Neutral Citation Number: [2021] EWFC 11

Case No: NR19C00398

IN THE HIGH COURT OF JUSTICE
FAMILY DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 19/02/2021

Before :

MR JUSTICE NEWTON

- -

Between :

Norfolk County Council	**Applicant**
- and -	
D	**Respondent**
-and-	
A	**2nd Respondent**
(through the Children's Guardian	
-and-	
C	**Intervener**

- -
- -

Barbara Connolly QC and **Katie Harris** (instructed by **Norfolk CC)** for the **Applicant**
Kate Branigan QC and **Baljinder Bath** (instructed by **Hatch Brenner LLP**) for the **Respondent**
Peter Mason for the **2nd Respondent**
Jo Delahunty QC and **Marika Bell** (instructed by **Fosters Solrs)** for the **Intervener**

Hearing dates: 17 August - 4 September 2020, 12-16 October 2021, +26 – 28 October and 4 December

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Approved Judgment

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

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MR JUSTICE NEWTON

This judgment was delivered in private. The judge has given leave for this version of the judgment to be published on condition that (irrespective of what is contained in the judgment) in any published version of the judgment the anonymity of the children and members of their

family must be strictly preserved. All persons, including representatives of the media, must ensure that this condition is strictly complied with. Failure to do so will be a contempt of court.

Mr Justice Newton :

1. A was born on the 2 January 2019 by Caesarean section at 32 weeks and four days. During the course of the section it was discovered that her mother had a very rare cancer condition called metastatic cholangiocarcinoma. The disease was widespread, tragically no treatment could save her. The mother subsequently died on 13 March 2019.

2. On 12 March 2019 A attended a routine hospital appointment as a result of her prematurity. Her head circumference had enlarged markedly (exceeding the 99.6 centile). An urgent ultrasound scan was carried out which showed bilateral extra-large axial collections, most likely as a result of benign enlargement of subarachnoid spaces. A was otherwise described as well. An MRI scan was arranged for 15 March 2019 which showed bilateral subdural fluid collections. There was haemosiderin staining consistent with previous intraventricular haemorrhage. Following the MRI scan, A became progressively unwell. On 16 March 2019 the father took A to hospital where she was admitted. On 17 March 2019 a CT scan of A's head revealed bilateral complex parietal skull fractures to both sides of the head. A became progressively more unwell and required comprehensive and intensive treatment.

3. On review of all the available evidence it was concluded by the medical teams that the bilateral parietal skull fractures had most likely been sustained by blunt or impact trauma to the head. There was extensive superficial siderosis in keeping with previous separate subarachnoid haemorrhage. The doctors considered that it was likely that there had been at least two separate episodes of trauma to the head, one more recent and one which probably occurred between the two scans. The findings were consistent with inflicted injury. Proceedings were instigated by the Local Authority; the first interim care order was granted on 2 April 2019 and has been renewed ever since. It is accepted that on admission to hospital on 16 March 2019 A had sustained a number of injuries which had no known organic cause and could therefore be inflicted.

4. Until her admission into hospital A had been cared for by her maternal aunt and her father; either therefore might have been responsible for the injuries. As a result, A was discharged firstly into foster care, and ultimately to the care of her paternal aunt, with whom she remains. She is fit and well.

5. The passage of the case has been very far from straightforward and very less than ideal. The original fact-finding hearing before His Honour Judge Richards was adjourned, and sometime later, remaining unallocated, was subsequently transferred to be heard by me. The adjourned hearing, listed over a number of weeks in May 2020, was an early casualty of the Covid-19 pandemic. The adjourned hearing in August was not without incident either, and was not completed within its three-week estimated time frame, the case having to be adjourned on the very morning the father was set to give evidence. During the time subsequently made available a number of other Covid issues arose requiring adjournment and testing and resulting in yet further delay, this being especially unfortunate as the father was midway through cross-examination, his evidence became rather an ordeal, spanning 4 days in total. Thus, it is, that it was only possible to complete the evidence in October and receive written submissions in November and subsequent oral submissions in December. It has been a very much less than satisfactory way of determining any case. Obviously, it has resulted in inordinate

delay for A, but I do not underestimate the additional intolerable strain placed on the two people accused of responsibility for the injuries, the father and the maternal aunt.

The Law

6. In determining the issues at this fact finding hearing I apply the following well established legal principles. These are helpfully summarised by Baker J (as he then was) in *A Local Authority v M and F and L and M* [2013] EWHC 1569 (Fam).

i) The burden of proof lies with the Local Authority. It is the Local Authority which brings the proceedings and identifies the findings that they invite the Court to make. The burden of proving the assertions rests with them. I bear in mind at all times that the burden is fairly and squarely placed on the Local Authority, and not on either parent. Recent case law (such as *Re B* 2013 UKSC and *Re BS* 2013 EWCA 1146) reinforces the importance of proper findings based on proper facts; the principles are the same for whatever the proposed outcome. Here there is, as in many cases, a risk of a shift in the burden to the parents to explain occasions when injuries might have occurred. Whilst that can be an important component for the medical experts, it is not for the parents to explain but for the local authority to establish. There is no pseudo burden as Mostyn J put in *Lancashire* v *R* 2013 EWHC 3064 (fam). As HHJ Bellamy said in *Re FM (A Clinical Fractures: Bone Density):* [2015] EWFC B26.

> "Where… there is a degree of medical uncertainty and credible evidence of a possible, alternative explanation to that contended for by the local authority, the question for the Court is not "has that alternative explanation been proved" but rather… "in the light of that possible alternative explanation can the Court be satisfied that the local authority has proved its case on the simple balance of probability."

ii) The standard of proof of course is the balance of probabilities (*Re B* [2008] UKHL 35). If the Local Authority proves on the balance of probabilities that baby A was killed by the mother or sustained inflicted injuries at her hands the Court treats that facts as established and all future decision concerning the future welfare of B, based on that finding. Equally if the Local Authority fails to prove those facts the Courts disregards the allegations completely.

> "the "likelihood of harm" in s31(2) of the Children Act 1989 is a prediction from existing facts or from a multitude of facts about what happened… about the characters and personalities of the people involved and things which they have said and done [Baroness Hale]"

iii) Findings of fact must be based on evidence as Munby LJ (as he was then) observed in *Re A (A child) Fact Finding Hearing: (Speculation)* [2011] EWCA Civ 12:

> "It's elementary proposition that findings of fact must be based on evidence including inferences that can properly be drawn from the evidence, not on suspicion or speculation."

That principle was further emphasised in *Darlington Borough Council v MF, GM, GF and A* [2015] EWFC 11.

iv) When considering cases of suspected child abuse the Court must inevitably survey a wide canvass and take into account all the evidence and furthermore consider each piece of evidence in the context of all the other evidence. As Dame Elizabeth Butler-Sloss P observed in *Re T* [2004] EWCA Civ 558 [2004] 2 FLR838.

