Neutral citation number: [2022] EWFC 105

Case Numbers: MA21C00639

IN THE FAMILY COURT SITTING AT MANCHESTER CIVIL JUSTICE CENTRE

1, Bridge Street West

Manchester

M609DJ

Date: 20 July 2022

Before

HER HONOUR JUDGE CASE

Between

A LOCAL AUTHORITY

Applicant

And

BB

Respondent (1)

And

JD

Respondent (2)

And

AD

A Child by his Children's Guardian

Respondent (3)

And

JD2

Intervenor

Heard on 27, 28, 29, 30 June, 1, 4, 5, 6, 11, 12, 13, 14, 15, 18, 19, 20 July 2022

Representation:

For the Applicant: Mr Crabtree, Counsel, instructed by A local authority Solicitors

For the First Respondent: Mr Vine QC and Mr Murphy solicitor instructed by Makin Dixon Solicitors

For the Second Respondent: Miss Grocott QC and Miss Bramall of counsel instructed by Simpson Millar Solicitors

For the Third Respondent: Mr Bagchi QC and Miss Bland of counsel instructed by Stephensons solicitors

For the Intervenor: Miss Lewis QC and Miss Kaur of counsel instructed by Bromleys solicitors

APPROVED JUDGMENT

This judgment was handed down in writing on 20 July 2022 by circulation to the parties or their representatives by email and by release to The National Archives.

Introduction

1) This is my judgment given on 20 July 2022 following a fact-finding hearing in care proceedings which took place between 27 June and 15 July 2022.
2) I am concerned with one child, AD, dob 19.06.2021. She was one year old the week before the hearing started.

Parties and representation

3) The local authority is represented by Mr Crabtree of counsel. The key social worker remains LP.
4) The mother is BB. She is represented by Mr Vine QC and Mr Murphy, solicitor.
5) The father is JD. He is represented by Ms Grocott QC and Ms Bramall of counsel.
6) AD is represented by Mr Bagchi QC and Ms Bland of counsel. The children's guardian is GP.
7) JD2 is a paternal aunt and first intervenor. She is represented by Ms Lewis QC and Ms Kaur of counsel.

Brief summary of factual background

8) The mother was a "late booker" in respect of AD's birth, having only become aware that she was pregnant at 25 weeks. The mother was 18 and the father 19 at the time and they were both first time parents. The mother had gestational diabetes and high blood pressure during pregnancy. Her due date was 18th June 2021.
9) Mother was admitted as a planned induction on 17th June 2021 as a result of the baby being large for dates. Labour and contractions became slowly established over 18th June 2021.

10) AD was born at 20.42 hours on the 19.06.21 after a long and difficult labour of 52 hours duration. AD was a large baby who weighed 4.42. kg at birth.

11) The final few minutes of labour were particularly eventful. There was a shoulder dystocia during the birth, meaning that following the birth of her head, the baby's shoulder got stuck behind the mother's pelvic bone. This led to a number of manoeuvres being required. The first two manoeuvres were undertaken by the midwife and obstetric registrar, NLD, namely that Mother was placed into the McRoberts position (knees up) and suprapubic pressure was applied. As these were not successful, internal manoeuvres were required and these were undertaken initially by NLD and then by the consultant CAD who was called upon to assist; these were posterior arm manipulation followed by "wood screw" which involved turning the baby. The latter manoeuvre was effective in freeing AD's shoulder and she was then delivered.

12) It took about two minutes for all of these manoeuvres to be completed, albeit it was undoubtedly a very eventful two minutes.

13) AD required some artificial breaths via a mask after birth but quickly established effective respiration herself.

14) As a result of the manoeuvres used AD suffered from Erb's Palsy, being a paralysis of the arm resulting from injury to some of the arm's main nerves. This is an injury which commonly follows shoulder dystocia.

15) A shoulder x ray was undertaken on 20th June which is timed at 18.01. It appears that this was requested by the neonatal team as a result of the difficult birth, and in particular the shoulder dystocia. The x ray showed that the right clavicle scapula and humerus were normal but there were linear un-displaced fractures to the fourth fifth sixth and seventh posterior ribs.

16) It appears that the rib fractures were missed initially, perhaps because of the focus being on the clavicle scapula and humerus, being the type of fractures which are more commonly seen as a result of a shoulder dystocia, rib fractures caused during birth being very rare. Despite the rib fractures being missed, Doctor Olsen, the instructed radiologist, was very clear that they were there to be seen on the first x ray. Thus, there is an upper time limit for the causation of those rib fracture injuries; they must have been caused in the first 22 hours of life.

17) AD was transferred to the NICU ward from the x ray department at 20.04 on 20 June 2021 and went back to the post-natal ward at 16.00 hours on 21 June 2021.

18) In the first 72 hours of life bruising was observed on AD, namely a bruise noted to the right arm which was discovered at 11.20 am during a paediatric review on 20 June, a bruise to the right wrist discovered on 21 June at 11.45 am and a linear bruise to the right arm discovered at 9.30am on 22 June.

19) It is apparent that the injuries did not trigger a safeguarding referral, with the hospital's working assumption being that the rib injuries in particular were caused at birth, although an internal review was subsequently undertaken.

20) The bruising did trigger clinical judgments that there should be both a haematological investigation and an investigation into the possibility of OI, but no safeguarding referral. In these circumstances, we do not have any photographs, body maps or even clear descriptions of the bruises.

21) All the medical experts and clinicians who I have heard from agree that rib fractures at birth are extremely rare, but they also acknowledge that they are described in the literature, albeit usually alongside a fractured clavicle.

22) It has never been part of the local authority's case that these right sided rib fractures were non-accidental injuries. The mother in particular was very weak following the birth; she was transferred to theatre for surgery and she had two blood transfusions. She had very little hands-on care of AD in the first 24 hours following AD's birth and much of the care was undertaken by the father, assisted by midwives.

23) The parties have agreed a detailed timeline of the first 72 hours in hospital to which I will return in due course. Suffice it to say that there were no concerns raised in the hospital at all about the father's care of AD; all the evidence suggests that the father was acting in all respects like a proud first-time father, and he was the first to raise the concern about AD's ribs, having noticed a crackling sound when she was held which got worse.

24) Although this first set of injuries is not the subject of any finding sought by the local authority, they have become very significant in this fact-finding exercise for reasons which will become apparent.

25) AD was discharged home to the care of her parents on 25 June 2021.

26) The parents shared care from 25 June until 10 July but thereafter the main care was undertaken by the mother due to the father testing positive for covid on 10 July. During this time, the mother was assisted by her parents, J & DB, as well as other family members.

27) We now know that the father had gone over to the B's home in the early hours of 16 July, notwithstanding the fact that he was supposed to be self-isolating. Both parents insist that he did not go anywhere near AD. This is a matter I will revert to later.

28) On 16.07.2021 mother reported to the community midwife that AD had had an unsettled night and that she had woken to find her with bruises on her chin and a scratch to her ear. She also heard a clicking sound in her ribs during the night. The mother was advised to take AD to A and E which she did.

29) The relevant bruises were subsequently noted to be:

a) A 0.3 x 0.4 brown circular discoloration just lateral to edge of mouth on AD's left side;

b) 1.5 x 1.5 cm circular brown bruise under right side of AD's chin

c) 1 x 1 cm circular brown bruise lower down under right chin.

30) A decision was made to admit AD and to make a safeguarding referral.

31) On 20.07.2021 AD underwent a skeletal survey which revealed not only healing fractures to her right ribs, but also newer fractures to her left ribs, namely ribs 6 to 10. By 20.07.2021 these were considered to be up to 14 days old.

32) As a result of the safeguarding referral, the mother was only permitted to have supervised time with AD. Her brother, CB, agreed to come to the hospital and supervise her contact.

33) AD was discharged on 21 July. She was discharged into the care of the father and paternal grandmother, as part of a safety plan, due to the length of time since the father had any care of AD (or at least was believed to have done). The father had by that stage finished his Covid isolation. The mother's contact was to be supervised.

34) On 1 August, the mother went as requested to the police station to be interviewed. She dropped in on AD on the way.

35) AD had had a restless night and while the mother went off to her interview the father took AD for a walk. On their return, the father met his sister JD2 and pointed out further marks on AD's face, namely further bruising to the jaw and a scratch mark inside the right ear - specifically in the lower part of the pinna.

36) The evidence of the family is that there were discussions as to whether to call children's services that day or wait until the following day when AD was due to have a routine physiotherapy appointment. I will return to these discussions, which involved the mother, maternal grandfather and JD2.

37) The evidence of JD, which is not disputed, is that that the family made phone calls to children's services that day but were not able to speak to a social worker and they left a message.

38) The parents then took AD to her routine physiotherapy appointment at 8.45 am on 2 August; they pointed out the marks and this lead to a safeguarding referral.

39) The marks seen were:

a) A linear bruise just below the chin which was about 3cm long, brownish in colour

b) Two marks on either side of the above bruise which appeared like fingerprint marks

c) A scratch inside the right ear in the lower part of the pinna.

40) AD was later seen by paediatric clinicians who ordered a skeletal survey. That revealed a fracture to AD's right clavicle.

41) As a result of events on the 02.08.2021, AD was admitted to hospital again.

42) A detailed timeline was submitted with the local authority's written evidence of the care AD received between birth and admission to hospital on 2 August.

43) On 04.08.2021 the parents agreed to AD being accommodated under s.20 and placed with the paternal great grandmother, WF (supported by her 27-year-old granddaughter, SN). Sadly, WF - aged 70 - said that despite her optimism, she could not cope with the demands of a new-born even with SN's support. AD was placed in foster care on the 13.08.2021 where she remains to date.

Brief summary of the progress of proceedings.

44) Local Authority's application made on 17th August 2021, the precipitating issue being the injuries suffered by AD.

45) The written medical evidence relied upon was that of the original treating clinicians who undertook the child protection medicals, namely Dr M following examination on 16 July and of Dr N following examination on 2 August with an addendum report from Dr M dated 4 August 2022. Unsurprisingly, the treating paediatricians considered the presentation of AD on two occasions with unexplained bruising and the subsequent discovery of the left sided rib fractures and right sided clavicular

fracture to be highly suspicious for non-accidental injury until proven otherwise. At that stage investigations were ongoing.

46) It should be noted that at that time the treating clinicians were clearly of the view that the rib fractures discovered in the first 24 hours of life were birth injuries; it does not appear that they were aware that there was significant doubts in respect of that or that they were aware of the active investigation being undertaken by the hospital. In addition, they were not aware of the bruising found in the first 72 hours after birth.

47) Nevertheless, it was appreciated at an early stage by the legal representatives and the court that the proposition that AD suffered rib fractures at birth (such being an extremely rare event) was an unusual factor.

48) There was no active opposition to either the making of an interim care order or to the care plan. AD therefore remained with her original foster carers.

49) I have had case management throughout.

50) At an early stage it was identified that this was one of those cases which fell squarely in the category of complex medical cases where a separate fact-finding hearing would be necessary.

51) Over the course of proceedings, expert evidence has been commissioned from the following experts: Dr Birch, paediatrician, Dr Olsen, paediatric radiologist, Dr Johnson, neonatologist, and, Dr Keenan, haematologist, and subsequently from Dr Allgrove, endocrinologist and Dr Price, geneticist

52) The medical evidence will be considered more fully below but suffice it to say at this stage that the expert evidence revealed a number of unusual features to AD's presentation including:

a) Radiological from Dr Olsen that:
    i) AD's fracture healing responses were considered to be abnormal;
    ii) AD's long bones and ribs were considered to be abnormally gracile;
b) Genetic evidence that AD has inherited a heterozygous SPARC gene variant from her father, the SPARC gene being associated with bone development and connective tissue structure development but being generally understood to be recessive (such that she would need to inherit the variant from both parents for it to manifest in disease).

53) I have also directed phone analysis of the parents' phones.

54) Unfortunately, due to the developing medical picture and the need for further investigations two fact finding hearings had to be aborted before the effective hearing this month. The case has been heard over a period of 15 days

55) A further feature of the case has been the late emergence of obstetric records. It became apparent a long time ago that the obstetric records were not complete and although I have had a partial explanation in that the relevant NHS Trust were experiencing a major issue since May of this year the reasons for the non-production of the obstetric records before that remains unclear and has had an undoubted detrimental effect on the smooth running of the case.

56) The remaining obstetric records were only produced in the week prior to the fact-finding hearing. Their emergence did lead to a distinct shift in the tenor of the case, including a decision to hear from the two obstetricians who delivered AD in the early part of the hearing. Both of them had provided witness statements at an early stage when matters were fresh in their mind for the purposes of the internal investigation by the hospital. This investigation had not concluded that the first set of rib fractures were birth injuries; rather they were considered to be "unexplained". Further it became apparent from the obstetric records that there was unexplained bruising within the initial stay in hospital as detailed above.

