary of the social workers. Over time she

developed a rapport with social services, particularly Lucy Lowe, and engaged properly and appropriately, as did F. By 12th June there were no real concerns on this front and I find that in general terms this finding sought by the LA is not made out. In passing, I note that M in particular has not participated in parenting assessments, but it seems to me that this post-dated the public law application and does not fall to be considered at the threshold stage, although it would be relevant at any welfare assessment.

180. There are two important exceptions to this in the period before Mark's death:

i) The parents did not tell the LA that M's sister, and her partner, were living with them in the home. They knew they were doing wrong; this was a deliberate, and serious, concealment, which involved Rachel and Jack as willing participants.
ii) The parents, when asked directly, denied that either of them used drugs, on 15 May to Barbara Darby and on 21 May to Lucy Lowe. Given what we now know about their drug use, this was a serious omission.

Domestic violence

181. I am satisfied that the parents' relationship has been characterised by incidents of violence, vocal arguments and swearing:

i) The parents acknowledge that they had regular arguments, with F leaving the house on occasions to stay with his family.
ii) On one occasion which did not take place in front of John, F grabbed M and she bit him. During this incident, F trashed the house/turned the table upside down and M pulled the intercom off the wall.
iii) On another occasion, M smashed F's phone because she believed he was being unfaithful.
iv) The children have been exposed to some of these events.

Conclusion

182. I attach a schedule of findings. I am satisfied that by reason of the findings which I have made, the threshold criteria in s31 of the Children Act 1989 are clearly made out.

SCHEDULE OF FINDINGS OF FACT

Fractures and death of Mark

1. Mark tragically died in the early hours of 13 June 2019 and was pronounced dead at 06.27 that morning.

2. Mark had the following injuries:

    a. A fracture or fissure through the cartilaginous segment of the sternum;
    b. A subtle microfracture to the 3rd anterior right rib;
    c. A partial fracture to the 4th anterior right rib
    d. A partial fracture to the 5th anterior right rib.
    e. A complete, transverse non-displaced fracture to the anterior 2nd left rib;
    f. A complete, transverse and displaced fracture to the anterior 3rd left rib;
    g. A complete, transverse and slightly displaced fracture to the anterior 4th left rib;
    h. A complete, transverse non-displaced fracture to the anterior 5th left rib;
    i. A partial fracture to the anterior 6th left rib;
    j. A small corner fracture to the posterior 7th left rib;
    k. A corner fracture to the posterior left 8th rib.
    l. A corner fracture to the posterior left 9th rib.

3. Each of the injuries arose as a result of the application of physical force or trauma.

4. The fractures were sustained as follows:
    a. In relation to fractures at 2a-j above, at or about the time of death.
    b. In relation to fracture 2k above, within 2-4 days prior to Mark's death.
    c. In relation to fracture 2l above, within 3-5 days prior to death.

5. The most likely and probable cause of the fractures was:
    a. In relation to fractures 2a-i above, by reason of CPR.
    b. In relation to fracture 2j above, the unintentional application of a compressive force to Mark's rib caused by the body of one or both of his parents during an episode of co-sleeping during the night of 12-13 June 2019.
    c. In relation to fractures 2k-l above, the unintentional application of compressive force to Mark's ribs caused by the body of one or both of his parents during an episode of co-sleeping on one or more occasions in the period of 2-5 days before 13 June 2019.

6. It is probable that the death of Mark was caused while co-sleeping in his parents' bed. In particular, it is probable that during the act of co-sleeping Mark suffered cardiac and/or respiratory arrest, which is likely to have resulted from one of, or a combination of, the following factors:
    a. Asphyxiation caused by partial or total airway obstruction as a result of one or both parents lying across his upper body and head, and contributed

to by a hot, airless room and the creation of a micro-environment high in carbon dioxide.

b. Thermal imbalance caused by Mark's body overheating as a result of one or both of his parents, probably F, lying across his upper body and head, and contributed to by a hot, airless room.

Co-sleeping

7. The parents co-slept with both John and Mark on a number of occasions, including co-sleeping with Mark on the night of his death, despite clear professional advice not to do so given on several occasions.

Drug misuse

8. The parents are each habitual and long-term heavy users of cannabis who were under the influence of cannabis on the night of Mark's death, and whose care of their children was detrimentally affected as a result, in particular in that it contributed to their failure to avoid co-sleeping with Mark on the night of his death.

Failure to engage with professional services

9. The parents failed to engage with professional services by:
    a. Failing to inform the Local Authority that other persons were living at their house, namely the Mother's sister and her partner.
    b. Prior to the death of Mark, denying that they used drugs.

Domestic violence/abuse

10. The parents' relationship has been characterised by volatile arguments and some physical violence:

    a. The parents had regular arguments, with F leaving the house on occasions to stay with his family.
    b. On one occasion, F grabbed M and she bit him. During this incident, F trashed the house and M pulled the intercom off the wall.
    c. On another occasion, M smashed F's phone because she believed he was being unfaithful.
    d. The children have been exposed to some of these events.