> "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."

v) The evidence received in this case includes medical evidence from a variety of specialists. I pay appropriate attention to the opinion of the medical experts, which need to be considered in the context of all other evidence. The roles of the Court and the experts are of course entirely distinct. Only the Court is in a position to weigh up the evidence against all the other evidence (see *A County Council v K, D and L* [2005] EWHC 1444, [2005] 1 FLR 851 and *A County Council v M, F and XYZ* [2005] EWHC 31, [2005] 2 FLR 129). There may well be instances if the medical opinion is that there is nothing diagnostic of a non-accidental injury but where a judge, having considered all the evidence, reaches the conclusion that is at variance from that reached by the medical experts, that is on the balance of probability, there has been non-accidental injury or human agency established.

vi) In assessing the expert evidence, and of relevance here, I have been careful to ensure that the experts keep within the bounds of their own expertise and defer where appropriate to the expertise of others (*Re S* [2009] EWHC 2115 Fam), [2010] 1 FLR 1560). I also ensure that the focus of the Court is in fact to concentrate on the facts that are necessary for the determination of the issues. In particular, again of relevance here, not to be side-tracked by collateral issues, even if they have some relevance and bearing on the consideration which I have to weigh.

vii) I have particularly in mind the words of Dame Butler-Sloss P in *Re U: Re B* [2004] EWCA Civ 567, [2005] Fam 134, derived from *R v Cannings* [2004] EWCA 1 Crim, [2004] 1 WLR 2607:

a) The cause of an injury or episode that cannot be explained scientifically remains equivocal.

b) Particular caution is necessary where medical experts disagree.

c) The Court must always guard against the over-dogmatic expert, (or) the expert whose reputation is at stake.

viii) The evidence of the parents as with any other person connected to the child or children is of the utmost importance. It is essential that the Court form a clear assessment of their reliability and credibility (*Re B* [2002] EWHC 20). In addition, the parents in particular must have the fullest opportunity to take part in the hearing and the Court is likely to place considerable weight of the evidence and impression it forms of them (*Re W* and another [2003] FCR 346).

ix) It is not uncommon for witnesses in such enquiries, particularly concerning child abuse, to tell untruths and lies in the course of the investigations and indeed in the hearing. The Court bears in mind that individuals may lie for many reasons such as shame, panic, fear and distress, potential criminal proceedings, or some other less than creditable conduct (all of which may arise in a particular highly charged case such as this) and the fact that a witness has lied about anything does not mean that he has lied about everything. Nor, as *R v Lucas* [1981] 3 WLR 120 makes clear does it mean that the other evidence is unreliable, nor does it mean that the lies are to be equated necessarily with "guilt". If lies are established I do not apply *Lucas* in a mechanical way but stand back and weigh their actions and evidence in the round. I bear in mind too the passage from the judgment of Jackson J (as he then was) in *Lancashire County Council v C, M and F* (2014) EWFC3 referring to "story creep".

x) Very importantly as observed by Dame Butler-Sloss P in *Re U, Re B (supra)*

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

That principle was brought into sharp relief in the case of *R v Cannings (supra).* As Judge LJ (as he was then) 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."

As Moses LJ said in *R v Henderson Butler and Oyediran* [2010] EWCA Crim 126 [2010] 1 FLR 547:

> "Where the prosecution is able by advancing an array of experts to identify non-accidental injury and the defence can identify no alternative course, it is tempting to conclude that the prosecution have proved its case. Such temptation must be resisted. In this as in 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."

7. Strongly submitted, and I bear in mind, is the need to avoid speculation or jumping to a particular conclusion from an unknown cause: *E v Harris* 2005 EWCA Crim 1980 (in relation to the triad of head injuries); *Re R, Cannings and R v Henderson* all demonstrate

situations where injuries singly or taken together could give rise to presumptive or misconceived findings, especially where there may be (as here), naturally occurring conditions that may have caused or contributed to, a particular medical finding.

8. I have in mind also what Hedley J said in *Re R* [2011] EWHC 1715 (Fam), [2011] 2 FLR 1384:

> "A temptation described is ever present in Family Proceedings and in my judgment, should be as firmly resisted as the Courts are required to resist it in the 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… a conclusion of unknown aetiology in respect of an infant represents neither a professional or forensic failure. It simply recognises that we still have much to learn and…it is dangerous and wrong to infer non-accidental injury merely from the absence of any other understood mechanism"

9. Finally, when seeking to identify a perpetrator of a non- accidental injury the test as to whether a particular person is in the pool of possible perpetrators is whether there is a likelihood or real possibility that he or she was the perpetrator (see *North Yorkshire County Council v SAV* [2003] 2 FLR 849), and Re B (children : uncertain perpetrators (2019) EWCA Civ 575. In order to make a finding that a particular person was the perpetrator of non-accidental injury the Court must be satisfied on the balance of probabilities. It is always desirable, where possible, for the perpetrator of non-accidental injury to be identified both in the public interest and in the interests of the child although where it is impossible for a judge to find on the balance of probabilities that for example parent X rather than parent Y caused injury, then neither of them can be excluded from the pool and the judge should not strain to do so (*Re D* [2009] 2 FLR 668 and *Re SB* (children) [2010] 1FLR 1161).

The Injuries subject to Enquiry

10. A sustained the following injuries:

a) Multifocal bilateral intracranial injuries comprising

i) Chronic subdural haematoma / collections

ii) More recent subdural and intraventricular haemorrhages

b) Complex bilateral parietal skull fractures and possibly contusional changes in both hemispheres.

c) Marks or possibly bruising to her face on or about 28 February which had the appearance of a bruise and scratch(es).

11. With respect to (a)(i) and (ii) above, scans were performed on (a) 12 March 2019 – ultrasound scan (USS); (b) 15 March 2019 – MRI scan; and (c) CT scan 17 March 2019. Whilst some injuries were identified on all the scans, skull fractures were only identified on the CT scan. The USS performed on 4 January, 2 days after birth, disclosed no abnormalities or concern. Mr Jayamohan considered that did not completely exclude the presence of birth related subdural haemorrhage, but he thought it less likely to be so. A position shared by Dr Cartlidge, which I shall explore later.

12. A had no underlying medical condition that might explain or contribute towards the injuries. There was no reported history of accidental trauma that might account for the intracranial injuries or fractures. At all material times A was in the care of either or both the father or the aunt.

13. With respect to (c), on 1 March 2019, A was seen by the health visitor and later by the GP. Each noted marks/ scratch(es) to A's face but neither observed the "bruising" that appears to be depicted on photographs taken by the aunt on 28 February.

14. In order to make clear the thrust of the expert evidence, I record some of the main headlines of the principal medical witnesses. In doing so it should not be thought that I have overlooked or not taken into account the whole of their evidence (in particular in respect of Drs Cartlidge and Stoodley, Professor Offiah and Mr Jayamohan), or of the other important medical witnesses (Drs Reading, Cross, Powell and Clark), as well as others. There is here too, important evidence from the family; as I have already recorded, it is not now contended that the injuries have any organic cause.

15. The fact remains that there is disagreement between the important medical witnesses which the court must endeavour to resolve. The issues for the Court are therefore whether any of the injuries were inflicted and whether any or all of them were caused by either or both A's father or aunt.

The Background

16. A's parents, who were married, whilst generally very happy, experienced relationship difficulties especially in 2017, triggered by the father having an affair. The mother discovered what was going on, and challenged him, she was obviously deeply upset, indeed has been described as being devastated. Unwisely, but perhaps understandably, she pressed the father about the detail. The father, believing that honesty was now the imperative it seems, told her. As far as I can now tell she shared a great deal, if not all, of the information with her twin sister (the aunt in this case); in an unhelpful development quite a lot of the detail seems to have been shared more widely. For the aunt, who already had (an unjustifiably) low opinion of the father, the information fuelled her trenchant, indeed really quite vituperative views of the father. Her sister, the mother, knowing of her sister's strongly expressed dislike, appears to have deliberately kept the efforts the parents made to rebuild their marriage from her, it was after all none of her business. Although she now questions it, I am satisfied that she reacted negatively and forcefully when she discovered that the mother was pregnant with A, leaving the mother in no doubt whatever of her opinions .