57) **<u>Findings sought by local authority at conclusion of case</u>**

Bruises Noted 20-22.06.2021

1. No clear or safe conclusions can be arrived at as to their origins and it would therefore be unsafe to seek to identify a mechanism for these but it is speculation and/or conjecture to suggest they provide tangible evidence of some impact on AD's health by reason of the SPARC gene variant.

Rib Fractures Noted Within First 24-hours

2.1 These were not the result of anything NLD or ACD did.

2.2 It is inherently improbable that they arose from some deliberate act of the part of the mother or the father.

2.2 It is inherently more likely that they arose from the application of supra-pubic pressure tan that they are associated with the SPARC gene variant.

Mark and Bruises Noted 16.07.2022

3.1 Neither parent has provided a true and nor accurate account of what took place in the early hours of the 16.07.2022.

3.2 On a balance of probabilities, the marks and bruises - but not the scratches - are the product of rough handling by either the mother or the father.

Mark and Bruises Noted Professionally on 02.08.2022

4. The marks and bruises are the product of AD being handled roughly by the mother or the father.

The fractures to the left ribs and Left Clavicle

5. These were inflicted injuries which were either caused deliberately by the mother or the father or they are the result of AD being handled by the mother and/or the father which is way outside the parameters of 'normal handling' so that the person(s) responsible would have known he/she/they were acting inappropriately, and AD had suffered injury.

Law

58) I was provided with a document at the outset summarising the primary principles on the authorities. Further authorities were referred to in the written closing submissions which I received. This section is an amalgamation of those submissions on the law and for that reason there is to an extent an overlap in the authorities cited. There is no dispute between the parties about the applicable principles.

59) In **Re ABC [2020] EWFC 57** Mr Justice Keehan summarised the relevant principles in the following terms:

"The Law – Fact Finding

7. The burden of proof lies with the local authority. It is the local authority that brings these proceedings and identifies the findings they invite the court to make. Therefore, the burden of proving the allegations rests with them.

8. In family proceedings there is only one standard of proof, namely the balance of probabilities. This was described by Denning J **in *Miller v Ministry of Pensions* [1947] 2 All ER 372:** "If the evidence is such that the tribunal can say: "We think it more probable than not", the burden is discharged but, if the probabilities are equal, it is not.

9. In ***Re B (Care Proceedings: Standard of Proof)* [2008] UKHL 35**, [2008] 2 FLR 141, Baroness Hale, while approving the general principles adumbrated by Lord Nicholls in *Re H and Others*, expressly disapproved the formula subsequently adopted by courts to the effect that 'the more serious the allegation, the more cogent the evidence needed to be to prove it'. Baroness Hale stated:

> "[70] My Lords, for that reason I would go further and announce loud and clear that the standard of proof in finding the facts necessary to establish the threshold under s 31(2) or the welfare considerations in s 1 of the 1989 Act is the simple balance of probabilities, neither more nor less. Neither the seriousness of the allegation nor the seriousness of the consequences should make any difference to the standard of proof to be applied in determining the facts. The inherent probabilities are simply something to be taken into account, where relevant, in deciding where the truth lies.
>
> [71] As to the seriousness of the consequences, they are serious either way. A child may find her relationship with her family seriously disrupted; or she may find herself still at risk of suffering serious harm. A parent may find his relationship with his child seriously disrupted; or he may find himself still at liberty to maltreat this or other children in the future."

10. The inherent probability of an event remains a matter to be taken into account when weighing the probabilities and deciding whether, on balance, the event occurred: common sense, not law, requires that in deciding this question regard should be had, to whatever extent appropriate, to inherent probabilities – per Lord Hoffman in *Re B* at paragraph 15.

11. The burden of disproving a reasonable explanation put forward by the parents falls

on the local authority (see paragraph 10 ***Re S (Children)*** **[2014] EWCA Civ 1447**).

12. The inability of a parent or carer to explain an event cannot be relied upon to find an event proved, see ***Re M (A Child)*** **[2012] EWCA Civ 1580** at paragraph 16 – the view taken by the Judge was:

> "that absent a parental explanation, there was no satisfactory benign explanation, ergo there must be a malevolent explanation. And it is that leap which troubles me. It does not seem to me that the conclusion necessarily follows unless, wrongly, the burden of proof has been reversed, and the parents are being required to satisfy the court that this is not a non-accidental injury"

13. Findings of fact in these cases must be based on evidence. As Munby LJ, as he then was, observed **in** ***Re A (A Child) (Fact-finding hearing: Speculation)*** **[2011] EWCA Civ 1:**

> "[26] It is an elementary proposition that findings of fact must be based on evidence, including inferences that can properly be drawn from the evidence and not on suspicion or speculation."

14. Peter Jackson J, as he then was, **in** ***Re BR (Proof of Facts)*** **[2015] EWFC 41** said, at paragraph 15-17:

> "[15] It would of course be wrong to apply a hard and fast rule that the carer of a young child who suffers an injury must invariably be able to explain when and how it happened if they are not to be found responsible for it. This would indeed be to reverse the burden of proof. However, if the judge's observations are understood to mean that account should not be taken, to whatever extent is appropriate in the individual case, of the lack of a history of injury from the carer of a young child, then I respectfully consider that they go too far.
>
> [16] Doctors, social workers and courts are in my view fully entitled to take into account the nature of the history given by a carer. The absence of any history of a memorable event where such a history

> might be expected in the individual case may be very significant. Perpetrators of child abuse often seek to cover up what they have done. The reason why paediatricians may refer to the lack of a history is because individual and collective clinical experience teaches them that it is one of a number of indicators of how the injury may have occurred. Medical and other professionals are entitled to rely upon such knowledge and experience in forming an opinion about the likely response of the individual child to the particular injury, and the court should not deter them from doing so. The weight that is then given to any such opinion is of course a matter for the judge.
>
> [17] In the present case, an adult was undoubtedly in the closest proximity to the baby whenever the injuries occurred and the absence of any account of a pain reaction on the baby's part on any such occasion was therefore one of the matters requiring careful assessment".

15. In *Re BR*, Peter Jackson J, as he then was, sets out a list of risk factors and protective factors that might assist the court in assessing the evidence it hears in cases of alleged inflicted injury. At paragraph 18 he said:

> "In itself, the presence or absence of a particular factor proves nothing. Children can of course be well cared for in disadvantaged homes and abused in otherwise fortunate ones. As emphasized above, each case turns on its facts. The above analysis may nonetheless provide a helpful framework within which the evidence can be assessed and the facts established".

16. The judge must decide if the facts in issue have happened or not. There is no room for finding that it might have happened. The law operates a binary system in which the only values are 0 and 1, per Lord Hoffman in *Re B* at paragraph 2. This applies to the conclusion as to the fact in issue (e.g. did it happen; yes or no?) not the value of individual pieces of evidence (which fall to be assessed in combination with each other).

17. When carrying out the assessment of evidence regard must be had to the observations of Butler-Sloss P, as she then was, **in *Re T* [2004] EWCA (Civ) 558:**

> "[33] 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."

18. When considering the 'wide canvas' of evidence the following section of the speech of Lord Nicholls **in *Re H and R (Child Sexual Abuse: Standard of Proof)* [1996] 1 FLR 80** remains relevant:

> "[101B] I must now put this into perspective by noting, and emphasising, the width of the range of facts which may be relevant when the court is considering the threshold conditions. The range of facts which may properly be taken into account is infinite. Facts including the history of members of the family, the state of relationships within a family, proposed changes within the membership family, parental attitudes, and omissions which might not reasonably have been expected, just as much as actual physical assaults. They include threats, and abnormal behaviour by a child, and unsatisfactory parental responses to complaints or allegations. And facts, which are minor or even trivial if considered in isolation, taken together may suffice to satisfy the court of the likelihood of future harm. The court will attach to all the relevant facts the appropriate weight when coming to an overall conclusion on the crucial issue."

19. The evidence of the parents and of any other carers is of the utmost importance. It is essential that the court forms a clear assessment of their credibility and reliability. They must have the fullest opportunity to take part in the hearing and the court is likely to place considerable weight on the evidence and the impression it forms of them (**see *Re W and another (Non-accidental injury)* [2003] FCR 346.**

20. The process by which the facts are judicially determined is further complicated for the potent reason Leggatt J, as he then was, set out in ***Gestmin SGPS SA v Credit Suisse (UK) Ltd & Anor*** **[2013] EWHC 3560 (Comm) (15 November 2013),** [paragraphs 15-21] in relation to testimony based on memory:

> "An obvious difficulty which affects allegations and oral evidence based on recollection of events which occurred several years ago is the unreliability of human memory. While everyone knows that memory is fallible, I do not believe that the legal system has sufficiently absorbed the lessons of a century of psychological research into the nature of memory and the unreliability of eyewitness testimony. One of the most important lessons of such research is that in everyday life we are not aware of the extent to which our own and other people's memories are unreliable and believe our memories to be more faithful than they are. Two common (and related) errors are to suppose: (1) that the stronger and more vivid is our feeling or experience of recollection, the more likely the recollection is to be accurate; and (2) that the more confident another person is in their recollection, the more likely their recollection is to be accurate."

21. Leggat LJ additionally made the following observations as to demeanour in ***R (on the application of SS) (Sri Lanka) v The Secretary of State for the Home Department*** **[2018] EWCA Civ 1391:**

> "36. Generally speaking, it is no longer considered that inability to assess the demeanour of witnesses puts appellate judges "in a permanent position of disadvantage as against the trial judge".

22. That is because it has increasingly been recognised that it is usually unreliable and often dangerous to draw a conclusion from a witness's demeanour as to the likelihood that the witness is telling the truth. The reasons for this were explained by MacKenna J in words which Lord Devlin later adopted in their entirety and Lord Bingham quoted with approval:

> "I question whether the respect given to our findings of fact based on the demeanour of the witnesses is always deserved. I doubt my own ability, and sometimes that of other judges, to discern from a witness's demeanour, or the tone of his voice, whether he is telling the truth. He speaks hesitantly. Is that the mark of a cautious man, whose statements are for that reason to be respected, or is he taking time to fabricate? Is the emphatic witness putting on an act to deceive me, or is he speaking from the fullness of his heart, knowing that he is right? Is he likely to be more truthful if he looks me straight in the face than if he casts his eyes on the ground perhaps from shyness or a natural timidity? For my part I rely on these considerations as little as I can help.
>
> 40. This is not to say that judges (or jurors) lack the ability to tell whether witnesses are lying. Still less does it follow that there is no value in oral evidence. But research confirms that people do not in fact generally rely on demeanour to detect deception but on the fact that liars are more likely to tell stories that are illogical, implausible, internally inconsistent and contain fewer details than persons telling the truth: see Minzner, "Detecting Lies Using Demeanor, Bias and Context" (2008) 29 Cardozo LR 2557. One of the main potential benefits of cross-examination is that skilful questioning can expose inconsistencies in false stories."

23. The findings made by the judge must be based on all the available material, not just the scientific or medical evidence; and all that evidence must be considered in the wider social and emotional context: ***A County Council v X, Y and Z (by their Guardian)*** **[2005] 2 FLR 129.** This was expressed as the expert advises and the judge decides **in** ***Re Be (Care: Expert Witnesses)*** **[1996] 1 FLR 667.**

24. In ***A Local Authority v K, D and L*** **[2005] EWHC 144 (Fam)**, [2005] 1 FLR 851 Charles J referred to the important distinction between the role of the Judge and the role of the expert (see paragraph 39), saying:

"(a) that the roles of the court and the expert are distinct, and

(b) that it is the court that is in the position to weigh the expert evidence against its findings on the other evidence, and thus for example descriptions of the presentation of a child in the hours or days leading up to his or her collapse, and accounts of events given by carers."

25. These comments were developed by Charles J. in a lengthy section in the judgment in *Re K, D and L* by a review of the relevant case law in the area:

"[44] …in cases concerning alleged non- accidental injury to children properly reasoned expert medical evidence carries considerable weight, but in assessing and applying it the judge must always remember that he or she is the person who makes the final decision;

[49] …In a case where the medical evidence is to the effect that the likely cause is non-accidental and thus human agency, a court can reach a finding on the totality of the evidence either (a) that on the balance of probability an injury has a natural cause, or is not a non-accidental injury, or (b) that a local authority has not established the existence of the threshold to the civil standard of proof;"

26. The conclusion reached by Charles J (following his judicial summation of the relevant case-law in this area) is to be found at paragraph 63, where he said:

"I am therefore able to reach a conclusion as to cause of death and injury that is different to, or does not accord with, the conclusion reached by the medical experts as to what they consider is more likely than not to be the cause having regard to the existence of an alternative or alternatives which they regard as reasonable (as opposed to fanciful or simply theoretical) possibilities. In doing so I do not have to reject the reasoning of the medical experts, rather I can accept it but on the basis of the totality of the evidence, my findings thereon and reasoning reach a different overall conclusion."

27. In assessing the expert evidence, the court must bear in mind that in cases involving a multi-disciplinary analysis of the medical information conducted by a group of specialists, each bring their own expertise to bear on the problem, and the court must be careful to ensure that each expert keeps within the bounds of their own expertise and defers, where appropriate, to the expertise of others (see observations of King J, as she then was, in Re S [2009] EWHC 2115 Fam).

28. The court is not precluded from making a finding that the cause of harm...is unknown. The judgment of Hedley J in the case of ***Re R (Care Proceedings: Causation)*** **[2011] EWHC 1715 (Fam)** sets this out:

> "[10]...there has to be factored into every case which concerns a disputed etiology giving rise to significant harm, a consideration as to whether the cause is unknown. That affects neither the burden nor the standard of proof. It is simply a factor to be taken into account in deciding whether the causation advanced by the one shouldering the burden of proof is established on the balance of probabilities."

29. The court must resist the temptation identified by the Court of Appeal in ***R v Henderson and Others*** **[2010] EWCA Crim 1219** to believe that it is always possible to identify the cause of injury to the child.

30. So far as the identification of perpetrators is concerned, that issue was considered in detail in the Supreme Court case of ***Re S-B*** **[2009] UKSC 17**. The standard of proof with respect to any such identification is the balance of probabilities:

> "34. The first question listed in the statement of facts and issues is whether it is now settled law that the test to be applied to the identification of perpetrators is the balance of probabilities. The parties are agreed that it is and they are right. It is correct, as the Court of Appeal observed, that *Re B* was not directly concerned with the identification of perpetrators but with whether the child had been harmed. However, the observations of Lord Hoffmann and Lady Hale, quoted at paragraph 12 above, make it clear that the same approach is to be applied to the identification of perpetrators as to any other factual

issue in the case. This issue shows quite clearly that there is no necessary connection between the seriousness of an allegation and the improbability that it has taken place. The test is the balance of probabilities, nothing more and nothing less.

35. Of course, it may be difficult for the judge to decide, even on the balance of probabilities, who has caused the harm to the child. There is no obligation to do so. As we have already seen, unlike a finding of harm, it is not a necessary ingredient of the threshold criteria. As Lord Justice Wall put it in ***Re D (Care Proceedings: Preliminary Hearings)*** **[2009] EWCA Civ 472**, [2009] 2 FLR 668, at para 12, judges should not strain to identify the perpetrator as a result of the decision in *Re B*: "If an individual perpetrator can be properly identified on the balance of probabilities, then ... it is the judge's duty to identify him or her. But the judge should not start from the premise that it will only be in an exceptional case that it will not be possible to make such an identification."

31. Where a perpetrator cannot be identified, the Court should seek to identify the pool of possible perpetrators on the basis of the "real possibility" test

"40. As to the second, if the judge cannot identify a perpetrator or perpetrators, it is still important to identify the pool of possible perpetrators. Sometimes this will be necessary in order to fulfil the "attributability" criterion. If the harm has been caused by someone outside the home or family, for example at school or in hospital or by a stranger, then it is not attributable to the parental care unless it would have been reasonable to expect a parent to have prevented it. Sometimes it will desirable for the same reasons as those given above. It will help to identify the real risks to the child and the steps needed to protect him. It will help the professionals in working with the family. And it will be of value to the child in the long run.

41. In ***North Yorkshire County Council v SA*** **[2003] EWCA Civ 839, [2003] 2 FLR 849**, the child had suffered non-accidental injury on two

occasions. Four people had looked after the child during the relevant time for the more recent injury and a large number of people might have been responsible for the older injury. The Court of Appeal held that the judge had been wrong to apply a "no possibility" test when identifying the pool of possible perpetrators. This was far too wide. Dame Elizabeth Butler-Sloss P, at para 26, preferred a test of a "likelihood or real possibility".

42. Miss Susan Grocott QC, for the local authority, has suggested that this is where confusion has crept in, because in Re H this test was adopted in relation to the prediction of the likelihood of future harm for the purpose of the threshold criteria. It was not intended as a test for identification of possible perpetrators.

43. That may be so, but there are real advantages in adopting this approach. The cases are littered with references to a "finding of exculpation" or to "ruling out" a particular person as responsible for the harm suffered. This is, as the President indicated, to set the bar far too high. It suggests that parents and other carers are expected to prove their innocence beyond reasonable doubt. If the evidence is not such as to establish responsibility on the balance of probabilities it should nevertheless be such as to establish whether there is a real possibility that a particular person was involved. When looking at how best to protect the child and provide for his future, the judge will have to consider the strength of that possibility as part of the overall circumstances of the case."

32. In ***B (Children: Uncertain Perpetrator)*** **[2019] EWCA Civ 575**, Peter Jackson LJ stated:

1. "46. Drawing matters together, it can be seen that the concept of a pool of perpetrators seeks to strike a fair balance between the rights of the individual, including those of the child, and the importance of child protection. It is a means of satisfying the attributable threshold condition that only arises where the court is satisfied that there has been significant harm arising from (in shorthand) ill-treatment and where the only 'unknown' is which of a number of persons is responsible. So, to state the

obvious, the concept of the pool does not arise at all in the normal run of cases where the relevant allegation can be proved to the civil standard against an individual or individuals in the normal way. Nor does it arise where only one person could possibly be responsible. In that event, the allegation is either proved or it is not. There is no room for a finding of fact on the basis of 'real possibility', still less on the basis of suspicion. There is no such thing as a pool of one.

47. It should also be emphasised that a decision to place a person within the pool of perpetrators is not a finding of fact in the conventional sense. As is made clear in *Lancashire* at [19], *O and N* at [27-28] and *S-B* at [43], the person is not a proven perpetrator but a possible perpetrator. That conclusion is then carried forward to the welfare stage, when the court will, as was said in *S-B*, "consider the strength of the possibility" that the person was involved as part of the overall circumstances of the case. At the same time it will, as Lord Nicholls put it in Lancashire, "keep firmly in mind that the parents have not been shown to be responsible for the child's injuries." In saying this, he recognised that a conclusion of this kind presents the court with a particularly difficult problem. Experience bears this out, particularly where a child has suffered very grave harm from someone within a pool of perpetrators.

48. The concept of the pool of perpetrators should therefore, as was said in *Lancashire*, encroach only to the minimum extent necessary upon the general principles underpinning s.31(2). Centrally, it does not alter the general rule on the burden of proof. Where there are a number of people who might have caused the harm, it is for the local authority to show that in relation to each of them there is a real possibility that they did. No one can be placed into the pool unless that has been shown. This is why it is always misleading to refer to 'exclusion from the pool': see *Re S-B* at [43]. Approaching matters in that way risks, as Baroness Hale said, reversing the burden of proof.

49. To guard against that risk, I would suggest that a change of language

may be helpful. The court should first consider whether there is a 'list' of people who had the opportunity to cause the injury. It should then consider whether it can identify the actual perpetrator on the balance of probability and should seek, but not strain, to do so: ***Re D (Children)*** **[2009] EWCA Civ 472 at [12].** Only if it cannot identify the perpetrator to the civil standard of proof should it go on to ask in respect of those on the list: "Is there a likelihood or real possibility that A or B or C was the perpetrator or a perpetrator of the inflicted injuries?" Only if there is should A or B or C be placed into the 'pool'.

50. Likewise, it can be seen that the concept of a pool of perpetrators as a permissible means of satisfying the threshold was forged in cases concerning individuals who were 'carers'. In Lancashire, the condition was interpreted to include non-parent carers. It was somewhat widened in *North Yorkshire* at [26] to include 'people with access to the child' who might have caused injury. If that was an extension, it was a principled one. But at all events, the extension does not stretch to "anyone who had even a fleeting contact with the child in circumstances where there was the opportunity to cause injuries": *North Yorkshire* at [25]. Nor does it extend to harm caused by someone outside the home or family unless it would have been reasonable to expect a parent to have prevented it: *S-B* at [40].

51. It should also be noted that in the leading cases there were two, three or four known individuals from whom any risk to the child must have come. The position of each individual was then investigated and compared. That is as it should be. To assess the likelihood of harm having been caused by A or B or C, one needs as much information as possible about each of them in order to make the decision about which if any of them should be placed in the pool. So, where there is an imbalance of information about some individuals in comparison to others, particular care may need to be taken to ensure that the imbalance does not distort the assessment of the possibilities. The same may be said where the list of individuals has been whittled down to a pool of one named individual alongside others who are not similarly identified. This may be unlikely,

but the present case shows that it is not impossible. Here it must be shown that there genuinely is a pool of perpetrators and not just a pool of one by default."

33. Where there are multiple injuries sustained at different times the court must consider separately the question of who is the perpetrator of each injury. If the court is able to identify the perpetrator of one injury, the question would then arise as to the extent to which the court is entitled to rely upon that finding in order to identify the perpetrator of other injuries. That issue was considered by the Court of Appeal in ***Re M (A Child)*** **[2010] EWCA Civ 1467**. Wilson LJ, as he then was, said:

> "37 The first basis of the cross-appeal is the father's responsibility for the October event. Is it likely, asks Miss Hodgson on behalf of the mother, that, within the space of less than seven weeks, the partial suffocation of a baby is caused by one parent and yet injuries to his body are, or even just may be, perpetrated by the other? It is certainly not unknown for judges to give a negative answer to that type of question and, by reference to it, to proceed to identify the perpetrator of a second non-accidental injury. When they do so, their reasoning is – in my view – in principle valid . . ."

34. The evidential basis for making a finding of a failure to protect was considered by the Court of Appeal in the case of ***L-W Children*** **[2019] EWCA Civ 159**. At paragraph 40, King LJ emphasised that it is for the local authority to prove the necessary link between its case on the facts and its threshold allegations. At paragraph 62, King LJ said:

2. "62. Failure to protect comes in innumerable guises. It often relates to a mother who has covered up for a partner who has physically or sexually abused her child or, one who has failed to get medical help for her child in order to protect a partner, sometimes with tragic results. It is also a finding made in cases where continuing to live with a person (often in a toxic atmosphere, frequently marked with domestic violence) is having a serious and obvious deleterious effect on the children in the household. The harm, emotional rather than physical, can be equally significant and damaging to a child.

63. Such findings where made in respect of a carer, often the mother, are of the utmost importance when it comes to assessments and future welfare considerations. A finding of failing to protect can lead a Court to conclude that the children's best interests will not be served by remaining with, or returning to, the care of that parent, even though that parent may have been wholly exonerated from having caused any physical injuries.

64. Any Court conducting a Finding of Fact Hearing should be alert to the danger of such a serious finding becoming 'a bolt on' to the central issue of perpetration or of falling into the trap of assuming too easily that, if a person was living in the same household as the perpetrator, such a finding is almost inevitable. As Aikens LJ observed in Re J, "nearly all parents will be imperfect in some way or another". Many households operate under considerable stress and men go to prison for serious crimes, including crimes of violence, and are allowed to return home by their long-suffering partners upon their release. That does not mean that for that reason alone, that parent has failed to protect her children in allowing her errant partner home, unless, by reason of one of the facts connected with his offending, or some other relevant behaviour on his part, those children are put at risk of suffering significant harm."

35. The rule of ***R v Lucas*** **[1981] QB 720** was adopted in the family courts **in** ***A County Council v K, D and L*****.** The principle is that if the court concludes that a witness has lied about one matter it does not follow that he has lied about everything. A witness may lie for many reasons, for example out of shame, humiliation, misplaced loyalty, panic, fear, distress, confusion and emotional pressure.

36. In the criminal courts a lie can only be used to bolster evidence against a defendant if the fact-finder is satisfied that the lie is deliberate, relates to a material issue and there is no innocent explanation for the lie.

37. The court has considered the case of ***Re: H-C (Children)*** **[2016] EWCA Civ 136**,

in particular paragraphs 98 to 100 of the decision of Lord Justice McFarlane, as he then was, where he said:

> "98. The decision in *R v Lucas* has been the subject of a number of further decisions of the Court of Appeal Criminal Division over the years, however the core conditions set out by Lord Lane remain authoritative. The approach in R v Lucas is not confined, as it was on the facts of Lucas itself, to a statement made out of court and can apply to a "lie" made in the course of the court proceedings and the approach is not limited solely to evidence concerning accomplices.
>
> 99. In the Family Court in an appropriate case a judge will not infrequently directly refer to the authority of R v Lucas in giving a judicial self-direction as to the approach to be taken to an apparent lie. Where the "lie" has a prominent or central relevance to the case such a self-direction is plainly sensible and good practice.
>
> 100. One highly important aspect of the Lucas decision, and indeed the approach to lies generally in the criminal jurisdiction, needs to be borne fully in mind by family judges. It is this: in the criminal jurisdiction the "lie" is never taken, of itself, as direct proof of guilt. As is plain from the passage quoted from Lord Lane's judgment in Lucas, where the relevant conditions are satisfied the lie is "capable of amounting to a corroboration". In recent times the point has been most clearly made in the Court of Appeal Criminal Division in the case of ***R v Middleton*** **[2001] Crim.L.R. 251**.
>
> In my view there should be no distinction between the approach taken by the criminal court on the issue of lies to that adopted in the family court. Judges should therefore take care to ensure that they do not rely upon a conclusion that an individual has lied on a material issue as direct proof of guilt"'

Medical certainty/unknown cause

60) Following that extensive review of the authorities by Mr Justice Keehan, I consider the following additional matters which were included in a similar review of the authorities in **Re L and M (Children) [2013] EWHC 1569 (Fam) at para 46 to 58**; there is a partial overlap with the previous cases cited.