17. A was a planned and a very much wanted baby by both her parents. The very skewed, unhelpful and ultimately unhealthy family dynamic (between the parents and the aunt) set the scene for what was later to unfold in January 2019. After A was born, A and her mother were discharged from hospital on 17 January 2019 to the aunt's house. The father joined them, but having regard to the aunt's trenchant views, it must have been a most uncomfortable arrangement. A's care was essentially divided between the aunt (during the day) and the father (during the night). During the day the aunt also cared for her failing sister, whilst the father worked. During the night the father additionally cared for his wife. Whilst on the surface the father and the aunt appeared to work together, it is now clear from the evidence (in particular the innumerable messages and diary entries) that the aunt was relentless, to the point of obsession in her criticism, indeed hatred, of the father to anyone who was prepared to listen.

18. The events which led to this enquiry are recorded in the second and third paragraphs of this judgement (ibid).

The medical witnesses

19. The first four expert witnesses are well known, widely respected and upon whom the Court has relied many times. They found the case difficult and did not agree.

20. Dr Cartlidge Consultant Paediatrician

1. In his report he concluded that the marks to the face (seen between 27 February 2019 and 1 March 2019) comprised of a bruise and a scratch which could not have been self-inflicted but could have been caused accidentally or otherwise. In evidence he told me that just because a mark is unusual does not mean it may have been inflicted. Having regard to how such a scratch or bruise can develop, it may be sometime before they emerge. On being shown the photographs of the marks taken by the aunt his concerns were raised. The position of the bruise was unusual.

2. As his evidence developed, he became more sanguine about the marks, and with his customary care, weighed the different aspects, in terms of appearance, position, and possible suggested causation. Ultimately in conclusion he was far less concerned about the marks than when he had written his report.

3. Turning to the subdural collections, Dr Cartlidge was clear that they were likely caused by intracranial pressure (ICP), evidenced by A's vastly increased head circumference (which had been missed). The large head and "sunsetting" eyes were consistent with ICP. Considering the images of 18 February, he put the causative events earlier than 11 February, perhaps 28 January 2019 – 4 February 2019. A's various presentations (vomiting, pale, lethargy) were all consistent with her increasing head circumference. He continued however to be rather exercised about this aspect.

4. Skull fractures. A's clinical presentation was unlikely to assist as to dating. She would experience pain and exhibit distress but would be capable of being quickly soothed. Dr Cartlidge's views evolved from his initial report, through the experts' meeting to his oral evidence. In his report he concluded that the right parietal fracture was more likely sustained before 7 March 2019. It may have been sustained by the same event that caused the acute subdural bleeding. He could not exclude it being sustained after

the 15 March 2019 MRI scan, but before the 17 March 2019 scan. The left parietal fracture he thought was likely sustained after the 15 March 2019 MRI and before 17 March 2019. A conclusion which he struggled with since any perpetrator would have known that A was under close examination during the relevant time. Any recent intraventricular bleeding could have been caused by the same event (as the left fracture). Any recent parenchymal brain contusions could have been caused by the same event too.

5. Swelling would normally occur in 24 hours. But in reaching his conclusions he was careful to defer to the expert radiological opinion. He was clear that in his view the soft tissue swelling on the left side would likely occur within 24 hours of the insult and was likely the product of the fracture. It might hide swelling not evident on the 15th but if it was detected on the 17th, then that indicates the incident occurred after 15 March 2019 . He was, it was evident, affected by the developing opinion of Dr Stoodley.

21. Dr Cartlidge was as ever considered and thoughtful. I found his evidence as a result the more powerful, endeavouring to put the evidential jigsaw together in what is on any view a difficult case.

22. Professor Offiah Reader in Paediatric Musculoskeletal Imaging and Consultant Paediatric Radiologist at Sheffield Children's Hospital. Her findings were as follows.

1. A had complex bilateral parietal skull fractures, with wide fracture lines, fontanelles and sutures; these could not be aged by radiological appearance.

2. There was associated left parietal scalp swelling on the CT scan of 17 March 2019, highly suggestive that the fracture had been sustained in the preceding 10 days (i.e. between 7 and 17 March). No such swelling was identified on the 12 March 2019 or 15 March 2019, as a result she therefore concluded that the fractures could have, and indeed most likely did occur, between the MRI scan on 15 March and the CT scan on 17 March 2019.

3. The absence of right-sided soft tissue swelling did not necessarily exclude the right fracture as having occurred at the same time as the left. So, whilst A's right-side fracture was most likely sustained sometime before 7 March 2019, she could not exclude the possibility that the two fractures occurred simultaneously. The extent of the fractures suggested that it was more likely than not to be associated with the swelling. Such fractures do not necessarily give rise to swelling and may, if present, not be apparent for 24 hours.

4. Skull fractures occur by direct impact against a hard object, or from a moving object struck against the head.

5. While bilateral skull fractures can occur from a single impact, the distribution of the fracture lines and the asymmetric soft tissue swelling, caused her to believe that A was exposed to at least two traumatic events leading respectively to the left and right skull fractures, each with a force equivalent to that of a fall from at least 2 feet – but she conceded the evidence of swelling to one side could not exclude one event.

6. Professor Offiah was a clear witness, whose opinions were straightforward, reasoned, based on evidence and experience.

23. Mr Jayamohan Consultant paediatric Neurosurgeon at the Oxford Radcliffe Hospital, records

1. A had skull fractures, bleeding to the brain and contusional brain changes.

2. That the mother's malignancy diagnosis had not impacted on A's head, skull and brain development.

3. Whilst he could not fully exclude birth related subdural haemorrhage, the evidence pointed away from this.

4. A's head size was normal to 14 January 2019 suggesting no chronicity.

5. From 25 February 2019 the head size had significantly increased and continuing to 12 March 2019.

6. Working on the premise that significant increase in head size was caused by the subdural collections becoming chronic and distending the skull, would take at least two weeks, suggesting that they were present before at least 11 February 2019 (in order for such a large increase to have occurred by 25 February 2019).

7. There is no literature on, and Mr Jayamohan has never encountered, raised intracranial pressure causing skull fracture.

8. Re-bleeding of the initial bleed may account for some of the acute blood in the subdural space.

9. The fresh blood would likely date between 10 and 12 March 2019.

10. The intracranial changes were caused by trauma, there was a need to explain the chronic as well as the acute findings.

11. Whilst impact injury can cause subdural bleeding it is more likely to cause unilateral subdural haemorrhage of significant mass effect rather than bilateral subdural collections.

12. The acute blood may have occurred from rebleeding from the membranes (i.e. normal handling), or from a recent shaking injury which might explain the subdural collection.

13. The skull fracture can be caused by bilateral impact. Overlying scalp swelling would normally disappear within 14 days of impact. The wide spreading edges of the fractures (diastasis), as with the suture edges, suggested to him the fractures had been present at least three or four days before the time of CT scan.