61) “Ninth, as observed by Dame Elizabeth Butler-Sloss P in an earlier case:

> "The judge in care proceedings must never forget that today's medical certainty may be discarded by the next generation of experts or that scientific research would throw a light into corners that are at present dark."

62) This principle, inter alia, was drawn from the decision of the Court of Appeal in the criminal case of **R v Cannings [2004] EWCA 1 Crim**. In that case a mother had been convicted of the murder of her two children who had simply stopped breathing. The mother's two other children had experienced apparent life-threatening events taking a similar form. The Court of Appeal Criminal Division quashed the convictions. There was no evidence other than repeated incidents of breathing having ceased. There was serious disagreement between experts as to the cause of death. There was fresh evidence as to hereditary factors pointing to a possible genetic cause. In those circumstances, the Court of Appeal held that it could not be said that a natural cause could be excluded as a reasonable possible explanation. In the course of his judgment, Judge LJ (as he then was) observed:

> "What may be unexplained today may be perfectly well understood tomorrow. Until then, any tendency to dogmatise should be met with an answering challenge."

63) With regard to this latter point, recent case law has emphasised the importance of taking into account, to the extent that it is appropriate in any case, the possibility of the unknown cause. The possibility was articulated by Moses LJ in **R v Henderson-Butler and Oyediran** [2010] EWCA Crim. 126 at paragraph 1:

> "Where the prosecution is able, by advancing an array of experts, to identify a non-accidental injury and the defence can identify no alternative cause, it

> is tempting to conclude that the prosecution has proved its case. Such a temptation must be resisted. In this, as in so many fields of medicine, the evidence may be insufficient to exclude, beyond reasonable doubt, an unknown cause. As Cannings teaches, even where, on examination of all the evidence, every possible known cause has been excluded, the cause may still remain unknown."

64) In **Re R, Care Proceedings Causation [2011] EWHC 1715 (Fam)**, Hedley J, who had been part of the constitution of the Court of Appeal in the Henderson case, developed this point further. At paragraph 10, he observed,

> "A temptation there described is ever present in Family proceedings too and, in my judgment, should be as firmly resisted there as the courts are required to resist it in criminal law. In other words, there has to be factored into every case which concerns a discrete aetiology giving rise to significant harm, a consideration as to whether the cause is unknown. That affects neither the burden nor the standard of proof. It is simply a factor to be taken into account in deciding whether the causation advanced by the one shouldering the burden of proof is established on the balance of probabilities."

65) Also missing from Mr Justice Keehan's review but included in the Re L and M review is an authority considering the approach to be taken to oral evidence:

66) "the court must take 'a balanced approach' to the significance of oral evidence and be 'mindful' of the fallibility of memory and the pressures of giving evidence, with the relative significance of oral and contemporaneous evidence varying from case to case, **Re A (A Child) [2020] EWCA Civ 1230, King LJ at §36 to §41;"**

67) In **A Local Authority v XX and XY (threshold: overlaying) [2021] EWFC 27,** Peel J at §55 onwards Peel J confirmed a number of further principles, again taken from higher authorities:

Probability

“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.

Primary facts/causal link

64. The local authority 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.

Proof and the local authority burden

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."

Non-accidental injury

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"

68) Finally, from the Guardian's final submissions, I take the following points, again noting that there is some overlap with the previous authorities cited:

69) We remind the court of the direction given by Mostyn J in **Lancashire v R** [2013] EWHC 3064 (Fam) that there is no pseudo-burden upon a parent to come up with explanations for events (paragraph 11(vi)).

70) It was in the case of Re R (A child) [2011] EWHC 1715 (Fam) that Hedley J made the following statements which encapsulate the legal (and human) position in relation to unknown causes:

> "[9] In the case of Henderson & Ors [2010] EWCA Crim 1269 (fully reported) the Court of Appeal Criminal Division sought to address these matters. Conspicuous effort was made to ensure that the experience of the Family Court was fed into that court's consideration. It is of course desirable, where possible, that the law applied in the two jurisdictions should be as consistent as the substantive law permits. There is, of course, a fundamental difference between the two systems in relation to the differing standards of proof that prevail. Nevertheless, it may be worth reflecting on the words of Lord Justice Moses which introduce the judgment of the court in that case. He says this:
>
> > "A young baby dies whilst under the sole care of a parent or child-minder. That child can give no clue to clinicians as to what has happened. Experts, prosecuting authorities and juries must reconstruct, as best they can, what has happened. There remains a temptation to believe that it is always possible to identify the cause of injury to a child. Where the prosecution is able, by advancing an array of experts, to identify a non-accidental injury and the defence can identify no alternative cause, it is tempting to conclude that the prosecution has proved its case. Such a temptation must be resisted. In this, as in so many fields of medicine, the evidence may be insufficient to exclude

beyond reasonable doubt an unknown cause. As Cannings teaches, even where, on examination of all the evidence, every possible known cause has been excluded, the cause may still remain unknown"…….

[19]…..In my judgment, a conclusion of unknown etiology 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 Popi M (Rhesa Shipping Co SA v Edmunds; Rhesa Shipping Co SA v Fenton Insurance)** [1985] 1WLR 948 has been described as a vivid example of the burden of proof 'coming to the rescue'. See the analysis of Mostyn J in **A CC v M & F [2012] 2 FLR 939** at §18-22. In particular:-

a. The judge is not always bound to make a finding one way or the other when faced with rival hypotheses;

b. There are cases where owing to the unsatisfactory state of the evidence or otherwise, deciding on the burden of proof is the only just course to take.

c. It is wrong in principle to approach the alternative hypotheses on the basis that the court can eliminate the least probable ones one by one to be left with a hypotheses which is also objectively improbable but rendered probable for want of any other. The quality of improbability is not improved by rejection of more improbable scenarios.

d. There is no "pseudo burden" upon the [respondents] to come up with alternative explanations or prove an 'innocent' cause of death or injury, or even the presence of suspicious physical signs.

72) This approach was more recently considered by the Court of Appeal in **Re A (Children) [2018] EWCA Civ 1718** where King LJ said this:

"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".

<u>The significance of the injuries sustained prior to 72 hours after birth</u>

73) The relevant injuries are as follows:

a) Undisplaced fractures to the fourth fifth sixth and seventh right ribs, first seen on x ray at 18.01 on 20 June 2021;
b) A bruise noted to the right arm which was discovered at 11.20 am on 20 June;
c) A bruise to the right wrist on 21 June at 11.45 and
d) A linear bruise to the right arm discovered at 9.30am on 22 June.

74) The local authority's position in relation to the right rib fractures is that it is inherently improbable that they arose from some deliberate act on the part of the mother and father and inherently more likely that they arose from the application of supra-pubic pressure than that they are associated with the SPARC gene variant.

75) The fact that there was bruising in the first 72 hours of birth only came to light within these proceedings following the disclosure of the balance of the obstetric records in the week before the finding of fact hearing. Inevitably, therefore, the local authority had not up to that point taken a position in relation to them. Its closing position in relation to the bruising is that no clear or safe conclusions can be arrived at as to their origins and it would therefore be unsafe to identify a mechanism for these, but it is speculation and/or conjecture to suggest they provide tangible evidence of some impact on AD's health by reason of the SPARC gene variant.

76) It should be noted that whilst the local authority concedes that the bruising is unexplained, it contends that this is in part due to paucity of evidence as a result of lack of proper recording and/or investigation by the hospital.

77) I will explore below the reasons for the local authority ruling out the parents being implicated in this first set of injuries and how well founded is the proposition that the rib fractures were caused by supra-pubic pressure.

78) Suffice it to say at this stage that the parents do not accept the proposition that the rib fractures were birth injuries; rather they contend that they are either associated with AD's unusual presentation or should be considered to be unexplained.

79) The significance of these injuries is obvious. If the court comes to the conclusion that all or some of these injuries can be considered to be either due to an underlying medical cause or unexplained, that would have significant forensic weight in determining whether the court could go on to be satisfied that the later two sets of injuries are inflicted injuries - or otherwise attributable to failings in parental care such as rough handling. This is due to the inherent improbability of there being dual pathologies (unexplained injuries in the first 72 hours of life followed by inflicted injuries in the two subsequent episodes) particularly in the light of:

a) the three sets of injuries are relatively close together in time, and
b) the similarities between the nature of the injuries- in particular the rib fractures but also the bruising.

80) It is the parents' case that the "dual pathology" theory becomes all the more inherently unlikely when considered alongside:

a) the expert evidence about AD's unusual radiological presentation;
b) The expert evidence about AD's unusual genetic presentation;
c) The relatively narrow scope for both the 2nd and 3rd set of injuries to be inflicted by either by just the mother or by just the father or indeed by just one other family member such that the inevitable conclusion would be that AD was unlucky enough to have two abusive parents (or family member); and
d) the full canvas of evidence in relation to the parents parenting qualities.

The Obstetric evidence

81) I heard from NLD, who was the obstetric specialist registrar at AD's birth and from ACD who was the consultant obstetrician.
82) Both of them confirmed, as set out above, the manoeuvres which each had undertaken following it becoming clear that there was a shoulder dystocia.
83) The initial manoeuvres undertaken by NLD assisted by the midwives were to place the mother in the McRoberts position with her legs bent towards her chest and applying supra-pubic pressure. These were described by NLD as simple manoeuvres designed to free up the pelvic space.
84) Those measures having been unsuccessful to free the shoulder, she commenced the internal manoeuvres and called for additional assistance. ACD attended and took over the internal manoeuvres, the second of which was successful.
85) The first manoeuvre was to trace along the left arm and attempt to flex it. There was insufficient space for ACD to do this and so he performed the woods screw. This involved putting two fingers on the back of the shoulder and trying to rotate it. This was successful in freeing the shoulder.
86) Once the shoulders were released, fingers were placed under AD's arm pits and there was a gentle pull to deliver the baby.
87) Both of the obstetricians were aware of the rarity of rib fractures during the birth process.
88) Neither could think of anything that was done that could possibly have caused compressive pressure to the chest or any unusual distribution of pressures.
89) ACD in particular was helpful in explaining the position of the baby which meant that AD's right ribs were anterior and were flat against the abdomen, lying against

soft structures. Neither he nor NLD had any reason to put their hand any were near the right ribs.

90) He noted that the ribs would pass over the pelvic bone, but he would not expect that to cause rib fractures.

91) In addition, neither could recollect anything that would cause either the bruise to the right arm which was discovered at 11.20 am the following day or the bruise to the right wrist. ACD told me clearly that he didn't grasp the right wrist; the manoeuvres that he did concerned the shoulders or upper parts of the left arm as well as pulling under both arm pits.

92) ACD was asked about the possibility of the supra-pubic pressure causing the rib fractures. He said that it was "the only thing he could think of as possible" but he then effectively discounted it. However, his answer that it was even a possibility should be interpreted with caution given that he was not a witness to this manoeuvre.

93) NLD told me that she was aware of the risk of shoulder dystocia due to the size of the baby and the mother's gestational diabetes. She was essentially following normal procedures in conducting the simple manoeuvres before calling for back up when they didn't work.

94) NLD observed the midwife perform supra pubic pressure on the mother. There was nothing abnormal in how it was performed. This was not a compression on the baby's ribs but on the mother's abdomen. AD's ribs were free; they were not close to the mother's pelvic bone and during the delivery itself they were protected by her arms,

95) ACD told me that he didn't regard this delivery as being particularly out of the ordinary. The freeing of the shoulder in particular took two minutes; although that was a busy two minutes, it was not by any means exceptional, being neither particularly prolonged nor, from his point of view, with his experience of assisting with less straightforward births, particularly difficult.

96) Both doctors gave their evidence in a clear and professional manner, free of any suggestion of defensiveness. Their evidence was essentially unchallenged and I accept it.

97) The evidence of the obstetricians immediately cast very significant doubt on the working assumption which prevailed for much of this case, namely that the first set of injuries, in particular the rib fractures, were birth injuries.