24. Mr Jayamohan is a very experienced medical expert and expert witness. He was taxed, troubled even, by the apparent interpretative certainty of the radiological opinion, partly based on the less than optimal MRI scan on 15 March (as opposed to USS). He endeavoured to weigh the significance of the diastasis, trying to understand how

sufficient energy would have been received by the skull and yet bear no skin or brain injury or extradural haemorrhage, suggesting raised intracranial pressure which would be more compatible than diastasis. Whereas that developing opinion was one Professor Offiah could contemplate, she nonetheless on balance held to her view. He concluded in his report that the spreading edge of the fractures suggested to him that the fracture had been present at least 3 or 4 days by the scan on 17 March 2019.

25. At the experts' meeting Mr Jayamohan is recorded as saying that he would defer (on the significance of swelling, or its timing) to Dr Stoodley. But the forensic significance of the swelling and its identification only grew during the experts' meeting. Mr Jayamohan did not dissent from Dr Cartlidge's view. In evidence he considered the pros and cons of both positions (between 15 and 17 March and 3 to 4 days old on 17 March).

26. Dr Stoodley Consultant Neuroradiologist concluded that A's scan showed evidence chronic subdural bleeds, more recent subdural and intercranial haemorrhages, contusional brain changes, and bilateral parietal skull fractures likely to have been caused by abusive head trauma involving impact and shaking mechanisms. He reviewed the neuroimaging, and reported as follows;

Cerebral ultrasound of 4 January 2019

27. There was no evidence of intraparenchymal lesion or abnormal extra axial fluid. The ventricles were normal.

Cerebral Ultrasound at 12 March 2019

28. Large bilateral fluid collections were evident over both hemispheres. The thin membranes suggesting that these contusions were at least 2 to 3 weeks old.

MRI scan 15 March 2019

29. Large bilateral fluid collections shown containing blood breakdown products, the signal characteristics of which suggests 3-7 days after an episode of bleeding. The coexistence of similar blood in the subdural and subarachnoid compartments suggested a traumatic cause.

CT scan 17 March 2019

30. Large collection of fluid. Evidence of soft tissue swelling in the left parietal region. On the right side there is an angulated parietal lucency with a very small amount of associated soft tissue swelling which could possibly represent bleeding along the fracture edge. The bilateral fractures could have occurred as a result of a single impact injury towards the top left side of the head. The cranial sutures are wide and consistent with raised intracranial pressure.

31. He concluded that the ultrasound scan of 4 January 2019 was normal. By the time of A's presentation to hospital her head circumference was greatly enlarged, and she had large chronic subdural haematomas over both cerebral hemispheres and in the posterior fossa, more recent bleeding in the posterior fossa and within the ventricles and evidence

of complex bilateral parietal skull fractures and evidence of parenchymal contusional changes.

The fractures

32. Ageing of the fractures can only be done from the soft tissue swelling which is inherently unreliable. Fractures are painful and likely to be memorable to a carer, although there might not be much change in the child's demeanour (other than she would have cried at the time). He could not exclude the possibility that the fractures occurred as a result of separate impact events, each within 0-10 days of the CT scan (because of the left tissue swelling). He raised a possible crush injury.

The intracranial bleeding

33. A had bilateral chronic subdural haematomas over the cerebral hemispheres and in the posterior fossa, and more recent bleeding in the posterior fossa and within the ventricles, likely due to head trauma; so a chronic issue (theoretically, though unlikely, from birth, more likely within 2-3 weeks on 12 March), and an acute event prior to 15 March 3-7 days prior to the MRI. Multifocal subdural bleeding is more commonly associated with abusive head trauma involving shaking. It would be very unusual for impact events to give rise to bilateral chronic subdural haematomas.

34. Whilst the symptoms and signs of a head trauma vary, it is likely that to have precipitated a change in behaviour and the child would not behave normally.

35. In terms of timing the causative event is likely to have occurred after the last time that the child was behaving normally.

36. As a result of divergent issues raised at the experts' meeting on 23 March 2020 Dr Stoodley, reconsidered, and filed a further short report developing (or shifting as it is contended) his opinion, in relation to the left-sided parietal fracture – that there was no evidence of any left-sided swelling on the MRI scan 15 March 2019. He concluded therefore that the causative impact must have occurred between the MRI on 15 March 2019 and the CT scan performed on 17 March 2019. Such impact may also have caused the right-side parieta1 fracture. The impact also caused further intraventricular haemorrhage and further areas of parenchymal contusional changes. He remained of the view that the chronic subdural collections occurred after an episode or episodes of abusive head trauma.

37. Like Professor Offiah, he returned to the imaging after the experts' meeting. Acknowledging the shortcomings of the MRI scan on the on 15 March, he was nonetheless clear, indeed "positive", that notwithstanding the shortcomings of the MRI that there was no evidence of a left side parietal diastatic fracture. He accepted that he had been "a bit slow" on the forensic significance of the difference.

38. He told me "I can be very confident that there was no swelling on the MRI. There is absolutely no hint of any bruising, and the degree of swelling two days later is quite marked. Swelling that might not be very evident to clinical colleagues is very evident as imaging. Swelling would appear quickly. If there had been a road traffic accident, by the time you got to hospital the swelling would be evident, it would be seen. I am confident as I can be that the causative event had not occurred until after the MRI." He

reinforced that view having reviewed the evidence of Dr Cross and the images – that there was no fracture on 15 March. He considered that the two fractures could be explained by a single impact, but after 15 March. Dr Stoodley's evidence significantly developed from his original report, indeed it is contended that his views did rather more than develop. I acknowledge that this is a difficult case and the court applauds reflection, but it would be wrong not to record that having heard, and relied on Dr Stoodley many times, I was anxious about some of his evidence, both its development and his interpretative certainty. There might have been many reasons for it, but worryingly for the Court, he seemed somewhat disengaged, and to be frank not entirely on top of the detail .

39. Dr Cross deferred to Dr Stoodley.

40. Dr Clark is an experienced specialist Consultant Neonatologist and Honorary Professor. He was responsible for A's care and reviewed her on 12 March 2019.

41. He struck me as a careful and considered doctor and witness. He explained his examination, feeling around and down the skull, even listening to it with his stethoscope. He ran his hand over the skull back and forward. Various contentions were put to him; he was robust in his methodology and in his defence. In conclusion there was little doubt in my mind that he had carried out a careful examination. He was obviously concerned about A's enlarged head and arranged a review that day by Dr Fiaz. In view of the circumstances his examination was the more cautious and detailed because of the concerns.

42. When reviewing Dr Clark's evidence, I bear in mind the advice of the court experts.

43. Dr Reading confirmed in evidence that notwithstanding the limitations of the MRI, that he was reasonably confident that there was no fracture present on 15 March, partly based too on the fact that A apparently was clinically well. However, on 17 March A was displaying signs of a relatively acute trauma. The two treating doctors are obviously not unimportant, bringing together first-hand experience with considered examination and clinical presentation .