Expert evidence

The radiological evidence

98) Dr Olsen in his written evidence noted a number of abnormalities in respect of AD's radiological presentation. The first of these factors were her abnormal fracture healing rates, which he described as strikingly unusual. On 2 August 2021 the date of the latest chest x ray available to him, the callus remained fairly soft and the fracture lines remained clearly visible. He described this as very unusual for fractures which were 6 weeks old and which would be expected to have healed more or less completely.

99) The second feature (which he acknowledged to be much more subjective and not diagnostic in nature) was his view that AD's long bones and ribs appeared slender or gracile radiologically.

100) The third factor was that birth related rib fractures are extremely rare and would not normally result from shoulder dystocia. (Other witnesses told me that the literature suggested that when they did result from shoulder dystocia they would normally be accompanied by a clavicle fracture which was absent here). The logical consequence must be that AD's right sided fib fractures represented something highly unusual which needs explaining. One possible explanation is that the bones had insufficient fracturing resistance.

101) These three factors provided three "red flags" for underlying bone disorder.

102) In his written evidence he provisionally concluded (waiting to hear from other experts) that "I cannot diagnose/name any underling bone abnormality since there is no specific diagnostic sign in the radiological material. But I would feel very uncomfortable with assuming the bones were entirely normal" and "I would be reluctant to put forward any view in respect of the level of force that had been required to cause each of the three sets of fractures".

103) The information from the obstetric records caused Dr Olsen to confirm those opinions. For him the cause of the early fractures remained unknown, and he acknowledged the possibility that the fractures resulted from an as yet unknown medical cause.

The genetic evidence

104) AD has an abnormal genetic presentation (the heterozygous SPARC gene) inherited from her father. Dr Price highlighted how extremely rare, indeed unique,

AD's particular variant of the Sparc gene is. Applying her knowledge of clinical genetics, she was unable to say that the alteration in one gene only (known as a recessive) would be likely to produce a clinical effect. For that she would expect there to be alterations in both genes such that the patient would not be a mere carrier of one mutation. Because the Sparc gene is involved in the production of collagen, the 'double defect' would be likely to result in bone fragility and quite possibly a propensity to bruise easily. However, because AD's SPARC gene variant is heterozygous, Dr Price would be unable to rely on it for a diagnosis of OI or some related abnormality.

105) However, because of the unusual features of AD's presentation in hospital, Dr Price's opinion was that the cause of the initial fractures is unknown. She accepted that there were at least 3 unusual aspects to AD's presentation: (1) a number of fractures within a very short period followed by a period of no fractures, (2) abnormal presentation on the X-rays/delayed healing response and (3) the apparent exclusion of the possibility of fractures during birth (if that was the court's conclusion on the obstetric evidence).

106) She agreed that clinical genetics is a dynamic field and that to take the example of OI, this had expanded to 21 types from the original classification of 4 as a better understanding of genetics had developed over time. She agreed that AD's presentation might be an outlier which was yet to be understood, which is why she regarded the totality of the fractures as unexplained. She said it was necessary to keep an open mind in this situation. She regarded AD's presentation as worthy of clinical follow up with the local genetics service at 18 months to check her bone development. She did not exclude the possibility that a diagnosis may emerge.

107) In overall terms, Dr Price accepted that the bruising must also remain unexplained and noted that any deficiency in the production of collagen would have an effect on tissue development which could lead to bruising from normal handling. Her patients with OI sustained fractures and easy bruising on normal handling and it was plausible that it could include normal handling such as swaddling a child.

Endocrinology

108) Dr Allgrove emphasised that the single gene mutation that AD suffers from is 'vanishingly rare' as he put it. He emphasised that very little was known about a

single Sparc gene mutation. He confirmed that the Sparc gene was concerned with the production of collagen and the calcification process in bones and said that it might (emphasising the word 'might') give rise to an explanation of the delayed healing process. Beyond that it was very difficult to say very much. He agreed that the Father's low DEXA scan result was within range but at the bottom end and that made it difficult for him to express any opinion on causation without exercising caution. He did not consider that the prospects of the Sparc gene mutation giving rise to bruising as being very likely. Taken as a whole it is right to characterize Dr Allgrove as being highly cautious, not to say sceptical that the SPARC gene variant could account for the totality of AD's injuries, but a possibility that he could not exclude entirely. He did agree that it remained possible that there was a pre-disposition to fracture on normal handling and he did note that bone strength continued to develop in the neonatal period such that it was not necessarily surprising that there had been no further known fracture events.

Neonatal evidence

109) In her written evidence, the neonatal expert, Dr Johnson initially accepted that on balance the right sided rib fractures were likely to have occurred at birth, albeit she noted the lack of contemporaneous records at that time. By the time that she gave her oral evidence, and in the light of the obstetric records and evidence, she had moved on to say that it was simply impossible to say what the cause of the first set of rib fractures was insofar as the hypotheses included the possibility of a birth injury, alternatively an inflicted injury in the first few hours after birth. Both were theoretically possible, but would be regarded as incredibly rare and it was impossible to say which of the two was more likely. She agreed that both bone development and connective structure development continued after birth in the neonatal period. She too considered that if there was an underlying abnormality, fractures might occur on normal handling including on swaddling a child.

The haematological evidence

110) The evidence of Dr Keenan was highly useful in ruling out blood disorders as a cause of injury; however by the time of the final hearing his evidence was largely uncontentious. He confirmed that the absence of any haematological disease or

clotting disorder had nothing to do with whether there was a connective tissue disorder which might explain the latter. The two questions were unconnected and he deferred on the latter.

The paediatric evidence

111) Dr Birch told the court that she considered the notion of birth related fractures was unlikely but not impossible taking into account the very difficult delivery. She was of the view that the possibility of a genetic or metabolic abnormality leading to the bones being more prone to fracture had been all but excluded and that there was no credible evidence that that was the case. (I have to treat this opinion with some caution in the light of the evidence of Dr Price which followed). Her view that the only two possible explanations were some form of non-accidental injury and a birth related injury. She thought the most likely of the two was that this was a non-accidental injury. This view was informed partly by the fact that, having looked at obstetric notes and procedures done during delivery, she concluded that there didn't seem to have been any manoeuvre that occurred that put pressure on ribs (as was subsequently confirmed by the obstetricians) and partly informed by the fact that the child presented some weeks later with similar injuries which were unexplained and which she considered to be more likely than not non- accidental injuries.

112) Her rationale was essentially that if the later injuries were non-accidental in nature that would increase the likelihood that the first set of injuries were in some way non- accidentally inflicted. That was her favoured unifying view to explain all the injuries. She was pressed on this by leading counsel for the parents but remarked that the three sets of fractures were sufficiently similar to have a similar cause and the most likely of all the causes was non- accidental in nature. She was pressed as to what her conclusion would be if it was found that the initial fractures were genuinely unexplained, and she indicated that as far as she was concerned it was for the judge to decide observing that the only reason that the injuries remain unexplained is that no one has explained it and that this justified 'keeping in mind' non-accidental injury.

The factual evidence in relation to the first 72 hours.

113) The local authority in its written opening and in its closing submissions conceded that this is inherently unlikely that the injuries suffered in the first 72 hours were inflicted non-accidental injuries. In the light of the difference of opinion between the experts, it is worth considering this further.

114) The mother underwent a lengthy labour. Following AD's birth, the mother required stitching, surgery and blood transfusions. It is conceded by the local authority that her physical state was such that she barely had the strength to hold AD let alone compress her chest with such force as to cause rib fractures.

115) In relation to father, his position is clearly different. However, the nature of the monitoring of AD and the mother and the support being given to the father following birth was such that he was under almost constant scrutiny on the ward in the period of something slightly under 22 hours from AD's birth timed at 20.42 on 19 June until the x rays were taken which showed the rib fractures timed at 18.01 on 20 June (although not picked up until later).

116) I have already referred to the fact that there is a very useful timeline document. I do not intend to set out all the details of this timeline, but I summarise the following factors:

117) As would be expected the immediate post-birth period was very busy. AD's AGPAR score at 1 minute was 3 and she required some assistance with establishing normal respiration. The mother was given pre-surgery checks and taken to surgery at 21.40, so remained in the delivery room until then. A full early new-born examination took place between 22.00 and 22.50 which included an unsuccessful cannulation and bloods taken for septic screen. It seems likely that there would be very significant monitoring in this early period.

118) Thereafter, AD remained on the delivery ward with the father until they were re-joined by the mother around midnight. AD was defined as an at risk infant due to the risk of sepsis and indeed she was being given antibiotics intravenously. Consequently, it is noted that the protocol was that there were to be observations at 1 hour and then every 2 hours for the next 12 hours.

119) Although, on her return, the mother was assisted to hold AD for part of this period, it was the father that was doing the majority of the care. It was the evidence of the parents that the midwives were assisting the father with the immediate post birth cares and feeding of AD; this is supported by the notes in the midwife records as to successful and unsuccessful feeds. It was the evidence of the mother that the nurse

stayed with them pretty much the whole night. I find this evidence entirely plausible given the fact that the father was a young first- time father, the difficult birth and its consequences, the fact that AD was defined as an at-risk infant and the mother being too unwell to care for AD; it is supported by the contemporaneous records.

120) It seems to me to be highly likely that the father was being given substantial support and therefore also substantial monitoring was, as a result if not by intention, taking place.

121) The mother was the subject of very regular observations. She had lost significant blood and had bakri balloons inserted as well as being stitched. She was given a blood transfusion when back on the ward and intravenous antibiotics. Again, this necessitated regular observations and as the mother was on the delivery ward with the father and AD from midnight of the first day, the result is that from midnight of the first day until the first set of x rays were done the observations on mother contributed to AD being highly visible to professionals.

122) Moreover, it was the father who first noticed the possibility of an issue with AD's ribs and raised it with professionals. Although the evidence suggested that he raised it earlier in the day, he sent a message on Facebook at 18.56 hours on the 20.06.21 that he could feel 'clicking and popping' in AD's back when he held her and he told the midwife who felt it too and was consulting the "baby doctor". I note that it was accepted by the medical experts that rib fractures are hard to detect and the descriptions of crackling or clicking ribs were likely to be the moment of discovery and not necessarily the moment after causation.

123) I have already said that the first set of x rays were timed at 18.01 on 20 June 2021; this puts an outside time limit on the period in which she could have sustained fractures although in truth one could probably take that back to the time when she was taken to the main x-ray unit at 17.35. The rib fractures were not immediately identified but were identified at 19.35 following a Neonatal review. Thereafter at 20.04 on 20 June AD was taken straight to NICU the intensive care ward where she remained until she was discharged to the post-natal ward at 17.00 on 21 June 2021.

124) During the period prior to the discovery of the fractures the father was acting in every respect as a proud father, taking pictures, keeping his family informed as to where she was up to with her feeds via Facebook messages.

125) It was also conceded by the local authority that the father being so cautious that he messaged his mother to check if it was safe to use baby wipes on babies is

somewhat at odds with a father who within hours of her birth and whilst monitored on a busy ward, would injure AD by applying very significant compressive force to her chest.

126) I accept those factual concessions as appropriate and the overall concession that the parents are inherently unlikely to have caused the rib fractures or the first bruise in the first 22 hours as an appropriate one. I would go further and say that on the evidence it is inherently extremely unlikely that they did so.

127) Finally there is the possibility of the rib fractures being non-accidental injuries inflicted by a medical professional; one the face of it this is highly unlikely for two reasons, firstly that AD was largely either in the care of or observed by her parents in the first 24 hours or undergoing procedures which would mean that more than one professional was present; secondly, it seems vanishingly unlikely that AD suffered inflicted fractures at the hand of a professional in the first 24 hours of life only to suffer two further sets of fractures in the next six weeks. Nevertheless, I do accept the general proposition made by Mr Vine QC that it is important not to privilege the handling of clinicians in hospital against that of the parents or family members which is why I mention it as a possibility at this stage, if only to discount it.

128) In relation to the bruising discovered in the first 72 hours, similar issues arise.

129) The obstetricians were unable to identify how any manoeuvre undertaken by them could possibly lead to bruising. As set out above neither could recollect anything that would cause either the linear bruise to the right arm which was discovered at 11.20 am the following day or the bruise to the right wrist. ACD told me clearly that he didn't grasp the right wrist; the manoeuvres that he did concerned the shoulders or upper parts of the left arm as well as pulling under both arm pits.

130) The lack of opportunity for either of the parents to cause the first bruise noted on 20 June at 11.20 has already been commented on.

131) The opportunity for the parents to cause the second bruise to the right wrist noted on 21 June at 11.45 is extremely limited. By that stage AD had been on the NICU for over 15 hours and was merely being visited by the parents. Moreover, the father had gone home the previous night, with the mother being on the post-natal ward.

132) Given that the father was not able to stay overnight after the first night the father's opportunity in particular to cause the third bruise, discovered at 9.30am on 22

June prior to visiting hours starting was very limited indeed (my caution here relates purely to the acknowledged difficulty in aging bruises).

133) Absolutely no concerns were raised in relation to the parents care of the baby, demeanour or anything else whilst in hospital in this period.

134) Absolutely no concerns were raised as to any unusual pain response from AD when in the care of the parents.

135) The lack of any concern expressed by a professional militates against the suggestion that these bruises could be caused by the parents (save to the extent that they may have been caused by normal handling if there was an underlying condition).

136) It is correct to say that, evidentially, difficulties have been created by the fact that the fact of bruising was not treated as a safeguarding issue at the time. There is a lack of any proper description or drawing of any of the three bruises although a haematological enquiry was ordered and the suspicion of OI was raised.

137) The approach taken underlines the fact that no suspicion at all was thrown on the parents by these bruises.

138) Mr Vine QC in his submissions suggests that the local authority's case – that it would be conjecture to seek to establish a cause for the bruising in hospital – does not engage with the probability that these bruises were sustained through normal handling in the hospital; in all probability in more than one instance by hospital clinicians.

139) I agree with that submission, although I would comment that if the bruising was caused by normal handling, that brings in to play some underlying disposition. To that extent – in terms of determining threshold – it matters not whether they were caused by normal handling by the parents or normal handling by clinicians.

My conclusions in relation to the first set of injuries

140) Each piece of evidence needs to be considered alongside other evidence.

141) The evidence of experts is extremely important. Likewise, the evidence of carers and of carers and clinicians is equally so.

142) I have referred to the importance that the first set of injuries have assumed.

143) Each of the experts were asked to comment, to the extent that they felt able to do so, as part of their oral evidence on the issue of the first set of injuries. All of them

were aware that I am faced with a range of unlikely possibilities for these injuries, particularly in relation to the rib injuries but also in relation to the bruising.

144) Notwithstanding that it was not a finding sought by the local authority, I have considered it important to engage with the possibility that the injuries were non-accidental and caused by the parents, the explanation considered most likely by Dr Birch. However, for the reasons I have set out above, my assessment of the totality of the evidence but in particular the level of monitoring which the parents were under makes me consider non-accidental injury by them to be inherently highly unlikely and the same applies to non-accidental injury by clinicians.

145) I do consider that there is some force in the criticisms made by counsel for the parents and the child as to the way in which Dr Birch approached the issue of causation, which does seem to me to come dangerously close to putting a "pseudo-burden upon a parent to come up with explanations for events" which Mostyn J warned about in **Lancashire v R** - particularly when combined with the other unusual features of the case.

146) Whilst I am satisfied that Dr Birch was conscientiously giving her genuine professional opinion, I remind myself of the case law set out above and the different roles of the expert and the court and that I am not bound to accept the expert opinion of any particular expert, however eminent. Indeed that was explicitly recognised by Dr Birch herself.

147) I also consider that she was hampered to an extent by giving evidence prior to the obstetricians and by the limited opportunity presented by the late emergence of the full obstetric records to study closely the contemporaneous evidence in terms of the limited opportunities open to the parents to cause any of the first set of injuries.

148) The second possibility is that the first set of injuries were in fact birth injuries. I have already surveyed the evidence of the obstetricians. I found their evidence to be compelling. Whilst I cannot entirely rule out the possibility that the injuries were suffered at birth, it is a wholly exceptional proposition that a child without any bone fragility has suffered rib fractures during the birth process when no mechanism for causing compressive pressure has been identified. This is an inherently unlikely explanation.

149) Within the closing submissions the local authority urged upon me that I can conclude that it is more likely that the injuries were caused by supra-pubic pressure than being associated with the SPARC variant. However, I have accepted the

unchallenged evidence of the obstetricians that they are unable to identify any manoeuvre which would cause compressive force to the chest. To the extent that ACD was a little more diffident about ruling out supra-pubic pressure as a cause, it seems to me that that was probably due to the fact that he was not present when that intervention was taking place. As he was giving evidence as a witness of fact, not an expert, it would have gone rather beyond his role to be categorical about that aspect of the evidence, in relation to which he was relying on his past experience combined with his knowledge about the rarity of rib fractures being caused in birth. Taking his evidence as a whole, I am of the view that he considered it to be highly unlikely that supra-pubic pressure was the cause of the rib fractures.

150) NLD, who was present when the supra-pubic pressure was applied, was also clear that she considered it to be a highly unlikely cause of rib fractures; she saw nothing unusual taking place on this occasion.

151) The possibility of the fractures being caused by supra-pubic pressure must be considered against a background that rib fractures caused by the birth process are extremely rare events; as I understand it, no more than about a dozen in total have ever been described in the medical literature (it is accepted that there is a degree of overlap) with seven being associated with healthy babies with shoulder dystocia – often combined with a fractured clavicle. None, as I understand it, has been described as specifically due to supra-pubic pressure. Supra-pubic pressure is a manoeuvre which is routinely used in cases of shoulder dystocia and during which the infant's body is free above the mother's pubic bone. I consider that Mr Vine QC was right to call this possibility no more than conjecture and largely contrary to the evidence of the obstetric witnesses.

152) I note the opinion of Dr Olsen that rib fractures are sufficiently rare to give rise to the "logical consequence that AD's right sided rib fractures represent something highly unusual which needs explaining. One possible explanation is of course that that the bones had insufficient fracturing resistance."

153) This was summed up pithily by Miss Lewis QC when she said in her closing submissions that if supra-pubic pressure was the proximate cause of the rib fractures, it simply reinforces the likelihood that AD must be seen as an outlier.

154) It seems to me that in considering whether to accept the local authority's proposition that supra-pubic pressure is a more likely cause of the rib fractures than any association with the SPARC variant, I should bear in mind the warning from **R v**

Henderson and others set out above that the court must resist the temptation to believe that it is always possible to identify the cause of injury to the child. I also note the guidance given by Mostyn J in **A CC v M & F [2012] 2 FLR 939** in particular that it is wrong in principle to approach the alternative hypotheses on the basis that the court can eliminate the least probable ones one by one to be left with a hypothesis which is also objectively improbable but rendered probable for want of any other. The quality of improbability is not improved by rejection of more improbable scenarios.

155) In any event it seems to me that the preponderance of the medical evidence was that a cause of unknown aetiology could *not* be excluded.

156) In conclusion, ***absent*** some underlying fragility, I am left with a range of highly unlikely possibilities for the causation of the injuries caused with in the first 72 hours of birth: birth injury, non-accidental injury with parents as perpetrators, non-accidental injury with professionals as perpetrators.

157) The alternative is of course that AD's injuries had at their root some underlying condition, resulting in injury being caused either during the birth process when a normal child would have been uninjured and/or by normal handling by the parents or professionals.

158) The parents, through their counsel, submit that I can make a determination about the likelihood of some underlying cause associated with the SPARC variant. The difficulty with that submission, it seems to me, is in the highly nuanced nature of the expert evidence. Despite the unusual features in the case (the slender appearances of the bones and the strikingly unusual healing pattern of the bones, the abnormal genetic presentation) each of the experts dealing with the evidence from the point of view of their respective fields impressed upon me that none of these features are diagnostic in nature. The state of knowledge at this point of time is that none of the medical experts is able to put forward a unifying theory which explains all of AD's injuries.

159) I remind myself of the case law which indicates that sometimes the court cannot make a decision as to the causation of a particular event and where that is the case it should say so clearly. As Hedley J made clear in **Re R (A child) 2011 EWHC 1715 (Fam)** "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".

160) Mr Bagchi QC for the child put it like this:

"Taken as a whole therefore, the court could be forgiven for coming to the conclusion that the clinical, forensic medical and other evidence presents a confusing and contradictory picture from which it is not easy to draw any firm conclusions about causation of any of the hospital related injuries."

161) I accept Mr Bagchi's submission on that. In relation to the first set of injuries I have come to the clear conclusion that their cause remains unknown with an as yet unknown medical aetiology being a real possibility. In legal terms these injuries should be treated as unexplained.

162) I therefore have to consider the extent to which that decision feeds into the findings the local authority seek. In Mr Bagchi's words "We also submit that it is logical that these clear doubts about the aetiology of the earlier injuries should weigh heavily in the overall assessment of the totality of the evidence (medical and otherwise) about the subsequent injuries. In simple terms, if the earlier injuries are genuinely unexplained, why can it not be the case that from the subsequent injuries which were similar in nature not also be unexplained?"

163) I agree with the thrust of that submission. I also conclude that this is a case in which the wide canvas of evidence becomes all the more important.

The evidence of the social worker

164) A notable part of the evidence in this case was the glowing description that the social worker LP gave of the parenting skills of the mother in particular but to a large extent of both parents. In respect of the mother the opportunities for the mother to develop her parenting qualities and for LP to observe them were greater. The mother was having contact three times a week over 10 months of contact and LP had been the social worker for all of that time. In addition, the mother spent a full day with LP in January 2022 when they went to London for blood tests. LP spoke warmly of the mothers emotionally attuned care; she said that the mother was "fantastic" with AD.

165) The father has been both working and going to college over this period which has meant that he has not been able to attend contact as frequently. It is unsurprising in these circumstances that the descriptions of him were not in the same exceptional terms as those about the mother. Nevertheless, they were positive. The father was

described as less confident than the mother, but contact was of good quality and no issues had ever been raised by the contact supervisor.

166) I consider the professional evidence of the social worker to be a very significant part of the canvas of evidence. It is supported by the evidence of the community midwife that there were no concerns about the mother's handling of AD on either the home visit on 26 June or the home visit on 10 July 2021.

The evidence of the parents and family members

167) It is a feature of a fact-finding hearing that the court takes in a wide canvas of evidence, expert, professional, evidence from the parents, the wide family and documentary evidence. The evidence of the parents is crucial however and it is necessary for the court to form a view of their credibility, having regard to the evidence as a whole.

168) Having cautioned myself against over-reliance on subjective impressions of the parents in the witness box, I do observe that the mother in particular, and to a somewhat lesser extent the father appeared to me to be young people of some maturity, treating the court proceedings with seriousness, and doing their best to help the court. This is in keeping with the approach that they have taken throughout the proceedings when they have been assiduous in giving instructions, attending court and attending contact.

169) The mother was a confident witness, whereas the father was rather less so and on occasion was a poor historian.

170) In many ways these parents are not typical of the type of young parent that the courts most commonly see in care proceedings in the family court. But for the fact of the injuries, these are not young parents who would come before the family court. The court must be alert to the dangers of stereotyping; babies can be injured by parents from all classes of society and the fact that the parents are industrious and polite does not preclude the possibility of them being perpetrators of non-accidental injury.

171) Nevertheless, it is relevant that here is a complete absence of the sort of wider social problems which form the basis of many a threshold document. There is no evidence whatsoever of domestic abuse, anger management issues, of mental health issues, nor save to the very limited extent that I deal with it below, of substance abuse.

172) The father accepted the use of cannabis on an occasional basis; it appeared to be for him a social activity when at his friends' homes. There is no evidence that he ever used it when he was caring for AD or that he suffered from any form of addiction.

173) It is also of relevance that both parents had a strong background of family support behind them. Indeed, it is one of the ironies of the case that AD was placed in foster care as a result of so many members being initially implicated in her care during the relevant period, not because the parents were not doing the lion's share, but rather because there were a large number of family members offering support.

174) In the phrase used by Miss Lewis QC the overall effect of this family support was to make AD a "highly visible" baby.

175) These are young people who did not plan to have a baby, but, in my judgment, they embraced the challenge and welcomed parenthood. The mother had planned to go to university and, unsurprisingly, was cross-examined by counsel for the local authority as to whether she resented the change of circumstances arising out of her late discovery of pregnancy. The mother told me that she realised that maybe "this is what I was meant to be". I saw no reason to doubt the sincerity of that evidence.

176) For the father too, the pregnancy is unplanned, but his claim to have embraced fatherhood is borne out by his actions, his attendance at hospital throughout the long labour process. his caring for the child in the immediate aftermath, regular visiting thereafter, contributions to child-care when AD came home and eventually taking over the child-care when required to do so as part of the safety plan.

177) There was no sense from him or any of the family witnesses of his resenting this change in his fortunes. On the contrary, there was some slight criticism of him by LC his brother's partner for being unwilling to accept the help of family members one occasion.

178) The telephone analysis has been scrutinised for anything else which might throw light on the dynamics of the parental and wider familial relationships. The records have been of assistance to me in building up a picture of the timeline and the family dynamics. However, I accept the submissions made on behalf of the parents that they were also helpful for what they did not show. With the partial exception of the father's movements on 16 July, which I deal with below, there was a complete absence of any suggestion of either knowledge as to how AD suffered her injuries or of any sort of cover up. Indeed, the submission of Mr Vine QC that the mothers

google searches ("unexplained fractures", "parents accused and "wrongly accused of NAI") is compatible with innocence has some force.

179) Mr Bagchi QC submitted there are three significant areas of factual evidence which I will have to decide. I agree with the instances he has identified, but I consider that I will also need to consider whether the overall pattern of care revealed by the witness evidence of the family is one that I can accept.