The Evidence of the Father and the Aunt

44. The FATHER gave evidence over four interrupted days and in two tranches, themselves separated by 10 days. It was a gruelling and very unsatisfactory process. Notwithstanding the content of a considerable part of the deeply personal, and at times humiliating questioning, he bore it all with remarkable fortitude, only losing his composure once when having to recall some of the very distressing detail of his wife's agonising death. Much of the hearing seemed to be hijacked by what was little short of a character assassination in respect of his personal conduct on the instruction of the aunt. It was totally unnecessary to know the salubrious detail of the father's unfaithfulness to the mother, including for example his partners' gender or age (a matter referred to with notable distaste by both the aunt and her husband). Such events clearly loomed large in the aunt's perspective of the father, but its relevance, if any, seemed at best tangential. Having reflected on the careful submissions made on behalf of the father and the aunt, ultimately, I have concluded that it demonstrated far more about the aunt than the father. No doubt the father deserves censure for his disloyalty towards his wife, but candidly, it was none of his sister-in-law's business, whatever she may assert to the

contrary. Of course, the mother was distressed and wounded, his conduct had hurt her deeply, but like many adults she endeavoured to recover from it and make a fresh start. A was a planned child, and whilst painful life events do not disappear, the parents, who were both adults, and not living a soap opera, and who loved each other very much, sought to put it behind them, rebuild their marriage, and look forward to their future together, with the birth of a much wanted child, A. All aspects which the aunt questioned. In the immediate aftermath of the ”revelations”, the mother disclosed the detail to her sister, who appears to have lost little time in sharing it more widely. A point which was likely to be and has been, irrecoverable.

45. I listened carefully to the father over many days. He seemed to me quite a measured man, rational in outlook, perhaps not always completely sympathetic, but ready to acknowledge occasions and behaviours which were less favourable to him. Given the volley of enquiry about his behaviours he struck me as surprisingly open. He acknowledged that he was far from an experienced parent and on occasion awkward, clumsy even heavy handed.

46. There were instances when he had behaved insensitively (for example in relation to the Volvo car or his wife’s Will), but a moment’s reflection might demonstrate that the father had a perfectly reasonable point of view, and one quite likely to be shared by many other people. In the end it was for he and his wife to resolve. During the final weeks of the mother’s life the father was subject to an avalanche of unexpected surprising and distressing events (in which I am totally satisfied the aunt had a hand), when for example he might reasonably have expected his wife’s estate to pass to him for his and A’s benefit. In those grim days as his wife’s life drew to an end, he discovered that she had severed the tenancy of their property, signed a Will in unusual circumstances, and a made a Declaration of Trust, together with a Letter of Wishes.

47. He may well have been right to question his sister in law’s motives and perspectives. People have different ways of expressing extreme emotion and grief, but I have not concluded that the father’s behaviour (in endeavouring to carry on as near normal as possible) from A’s hospital discharge home to her admission into hospital 2 months later, was so out of the ordinary as to warrant the barrage of criticism aimed at him by the aunt. He carried on doing what he believed was an agreed way forward with his wife (keeping the business going and renovating what was to have been their future home) whilst caring for his wife, and daughter in the evenings and at night, and at the weekends. They were, cumulatively , responsibilities with which any well-adjusted adult might have struggled, given that his wife was also obviously failing.

48. Overall, I found the father to be a straightforward man, but quite protected, despite his surprising and disarming frankness and openness on some topics. I was left wondering what was going on underneath the surface. I was not at all sure that I had heard the whole picture or that what I heard was the whole truth. Unlike his sister-in-law he is not given to big shows of emotion. He was, and is, far more affected by what has happened in relation to his wife and A, both then and subsequently, than might at first be apparent (and certainly given credit for); I paid particular attention to his account of the events following his wife’s death on 13th March 2019, when he must have been under unimaginable strain. Today he is in an obviously much better place emotionally, appearing calm and rational, but I doubt very much that that was so over those few days in March.

49. The AUNT, the mother's twin sister is a highly articulate, emotional and intelligent woman. Her evidence was of a very different character to the father. From her perspective she had a very intense, exclusive, special relationship with her sister, and was clearly completely devastated by her sister's illness and ultimate death, being terrified of being without her. It is no doubt also true that whilst there had been a significant distance between the sisters in 2019 (once the parents endeavoured to reconcile and when the mother became pregnant for which the father appears to have been left with the blame), once A was born, and the mother's fate established, the full intensity of the sibling relationship was rekindled; and the aunt applied and focused herself utterly to her sister, and her sister's needs as she saw it. As a result of her involvement with A and in this case, she has lost a great deal; her employment, her savings, her marriage and other personal losses which must obviously sadden and distress her. She requires medication. Those losses are mirrored by her unforgiving, indeed I am driven to say, spiteful, angry and vitriolic perspectives, of the father. Whilst on the surface, and to many around her, she appeared to be the epitome of reasonableness, kindness and moderation, (indeed the father had absolutely no idea of her real feelings until the diaries and text messages were introduced into this case), in reality the messages and diaries demonstrate a strongly articulated, unbalanced, loathing, even hatred of the father, routinely referring to him as a "dickhead" or "fucking wanker". The multiple messages to and from her friends are as deeply offensive as they are unsympathetic. Whilst on examination in the cold light of day the aunt apologises for their content, the apology runs not so deep that for many hours the Court has still had to read and listen to them. I am afraid that they demonstrate, as did her evidence, a spiteful focussed and stunted perspective of the father. It is instructive to record just a few of the many messages she sent to some of her friends spanning the whole period from January to 15 March

> "… A dickhead… Does fuck all and then walks in as if he's come to save the day, wanker."
>
> "What an insensitive manipulative arsehole."
>
> "I went to check A whilst he was attempting to wash some of the slimy layer he has off himself in the shower."
>
> " A is bathed, clean, fresh clothes and bedding and settled nicely, wanker."
>
> "Yes please to the cameras! I'd like to put one in my room & in the lounge so I can watch the bastard with A. … He is a sick twisted bastard and he stole our [mother]."
>
> "He just called me and was so sickly sweet I nearly threw up like A."
>
> "You'll be vomiting watching him make a big show of slobbering all over [the mother], it's grotesque."
>
> "A has her 2pm today. [The father] is picking us up …I'm dreading being in such close proximity to that wanker."

> "Well I've just had a bath filled with bleach to scrub the bullshit off he kindly pebble dashed me with all sodden day."

50. Whilst the aunt tried to explain away those extreme examples, they were mirrored everywhere through this period. They demonstrate a depth of feeling, hatred and loathing that is hard to fathom, and certainly rationalise. Whilst at the time the father understood that he did not have the most relaxed relationship with his sister-in-law, he was and I accept, remains still (despite everything), genuinely appreciative for the care, housing, assistance and apparent support provided by her in those weeks before his wife's death. He had no idea of what was being said, or done, behind his back. To the world (and to the Court) the aunt sought to project herself as a composed, thoughtful, warm, caring, kind person providing devoted care for her sister and niece, A, a picture described by many professional visitors who were admiring of her care and fortitude. But that disguises a different aspect of the aunt's personality, the flip side, unseen by them, was a deeply angry, resentful, vengeful and I'm sorry to say, obsessive individual. A woman who was not in control of herself inwardly or at all. A self-centred woman who had I have reluctantly concluded lost her way.

51. The aunt is a complicated person with her own perspectives and agenda, saying one thing to one person and another to someone else, whether that be the father himself, friends or professionals. She saw nothing wrong apparently in manipulating the mother herself; one of the clearest examples concerns A's future care. The father had a solution which the mother was uncomfortable with. The aunt (knowing that the mother hoped that A and she would maintain a close relationship) knew that such a solution (given her perspective) could never work and shamelessly emotionally blackmailed the mother, saying that she would rather walk away rather than participate in such a (shared) arrangement. There are other illustrations too (for example the reading of the text on the day A was christened). All this was in the context of the aunt making enquiries about Special Guardianship and speaking of adopting A.