The events of July 16 2021

180) The father tested positive for covid in July 2021 and was self-isolating in accordance with the rules from 10 July for 10 days. Accordingly, the mother took over the totality of AD's care from that date save for some assistance given by maternal grandmother (but not constituting exclusive care).

181) In their initial accounts to the court and to the police, the parents claimed that the father had no contact at all with AD during this period.

182) It subsequently emerged, largely as a result of phone messages emerging from the family which refer to the father answering his sisters snapchat at 4.30am, that the father had in fact gone over to the mother's house in the early hours of 16 July, when she had called him, for an hour or so; her evidence is that she asked him to do so because she was struggling with AD and wanted his emotional support. Thus, it became clear that they had initially lied about this matter.

183) Since admitting to the lie, the parents have consistently said that they initially lied about the father being present at the mother's house in the early hours of the morning because the father had attended there in breach of the Covid rules in that he was supposed to be self-isolating. That would have potentially laid himself open to criminal proceedings. The parents say that when he attended he did not go anywhere near AD but remained in the conservatory. This is a situation in which the court clearly needs to give itself a Lucas direction as to the reasons for the lie and whether it can be taken as corroboration of guilt

184) On behalf of the local authority, it is contended that they have given an incomplete account and the likelihood is that they are lying to conceal how AD was injured.

185) In and of itself, I do not find it an implausible scenario that two law-abiding young people would be afraid of the consequences of admitting to a breach of the

Covid Rules, notwithstanding the encouragement that they were given to be quite open about these matters. They did eventually admit to the father being present and so I have to consider whether they are now fully telling the truth or, as the local authority would submit, continuing to deceive the court.

186) I do accept that the father in particular was a poor historian in relation to this incident; he was not able to give a clear account of many matters including when he went over, how he got there, how long he stayed, when he got back, what feeds took place.

187) For the mother too there were inconsistencies between her police interview and her statements, in particular the mother twice said in her police interview that there were red marks on AD which she saw during her 2am feed which would mean she had discovered them as marks prior to the father's arrival even if it was not until the morning that they had developed into bruises.

188) The broad essentials of her struggling with the care of AD that night, with AD being colicky and sicking up her milk and not settling, and the "clicking sound" having returned have been freely admitted to by the mother from the outset.

189) It is that very account of AD being unsettled which the local authority say gives rise to the suspicion of non-accidental injury, in that the mother was struggling with AD's care. They suggest that whatever support the maternal grandmother might provide did not extend to assisting on 16 July and thus the father was called from his bed in the early hours of the morning.

190) The alternative way of looking at it is that, despite the maternal grandmother being on the scene and by all accounts fully supportive, and despite there being other family members upon whom the mother could have called for advice, there is no evidence that she did so. She chose instead to call the father. The question is why? Was it for practical help, emotional support or some other reason?

191) I am inclined to think that the answers given to the police were correct, namely that the marks were discovered at 2am. If that is right, the probability is that the mother called the father because she had already discovered the marks on AD (which were at that stage just marks and not bruises) and she wanted to discuss the marks with him and perhaps ask his advice as to what to do. It would make sense that their concern for AD would override any consideration of the Covid regulations and that they would want to discuss it in person.

192) I am not able to be satisfied as to exactly how the discussions went. It may be that they decided that the mother should wait to see what the marks looked like in the morning, and act accordingly, but I cannot be sure on that.

193) The mother wanting to speak to the father about the marks is consistent with the mother's response to the second set of injuries on 1 August when she wanted to discuss matters with her own father first before taking any action: in neither case did it in fact stop her from taking the necessary action.

194) The fact that the parents may have discussed the marks does not in my judgment mean that they were actively engaged in covering up injuring AD through rough handling.

195) If AD had already been injured by the mother, and the parents were engaged in discussing a cover up, it is surprising that the father answered his sisters snapchat at 4.30 at all, more particularly it is surprising that he would have done so in a way which would have made it clear he was at the maternal grandparent's home.

196) The possibility of either parent injuring AD through rough handling in the few hours that the father was there seems implausible. It is difficult to envisage the mother injuring AD after the support that she had called for had arrived. Moreover, if the father had injured AD in that short period, I really cannot envisage the mother covering for him in those circumstances. My strong impression of her having regard to all of the evidence is that if faced with clear evidence of that nature she would put AD's welfare before her own relationship.

197) Doing the best I can, it seems to me that their primary motive in lying was the consciousness that the father should not have been there at all due to self-isolating and that when that lie was exposed, they were worried by the appearance of admitting that the mother called the father to discuss the marks, particularly as they had not admitted to him being there earlier. In other words, I consider that their actions stemmed from a worry about the appearance of guilt rather than necessarily guilt itself.

198) The account that the father did not go anywhere near AD has to be seen in the light of the fact that he was still in his isolation period. Whilst Mr Crabtree is strictly right in saying that the mother let Covid into the house and that the conservatory was hardly a sterile environment, in the light of the publicly available information about social distancing at that time, the parents could be forgiven for thinking that by remaining in the conservatory, they would minimise any risk to AD.

199) I am of the view that a planned cover up is inconsistent with what the parents – particularly the mother – did next: which was - within a few hours - to call her midwife at 8.45 am and on her advice take AD to A and E where her injuries were noted by a professional.

200) In short, I have concluded that notwithstanding we now know that the parents lied about the father presence at the home of the maternal grandparents that morning, and, in my judgment are continuing to be less than frank about the motivation for calling the father, I am minded to think that they are telling the truth in that he did not undertake any care for that AD that night. I am able to conclude therefore that the lie did not relate to a material fact, namely either the infliction of injuries or the covering up of injuries of AD. Accordingly, the lie cannot be said to be in any way corroborative of guilt.

The events of 2nd August 2021

201) I find the situation in relation to the 2nd August rather more easy to determine.

202) JD2 arrived to find the father having returned back from taking AD for a walk, He had just noticed some marks on AD's face in the same place as those found previously and had pointed them out to JD2.

203) I accept the evidence of JD2 that the father floated the idea of her saying that she had arrived earlier than she had, but he swiftly backed down when she dismissed the idea out of hand. I do not necessarily consider that fleeting thoughts of this nature, in the context of an appreciation of the consequences of a further set of injuries being discovered are necessarily indicative of guilt. I accept that panic may have played a part.

204) The mother arrived upon the scene having completed her police interview.

205) There was then a period in which JD2 was speaking to the mother and encouraging her to take AD to children's services. The mother wanted to speak to her father first and called him to come down which he did.

206) I found JB to be a witness of truth, albeit probably mistaken as to the timings of his movements. In his oral evidence he believed he arrived in the early afternoon. I am of the view that JD2 was probably the more accurate historian in terms of the timeline of that Sunday afternoon, and in particularly, when the mother's father JB arrived at the property. JD2's text to LC timed at 17.54 to the effect that JB was here "now" was suggestive of him having just arrived. The probability is that JD2 is more

accurate because she is assisted by the reference in her text message which I have just referred to - and also and from her clear recollection that she gave her children their tea when she was there.

207) I accept that there was discussion between the mother and JD2 and then between the mother and maternal grandfather about what to do next. The mother was very clear to me in evidence that when speaking to JD2 she was resisting calling children's services only in relation to timing, that is that she wanted to discuss matters with her father first, a point that JD2 now accepts. It was entirely natural for her to want his support, as she too understood the consequences of the discovery of the second set of injuries.

208) Further I am minded to agree with the submissions that JD2 had either misinterpreted or over interpreted the maternal grandfather's dismay at the manifestation of further injuries and it is this which is playing out in the sequence of messages between her and LC that afternoon. As JD2 conceded, what she thought she heard was contradicted by her direct conversation which she had with the maternal grandfather later and her knowledge that he did indeed call children's services.

209) Whatever fleeting thoughts passed through the mother's mind and whatever comments may or may not have been made by JB, it is appropriate to judge them primarily by what they decided to do and what they did. Following JB's arrival, after some discussion, he sought to make contact with the social worker and EDT on the mother's behalf; unsurprisingly, given that it was a Sunday, he did not manage to make contact. In those circumstances, given the timing of the appointment with the physiotherapist early the next morning, it was wholly appropriate for them to decide to wait until then in the knowledge that safeguarding process would begin - as indeed it did.

The pattern of care

210) There are many unusual features to this case. One of the unusual features arising out of the lay evidence is that the time frame for the second set of injuries is when AD was being cared for predominantly by her mother and the time frame for the third set of injuries is when AD was being cared for predominantly by her father.

211) Upon discharge from hospital on 25 June, AD was taken by mother to the home of the maternal grandmother, where she was living. The father was on paternity

leave at this time and shared in the care. From the end of his paternity leave on 4 July, he was mostly coming round in the evenings and at weekends.

212) AD was in the care of paternal grandmother from 5 July overnight to give mother and father a break.

213) AD was also cared for by JD2 overnight from 8 July.

214) From 10 July father had to self -isolate with Covid for 10 days.

215) AD was then in mother's sole care save for a short time when she was in the care of the maternal grandmother on 15 July – but with mother in the house.

216) The maternal grandmother reports no sign of injury at 8pm on 15 July.

217) AD was then in her mother's care from the evening of 15 July to 16 July save that we now know that the father came round in the early hours of the morning for an hour or two.

218) Given that the time frame for the left sided rib fractures was up to 14 days, it remains a technical possibility that the father could have caused the fractures, but it was all but impossible for him to have caused the bruising to AD which was present on 16 July - unless he did so in those few short hours in the presence of the mother (when both parents say he did not touch AD due to having Covid). I have already found that that did not happen.

219) AD is largely in the care of CB in hospital due to the mother not being allowed to see AD save under supervision and the father self-isolating.

220) Following the discharge of AD from hospital on 22 July, the mother is only allowed to see AD under supervision; the father and paternal grandmother had assumed the care of AD under the safety plan; the father had by that stage become free of his self-isolation.

221) Paternal grandmother looks after AD when father goes to work until 29 July.

222) Between 29 July and 1 August, JD3 (the father's brother) and his partner LC move into the paternal grandmother's home with their children to assist father and to assist with overseeing the mother's contact while paternal grandmother is on holiday,

223) The third set of injuries is discovered by the father in the morning of 1 August when the mother had not had unsupervised contact.

224) It therefore follows that unless the family members are all giving false histories, the mother would have had no opportunity to be responsible for the third set of injuries.

225) In this case I found all of the family members from whom I heard fundamentally credible. They all have their different perspectives, but I did not consider that any of them would have covered up for the parents to allow one or both of them to escape responsibility for abusing AD. That conclusion extends to JB, the paternal grandmother, SG, LC and JD2. There are other family members from whom I have not heard because their evidence has not been challenged. Whilst I have not had the same opportunity to assess their credibility, there is no reason for me to doubt their accounts.

226) It also follows that there are a large number of people (including clinicians) who would have had the strict opportunity to have inflicted one or more injuries, but no one including the parents (once my factual findings have been factored in) who could have inflicted both sets of injuries.

227) For the avoidance of doubt, I should say that there is no one else against whom a positive case is raised of there being a ”real possibility” that they inflicted any injuries.

Observations of the father

228) Opinions were expressed about father by the female family members – LC, SG in particular and, to an extent, JD2 - which may on one view suggest a propensity on his behalf to be ‘heavy handed’ with AD. In my judgment it is important to bear in mind that they were all aware that AD had suffered rib fractures and were all concerned for her welfare and following the second set of injuries, they were aware of both the further rib fractures and the bruises. It is unsurprising that the more experienced parents – in particular mothers – might regard themselves as being in a position to offer advice and guidance to the young mother and father in this case – and perhaps there was a particular tendency to think that the father required guidance.

229) LC did express dismay about what she considered the over-vigorous approach to the baby massage technique of leg cycling in circumstances where she considered AD was not enjoying it; I am of the view that there was a bit of push back from the father about what he saw as too much advice, and that that was also his reason for resisting assistance on one occasion. In respect of the leg cycling, there seems to have been a difference of opinion between them as to whether this technique is one which should only be used when the baby was settled or not or whether it could be used to

help a windy or constipated baby who may be unsettled. I bear in mind the mother's unchallenged evidence that they were advised to treat AD as a normal baby.

230) It is also clear that both SG and LC reacted with dismay to the photograph showing how he held AD on his knee when she was suffering from wind. However, the parents are quite correct that this "belly hold" is something which is recommended on a number of reputable sites on the internet, and to that extent their concern that the father was holding her in an outlandish way was not warranted – it was simply not a hold which they had used themselves or come across.

231) It is clear that JD2 and SG are now of the view that they were – to an extent - looking for issues with the father's care, between the second and third set of injuries, being concerned, as they were, that the mother had assumed the burden of considering herself responsible for bruising AD. The mother had taken the view that it was the way she had winded AD which had caused the bruising and indeed it has been accepted by the medical experts as a possible mechanism – with the issue being whether it would have required rough handling or could occur with normal handling.