52. Overall the character and conduct of the aunt's evidence was disappointing and remarkable. I make full allowance for the unimaginably distressing circumstances of her twin sister's death, and of these proceedings, but the aunt is an intelligent woman, demonstrably well aware of the effects of what she does and says, and very able and accomplished in achieving what she desires. I do not conclude for example that she had no hand in the legal issues orchestrated at the end of the mother's life (including the potential Safeguarding referral), her evidence suggests quite the contrary, and all of it of course concealed from the father:

> "he will bloody get everything if she doesn't [sign the will]."

> "I'm on at her the whole time but I've got a plan."

53. The aunt bears a heavy responsibility for making what were already tragic circumstances, worse. Whilst she claimed to concentrate on her sisters wishes, her legacy, her memory for A, which were and are obviously factors, the father concentrated on the future, A's future, with him, with the living.

The Approach of the Medical Witnesses

54. I have already recorded the thrust of each witness, all from appropriate specialities. All the doctors gave evidence appropriate to their professional standpoint and reported within their knowledge and also had experience and a good knowledge of the specialities of the other witnesses. In fact, there were in many aspects a strong degree of unanimity, the divergence of interpretation being relevant, less to diagnosis and more to timing.

Conclusions on the Medical Evidence

55. This case remains difficult and unusual, having an especially tragic foundation. Particular caution is required where experts disagree as here. I have therefore necessarily taken my time to reflect on the extremely comprehensive, helpful and thought-provoking submissions, as well as the medical evidence. Where I have recorded aspects of an individual's evidence, this judgement, whilst long, cannot reflect the full nuanced detail of the scientific opinion, although I have endeavoured to record its main points.

Marks to A's face on 1 March 2019

56. Dr Cartlidge was initially greatly troubled by this. The photographs taken by the aunt show what appears to be bruising and possible scratches. Messages passing between her and her friends show that they believed this to be an inflicted injury – but identifying bruises from photographs can be very difficult and at times open to misinterpretation.

57. Whatever the aunt's state of mind in messages between her and her friends, she did not suggest to either the Health Visitor or GP that these were inflicted injuries, rather various accidental explanations were explored; the Mother herself for example was worried that her IV line may have been the cause. There was further discussion about zips or a sling being responsible. Dr Cartlidge thought these possibilities could not be excluded. In oral evidence he told the court that the marks as they appeared on the photographs were unusual for either an accidental or non-accidental injury. He was less concerned about the marks in evidence than he had been at the time of writing his report.

58. In oral evidence the Health Visitor described seeing what appeared to be a forked vein on A's forehead. That would not account for the marks seen on the photographs, she recorded in A's Red Book *"2 small bruises / blue marks pointed out by aunt on left temple just by ear. Small scratch below"*. The diagram could be consistent with the location of marks seen on the photographs and consistent with her statement which concludes these are likely to be surface veins .

59. The GP also referred to seeing a vein, although not on A's forehead. He did not see the photograph and was clear that this was not consistent with what he observed. A was closely examined in excellent lighting. The Doctor did not note the increased head circumference. Dr Cartlidge told the me that there would have been no need for him to measure A's head unless it had been brought to his attention. As the Health Visitor did not map the measurement, even if he had seen A's Red Book or it was recorded in her notes as being an issue, there would be no reason for him to note this. Since the Health Visitor did not make the observation herself, and therefore said nothing to the aunt,

there was no one to bring this to the GP's attention. Accordingly, it appears there was nothing else to alert him to the possibility that the mark(s) might be inflicted rather than accidental injury.

60. Whilst it might be that this was a non-accidental injury, given their unusual position and that A was seen by 2 health professionals, neither of whom were concerned that this was an inflicted injury, and in light of Dr Cartlidge's opinion that this may well have been caused by rubbing/movement against carer's clothing/zips, or being held in a sling, I find that any explanation could potentially explain what was seen, and whilst non accidental injury is just one explanation, there are several others, each of which is equally likely. I find therefore that they are simply unexplained marks.

The Subdural Collections

61. The experts agree that there was clear evidence of A's increasing head circumference which was likely to be due to raised intracranial pressure (ICP) as a result of the chronic subdural collections. By 25 February A's head circumference had crossed 2 centiles, that increase should have alerted the health visitor to concerns that something was wrong, and of the possibility of raised ICP, but she missed it. That observation would have been the trigger for further investigation. By 12 March, when A was examined by the GP, Dr Clark, he noted an expanded frontal area to her skull, and a full fontanelle with slight sunsetting of her pupils. Her head circumference was now 40.5cm, i.e. above the 99th centile; an urgent ultrasound was performed that day. The scan confirmed the presence of bilateral subdural collections, leading to an MRI scan on 15 March and a CT scan on 17 March.

62. When taken to hospital on 16 March, A was noted to have a bulging fontanelle. The following day her head circumference was recorded as being 42.5cm – even further above the 99th centile. There is evidence of a clear progression. A's head circumference had continued to increase between 12 to 17 March.

63. Mr Jayamohan commented on the progression of growth of A's head circumference. The mapping the measurements between 14 January and 12 March demonstrated head size was gradually increasing, attributable to raised intracranial pressure due to the presence of subdural collections. The minimum time for these to become chronic, distending the skull to cause a significant increase in head circumference, is at least 2 weeks. So, the subdural collections must have been present from *"before 11 February or thereabouts"* to explain the increase in head circumference seen on 25 February.

64. Dr Cartlidge spoke too about the photographs of A taken on 24 February showing a large head and sunsetting eyes, consistent with raised intracranial pressure. Dr Cartlidge thought A's head looked disproportionately big. It is notable A had her formal development check on 25 February, it was therefore a significant review. Dr Cartlidge wondered whether the medical professionals may have been distracted by the tragedy of the mother's illness. There is a good basis to conclude that he is right about that since there is a considerable body of evidence of discussions that day which strongly suggest that all the focus was indeed on the mother, her wishes, and her legacy. Had the Health Visitor plotted and observed the head circumference measurement it would have been obvious to her that something was very wrong, and which would have triggered further immediate investigation. It might also have alerted the GP when he examined A on 1 March. It is difficult to see how the Health Visitor

could have come to the conclusion that A was showing *"satisfactory growth and development"* as she did, had her focus been on A, rather than being distracted by the adults.

65. Dr Cartlidge considered the photograph of 18 February demonstrated a prominence to A's right frontal bone, which he considered was convincing by 24 and 25 February. Given the time required for raised intracranial pressure due to chronic subdural collections to give rise to a significant increase in head circumference (in his view 2-3 weeks), he considered that this would push the timing of the causative event back even further (before 11 February suggested by Mr Jayamohan). Mr Jayamohan commented on photographs dated 12 February and 12 March. He also thought they showed a slightly more prominent forehead, this lends support to Dr Cartlidge's view that the timing of the causative event should be pushed back earlier than 11 February.