232) It seems to me that in this period – as later – the mother was soul-searching as to what she may have done wrong to a much greater extent than the father, including issues with ante-natal care and issues with swaddling; at this stage the primary issue was the winding posture. The female family members reacted to this by pointing out that she should not assume that she was to blame.

233) LC was not willing to make the same concession as SG and JD2 that she was looking for issues with father's care or had in any way been unfair to him; however, the fact of the matter is that neither she nor anyone else saw the father do anything which would indicate any sort of risk of injury to AD. I agree with the submissions made by the parents' counsel that anything which she did see was not of forensic significance – including the rubbing of his face against AD's. I also consider it to be of note that she was willing to leave her two little girls in the father's care for a period of two hours or so.

234) Of equal significance is the fact that no one ever saw any sort of impatience or frustration exhibited by the father - or the mother - despite AD being (unsurprisingly in the light of her healing rib fractures) at times a baby who was difficult to settle.

235) In this regard I found the evidence of JD2 particularly compelling. Whilst I did not consider any of the family witnesses to be doing anything other than seeking to assist the court to reach the truth, JD2 has had a unique perspective as a result of

the joinder of her as intervener - with the benefit of hindsight that now appears to be somewhat unnecessary; that status has, however, given her access to the wide canvass of evidence. She was party to the initial discussions between family members and her instincts were entirely protective of AD, as were those of the other family members. She is a nursery nurse who has had safeguarding training and will have had a child protection perspective as well as a family perspective. Uniquely, however, she has also had the opportunity to consider matters in the light of the developing medical evidence. She has had the opportunity to reflect upon whether her observations were coloured by her perspective that AD must have been subject to abuse; she became quite emotional in considering that point. She did not resile from her unfavourable evidence about father suggesting that she should say she had come earlier than she in fact had on 1 August, although she did now ascribe that to panic. Overall, she had a lot of opportunity to observe the father and mother caring for AD. I found her evidence about how the father interacted with AD and her perception of him as a loving father and of the mother as a loving mother are ones on which I can put considerable weight.

236) Finally, there was some cross examination in relation to various aspects of the father's humour such as the photograph of the father pretending to take a bite out of AD's head – and clearly not hurting her in any way – and the video he shared from the internet of a father holding his baby horizontally and jiggling him as if he was a machine gun. It was put to him that these were in poor taste which he accepted. Nevertheless, it does not seem to me that any of these assist me with the matters that I have to decide. Humour is highly subjective and context and age specific and these sort of jokes can easily be overinterpreted in the context of a child protection enquiry. They do not in my judgment advance the question of whether an otherwise devoted parent is likely to have injured a child.

237) Taking these factors together with all of the others I do not consider that I can be satisfied that there was any "heavy-handedness" on behalf of the father which would indicate that he had any propensity to injure AD.

Conclusions

238) This has been a difficult case. It is a case in which there has been a range of complex factors including:

a) AD's unusual radiological presentation in that :

i) AD's fracture healing responses were considered to be abnormal;

ii) AD's long bones and ribs were considered to be abnormally gracile;

b) AD's unusual genetic presentation. Her SPARC gene variant is unique and its impact as a heterozygous variant is unknown but it is a protein which "operates" in the area of bone development and connective tissue structure development. Clinical genetics is a developing field in this area and there is limited medical literature of the significance of the SPARC gene.

c) The fact that AD suffered injuries at or close to birth which I have now concluded are unexplained. The rib fractures, in particular, are highly unlikely to have been inflicted by the parents or by professionals and highly unlikely to have been birth injuries. Accordingly, an unknown medical aetiology cannot be ruled out.

d) The three bruises noted in the first 72 hours of life in circumstances where the parents' opportunity to inflict them was strictly limited by reason of which I have concluded that they are likewise unexplained, giving rise to the possibility that they came about during normal handling.

239) For the avoidance of doubt, I do not accept that the fact that I have concluded that in relation to the first set of injuries two broad categories of explanations (injuries caused by birth and inflicted injuries) are inherently unlikely leads to the conclusion that they *must* be caused by some unknown medical aetiology. It does lead to the conclusion that they *may* be caused by some unknown medical aetiology. They are therefore from the legal point of view unexplained.

240) In coming to that conclusion, I bear in mind the remarks of Mostyn J in **A CC v M & F [2012] 2 FLR 939** quoted above, namely that it is wrong in principle to approach the alternative hypotheses on the basis that the court can eliminate the least probable ones one by one to be left with a hypothesis which is also objectively improbable but rendered probable for want of any other. The quality of improbability is not improved by rejection of more improbable scenarios.

241) I considered the remarks of Mostyn J supra in the light of Mr Crabtree's submission that the most probable explanation was birth injury caused by supra-pubic pressure. I consider them to be equally applicable to the submission that a medical

cause has been proven by virtue of other explanations being considered highly improbable.

242) The preponderance of the medical evidence was that an unknown cause for the second and third injuries could not be excluded. To the extent that one expert – Dr Birch – disagreed with that I have given my reasons for coming to a different opinion. However, the medical evidence did not amount to a unifying hypothesis which explains both susceptibility to fractures and easy bruising. To the extent that both may be attributed to the SPARC variant, that is best described as a theoretical possibility. To that limited extent I accept the submission made by Mr Crabtree about the dangers of over-reliance on the SPARC gene variant as an explanation for the fractures themselves, given the caution with which Dr Price and Dr Allgrove expressed themselves.

243) For these reasons, I do not consider that I can go as far as was suggested by the parents' counsel, namely that the parents have positively proven that AD had a predisposition to the injuries sustained during the neonatal period. I do not consider that it is possible to say categorically that there is some underlying medical condition, albeit one that cannot be named, which can then be applied to the later injuries.

244) Of course, the parents do not need to prove any positive explanation for AD's injuries; it is for the local authority to prove its case that the subsequent injuries are "non-accidental" to use the catch-all term.

245) Moreover, as Miss Grocott QC submitted, non-accidental injury is not a medical diagnosis. It is a forensic hypothesis that deliberate infliction (or rough handling) is the likeliest explanation for unexplained injury in a normal infant. I have concluded that in this case it is not safe to assume that AD was a normal infant at this period in her life.

246) It is undoubtedly the case that the first set of injuries being unexplained does immediately give rise to concern about the dual pathology theory which is the inevitable consequence: namely that AD suffered injuries in the first 72 hours of life which cannot be explained but suffered two sets of injuries at the hands of her parents thereafter.

247) In my judgment, on the medical evidence alone, the local authority has not proven the *probability* of the dual pathology (that the second and third set of injuries were inflicted or otherwise due to deficient parental care) albeit dual pathology

remains a *possibility*. On that basis it remains necessary to consider the "wide canvas" of the evidence.

248) I have considered the parents denials of causing any harm to AD in the context of the wider evidential picture.

249) I have not accepted the theory that the parents are covering up a knowledge of how AD was injured in their accounts of the early hours of 16 July notwithstanding my view that they did not initially tell the full truth due to their fear of being found to be in breach of covid regulations and are, in my judgment, still not being entirely frank with the court about their discussions that day. I remind myself that the fact that they have lied about one matter does not mean that they have lied about other matters.

250) I have specifically accepted that the father did not care for AD in the early hours of 16 July 2021 and on that basis and on the length of time since he had care he could not have been responsible for all of the second set of injuries, specifically the bruising.

251) I have also accepted the accounts of the pattern of care given by the family members and in those circumstances the mother could not have been responsible for any of the third set of injuries.

252) These factual conclusions lead to the inherently unlikely possibility of three different pathologies for the three sets of injuries (birth/unexplained for the first; mother for the second; father for the third).

253) No concerns have ever been raised by anyone about the way in which the mother handled the baby.

254) Taken in context, such concerns as were raised about the way in which the father handled the baby do not go to the likelihood of him injuring her.

255) The social workers evidence is glowing about the mother's care of the baby and is positive in relation to the father.

256) The parents had a wide family support to call upon.

257) The parents had no particular social problems including substance abuse, domestic abuse, and anger management.

258) The parents acted swiftly in presenting the child promptly to the medical authorities when injuries were discovered, even when they were aware of the likely consequences.

259) I do note that AD has not suffered any further injuries following her discharge from hospital in August of last year, whether in the care of her paternal great-

grandmother or in foster care; the significance of that fact has to be seen in the light of my conclusions about the first set of injuries but is not expunged by it.

260) I find myself adopting the formulation of Mr Bagchi QC, namely that if the evidence as to the wider canvas of the parents' history, character and personality suggests that it is inherently improbable that this mother and this father would fracture their daughters' bones and handle her very roughly it broadens the scope for the court to reject a hypothesis which involves the abusive infliction of trauma and promotes one which suggests that the cause of her injuries remain unknown.

261) He finally submitted that it is not a failing in the court's duty to the child or parties if taken as a whole the evidence is so riddled with doubt and inconsistency that none of the posited explanations justifies a finding. I accept that submission. It seems to me that this case falls within the category of cases identified by King LJ in Court of Appeal 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).

262) For all the reasons I have set out I have concluded that I cannot be satisfied in respect of any of the pleaded injuries that an underlying medical cause can be excluded. Although there is almost certainly a proximate cause behind each bruise and each fracture I cannot be satisfied as to the amount of force or pressure that would be needed to cause the injuries to AD in each case. I cannot exclude the possibility that each bruise and fracture was caused by normal handling.

Conclusions on the threshold criteria

263) The local authority has not proved to the requisite standard any of the proposed findings that it has sought; it has not proved that any of these injuries are either inflicted injuries or result from rough handling.

264) Although AD suffered harm in the sense that she did suffer the pleaded bruises and fractures, such injuries cannot be attributed to parental care not being what it would be reasonable to expect a parent to give her.

265) It follows that there is no need for me to go on to consider issues as to perpetration.

266) Although there are three sets of injuries in total, and two sets relied upon by the local authority, this is effectively a single- issue case. There are no other aspects to the local authority threshold.

267) Accordingly, I find that threshold is not crossed.

The application

268) It follows that the application for a care order must be dismissed and the proceedings brought to an end.

JD2

269) JD2 was joined as an intervener at an early stage due to the fact that she did have sole care of AD overnight within the window for rib fractures being caused. It should be emphasized however that it has never been the case of any party that she caused injuries to AD.

270) I deal with the submission of Miss Lewis that there should be a recording of exoneration in respect of JD2. It seems to me that the language of exoneration is more properly applied to uncertain perpetrator cases where wrongdoing is established and the court seeks to mark its clear view that one or more individual can firmly be established as being not responsible. To that extent it does not apply to a case where the threshold criteria have been found not to be crossed because the fact of inflicted injuries have not been proved. Accordingly, whilst I would not be minded to use the word exoneration, I am content for there to be clear recordings on the order which could include that no adverse findings were either made against JD2 or indeed sought by any party and that the court considered her to be a witness of truth who sought to assist the court. Permission to be given to disclose the order to appropriate professional agencies.

Final Remarks

271) Although such a conclusion means that there is no interim care order in place and the parents would be entitled to require the immediate return of AD to their care, I would urge them to be guided by the social worker and guardian as to an appropriate transition of care of AD. In the light of what I have read about the parents' quality of care, I would be surprised if the professional advice is that more than a few days - or at the outside a couple of weeks - would be needed to effect the transition.

272) I have little doubt in the light of what I have been told about the parents that they will work with the local authority in an appropriate way.

273) These proceedings have been inevitable in the light of the injuries suffered by AD and the court does not consider that the local authority has approached this very difficult case in anything other than an appropriate way in the light of the way the evidence has emerged. The Court does have concerns about the way that the relevant NHS Trust dealt with the issue of disclosure. It may be appropriate for these concerns to be passed on – I will hear submissions on this point.

274) Nevertheless, the upshot of the proceedings has been that the parents have been separated from their child for the best part of a year and it is appropriate for the court to express its regrets that they have had to endure that separation, even as it concludes that it has been inevitable. It is possible that the parents may have difficulty processing or emotionally adjusting to these matters; there is also the risk that they have missed out, at least in part, on the opportunities that most parents have to learn naturally about their child and her development through constant parenting. Although the separation has been mitigated by regular contact, and the evidence as to their parenting skills is extremely encouraging, it seems to me to be appropriate that these young parents are supported by the local authority in the resumption of their care of AD - for as long as they need it - via a child in need plan. They will certainly need support with the transition, and may require longer term support in building their relationship with AD, and emotional support or counselling. In addition, support with any follow up medical interventions would also be appropriate in the light of the observations of the experts.

275) I wish them and AD well for the future.

276) Finally, I would wish to thank all the advocates, the professionals, the parents, and the wider family for the way they have assisted the court to reach its conclusions in this difficult and complex case.

277) This is the judgment of the court.