66. The experts were unable to entirely exclude birth injury as a possible explanation for the chronic subdural collections. Dr Cartlidge drew my attention to the lack of evidence-based research of premature babies in this area, he could not exclude birth injury. The main (only possibly) research is based on just 27 full term babies (none of whom had subdural haemorrhage at birth) whereas for example 650,000 babies are born in the UK alone every year. Self-evidently there are severe limitations on the wisdom of relying on such a small unrepresentative sample in a cohort of full term, as opposed to premature, babies. If the Court found that the bilateral fractures were caused non accidentally that would tip Dr Cartlidge to describe the earlier injury as earlier abuse, but he advised caution. Dr Cartlidge was particularly willing to accept this as a possible explanation, Mr Jayamohan considered but did not think that it was the cause in this case. Partly because of the normal ultrasound on 4 January (not entirely excluding the presence of birth related subdural bleeding), but also because of the mapping of the head circumference measurement (because the head circumference would have gradually increased). No one seems to have really considered the aspect of prematurity.

67. Dr Cartlidge and Mr Jayamohan were of the view that A's presentation at various times in February and March (from about 20 February) (vomiting, pale, lethargic) might have been consistent with symptoms arising from her increasing head circumference. Mr Jayamohan expanded on this in his oral evidence, the expansion to A's head was secondary to the increase in volume inside. He explained that as A's fluid over the surface of brain increased , the skull would stay the same, but the pressure rises in the head and the child becomes unwell. However, as a baby's skull plates are not fused, as the head becomes larger separation of the plates increases the volume and thereby reduces pressure. As plates expand the volume increases and pressure is therefore reduced. When the head can't expand much more, pressure starts to go up faster leading to worsening symptoms; as here, A's ability to compensate for the collections "running out"; decompensation, appears to have occurred to about mid-March with A becoming increasingly symptomatic with regards to raised intracranial pressure as the head circumference started to really increase in size and the pressure started to increase in her head. Once the drainage and shunt were in place, the head circumference and symptoms started to settle. I conclude that A's presentation from the time of the MRI scan on 15 March would equally be in keeping with a decompensation episode where the pressure started to significantly rise to cause worsening symptoms. In oral evidence Dr Cartlidge also confirmed that the symptoms A was presenting, particularly on 15 and 16 March, would have been attributable to her increasing head and not skull

fractures. Subdural bleeding may have mild symptoms or may be asymptomatic. Thereafter if chronic collections develop, it is they considered the effect of raised ICP/ expanding head which led to the symptoms.

68. There is a very wide window between after 14 January and 11 February, possibly early February during which the experts consider that something happened to A which lead to the chronic subdural collections seen on the scans in March. It was likely to have been a shaking type injury – possibly the result of a momentary loss of control. It is clear from the history that A would have been in the care of either father or the aunt at the time. One of them must have been responsible for causing the injury, although in terms of dating the injury with such a wide window it is not possible to identify who is responsible. There is no clear marker in the medical opinion or chronology of events where it is possible to say something did or must have happened then. There are times when both of them were alone with A, although in father's case that is mostly at night when the aunt would have been in the house, although there are occasions when he had A during the day. In the aunt's case she was responsible for most daytime week care.

The More Recent Intracranial Bleeding

69. In his initial report Dr Stoodley looking at the 15 March MRI scan identified acute subdural blood in the posterior fossa and blood products of similar signal characteristics layering in the posterior horns of the lateral ventricles on both sides. These he aged at 3-7 days at the time of the scan i.e. the bleeding occurred 8-12 March. He explained that *"Whilst the acute subdural blood in the posterior fossa alone could be explained on the basis of being due to re-bleeding, the co-existence of acute blood of similar appearance in both the subdural and subarachnoid (intraventricular) compartments cannot be explained by this mechanism and suggests a traumatic cause."* Mr Jayamohan dated the timing of the acute bleeding by reference to the CT scan which he assessed as dating after 10 March. Given Dr Stoodley's timing based upon the MRI scan, the acute blood would I conclude likely have arisen between 10-12 March. Thus, they concluded that there was a traumatic event which caused the chronic subdural collections, and a later separate traumatic event before 15 March and likely on or before 12 March. Dr Stoodley also identified contusional brain changes on the MRI scan, consistent with impact trauma.

70. It is right that it follows that there must have been a separate traumatic event (not explained by rebleeding) which caused the recent subdural and intraventricular bleeding. The presence of contusional change suggests that this is likely to have been caused by impact rather than shaking mechanism. Dr Stoodley, Dr Cartlidge and Mr Jayamohan agreed that an episode leading to skull fracture, prior to the MRI scan, would also explain the acute subdural and intraventricular bleeding.

The Skull Fractures

71. All the experts agree that there are bilateral parietal skull fractures which, subject to timing, could have been caused by a single impact, or crush injury, or by two separate impacts. The fractures were identified on the CT scan but not the 15 March MRI scan. In oral evidence Dr Stoodley endeavoured to explain why he did not initially look for fractures or soft tissue scalp swelling on the MRI scan.

72. Professor Offiah and Dr Stoodley agreed that the CT scan showed soft tissue scalp swelling associated with the left sided skull fracture. Dr Stoodley identified a small amount of soft tissue scalp swelling on the right which might be bleeding from the fracture. Professor Offiah did not. Professor Offiah considered that given the presence of associated left parietal scalp swelling the left parietal skull fracture would have been sustained in the 10 days preceding the CT scan. However, noting that the hospital radiologists, Drs MacIver and Fiaz did not see swelling on the MRI scan, she thought the fracture was likely sustained between 15 and 17 March i.e. between the 2 scans. Professor Offiah was also clear that a skull fracture may never be associated with swelling, but if it is, this may not be apparent within the first 24 hours and resolves within 7-10 days; she did not exclude the right sided fracture as having occurred at the same time as the left, though that was not her preferred thesis, but given the extent of the right sided fracture considered it more likely than not, to have been associated with soft tissue swelling after injury (between 24 hours and 10 days), and therefore concluded that it was most likely sustained before 7 March.

73. Dr Stoodley considered in his main report that the fractures could have occurred as a result of a single impact injury. Further, if there was associated soft tissue scalp swelling then it is likely that the causative event would have occurred relatively recently. However, as soft tissue scalp swelling can take some time to develop or be noticed and take a variable time to resolve, accurate assessment of the timing of an injury by the appearance of soft tissue swelling is inherently unreliable. Where swelling is clinically visible it may not be visible on scans, where swelling is not clinically visible, it may be visible on scans. Nothing is certain. He claimed to have made allowance for the interpretative shortcomings of the MRI, but having regard to his approach overall , and the content of his evidence, I do not accept that he did. He concluded that the fractures might have occurred at the same time but did not exclude separate events. However, if there were 2 separate events each is likely to have occurred within the preceding 10 days of the CT scan i.e. between 7-17 March. After re reviewing the MRI scan, he changed his approach, saying that the skull fractures occurred after the 15 March MRI scan because he did not see fractures on that scan, or the swelling seen on CT scan.

74. The fractures were diastatic i.e. there was wide spreading of edges of the fracture. Mr Jayamohan considered that this finding was a result of raised ICP. Professor Offiah agreed. Dr Stoodley alone said that the diastasis was due to the force of the impact and not raised ICP, although that might increase the extent of the diastasis/spreading of the fracture. Dr Stoodley said the fracture would have been diastatic upon impact. Given the extent of the diastasis in the left sided fracture, in his view it would have been picked up on the MRI scan, had the fracture been present on 15 March, despite the generally accepted view that MRI is not an ideal modality for identifying bone fractures and he would not look to MRI scans to see either fractures or swelling. He did not appear to take account of the growing ICP.

75. Mr Jayamohan explained his disagreement with Dr Stoodley with regard to diastasis. His clear view was that the presence of the diastasis suggested the fractures were present *"for a good few days …. at least three or four days by the time the CT scan was done"*. He stuck firmly to that opinion in oral evidence. In short, at the point of impact the fracture would not have been wide, rather the effect of raised ICP would have been to expand/widen the fracture in a similar way as the sutures were widened. That would have taken time. Mr Jayamohan also expressed strong reservations about using MRI

scans to exclude fractures and was extremely cautious especially having regard to his own findings (and the advices of the other experts on this aspect) about placing too much reliance upon swelling to date fractures because of what he considered to be (and is generally acknowledged) its inherent unreliability. He considered it likely, that both fractures were present at the time of the MRI scan on 15 March, and the fractures became diastatic in the days following the fracture. If he is right, about the effect and progression of diastasis that would date the fractures to 12 or 13 March, maybe earlier. That timing would also be consistent with the dating of the acute bleeding (Mr Jayamohan's timing being 10-12 March).

76. Dr Cartlidge and Professor Offiah both agreed that raised ICP explained the diastasis. Dr Cartlidge thought the diastasis was likely to take less than the 3 to 4 days suggested by Mr Jayamohan but agreed it would take time to develop. Professor Offiah was unable to say how long it would take, only that it would take some time for the fractures to become diastatic. That might point away from recent fracture. In strongly disagreeing with Dr Stoodley, Mr Jayamohan told the court that although fractures may be diastatic due to forceful impact, he would expect that to be associated with significant brain injury, which was not present here. Here there was underlying raised ICP which was already causing A's head to expand due to the increasing volume and pressure inside her head as a result of the chronic subdural collections, and which was responsible for the widened sutures. The contusional brain changes seen were mild. There was no significant brain injury.

77. Mr Jayamohan described A becoming increasingly symptomatic, the raised ICP due to the chronic subdural collections, movement of the skull plates, widening the sutures, would have created extra space within A's head and reduced the pressure, until the volume within the head increased further raising the pressure again. This would have continued until ultimately her ability to compensate for the collections "ran out". Raised ICP would also have caused diastasis to the fractures, which would have allowed the pressure within the head to reduce until the increase in pressure rose again. Mr Jayamohan and Dr Cartlidge were clear that A's presentation on 15 and 16 March, was equally consistent not with having sustained skull fractures, but with her expanding head. The symptoms may have masked any symptoms arising from the fractures, but her presentation was the result of raised ICP and her expanding head. Her worsening symptoms were due to decompensation. This is supported by the fact that it was not until the drainage and shunt were in place that her head circumference and symptoms started to settle.

78. Endeavouring to put all the evidence in context, I have greater difficulty in concluding that the fracture(s) were likely to be have been sustained after the 15 March MRI scan for the following reasons.

79. Dr Stoodley said the fracture couldn't be seen because it wasn't there . He is less sure about the right fracture. It may have been present, but he was unable to see it using MRI. In Dr Stoodley's view the left sided fracture would have been visible because it was diastatic. In contrast, Mr Jayamohan was clear that the diastasis would have taken some days to evolve and was not surprised that the fractures were not detectable on MRI. An MRI is not a good modality for detecting fractures. Assuming they were present, as they were developing, they may not have been as diastatic at the time of the MRI scan as they were at the time of the CT scan, especially as the head would quickly

lose the ability for raised pressure from a given point (it previously having compensated).

80. Dr Stoodley thought the swelling would have been seen on the MRI scan, when it was not. The fact he was unable to see any swelling ,he says, suggests the absence of fractures on the left side. It was Dr Stoodley himself who told me that swelling which was observable clinically may not be seen on a scan and vice versa. He was clear that the right sided fracture may have been present on 15 March but not detected by the MRI scan. I was concerned about this evidence demonstrating the clearly inherent weakness of the conclusions reached, remembering that he was "positive" that there was no evidence of a left sided fracture. He may have gone back to look but its presence or absence is, on his own account unreliable. He stood alone too , and I do not accept his evidence, on the issue of diastasis (which he considered was due to the impact force not raised ICP) particularly since there was no brain injury, and it is known that there was a developing long standing problem which he failed to factor in . Professor Offiah similarly whilst clear in her own opinion , settled on a more recent date (post 15 March) essentially relying on the interpretation of treating doctors opinions at the time, as the evidence demonstrates that is not a firm foundation , it might have been observable , it might not.

81. Dr Stoodley gives his reasons (for excluding the presence of the right sided fracture) (a) because MRI is not a good modality for identifying fractures, and (b) in his opinion unlike the left sided fracture, the right was not diastatic. Professor Offiah disagreed with him on this point (as did Mr Jayamohan). She was clear that in her opinion the right sided fracture was complex (Dr Stoodley said it was not). In her view not only was the right sided fracture diastatic, it was more diastatic than the left.

82. Swelling is not always seen, either clinically or radiologically. However, swelling was evident on the 17 March CT scan and both Dr Stoodley and Professor Offiah agree that the swelling seen on the left was associated with the fracture. Professor Offiah did not see swelling on the right side. Dr Cartlidge expressed considerable caution about diagnosis and dating of fractures but was ultimately persuaded (in part presumably on the certainty of Dr Stoodley) by the apparent absence of swelling during clinical examination of Annabel on 12 March, the absence of swelling on the 15 March MRI scan, but presence of swelling on the CT scan. In his view, if there was no swelling on the MRI scan the fracture must have occurred after that was done, or very shortly before.

83. Mr Jayamohan cautioned about (and all experts acknowledged) the relative unreliability of using the presence of swelling to date fractures. He pointed to the variation between radiologists as to how long swelling would persist – 7, 10, 14 days. *"There's clearly a natural variation … most of us would say it tends to disappear within the seven to 14-day period in a sort of – in a very general way….. the presence of scalp swelling is helpful, but the absence doesn't help either way so because you don't see scalp swelling, it doesn't mean it's old. It doesn't mean that it's new, but that generally people would say that scalp swelling is seen with a newer fracture than an older one in a wider context"*.

84. Mr Jayamohan was keen to emphasise the difficulty of differentiating between scalp swelling as a result of the fracture from the cause of the chronic subdural collections present from February. Each expert gave a different account of how quickly swelling

might occur. I conclude that the evolution and resolution of swelling is variable and it would be unwise to place too much reliance on its presence, absence or development to try and date the fracture(s), especially when there is a known condition which may have contributed or even caused the diastasis, and where each of these careful and experienced experts disagreed.

85. The aunt noted that A was quiet, pale, possibly slightly green, at the hospital on the morning of the MRI scan. Her symptoms had markedly worsened by late afternoon/evening when she was at the grandparents' and continued to worsen until treated at Addenbrookes. As stated above, Dr Cartlidge and Mr Jayamohan were clear that the symptoms she was presenting with were consistent with increasing ICP and not skull fracture. Obviously, if the fracture(s) were sustained after the MRI scan, that must have occurred while A was in the care of the father. Something must have happened either before she and the father arrived at the PGP's, or at some stage during the night when he was on his own with her, and without his father and stepmother being alerted to anything amiss.

86. There is clear evidence that shortly after their arrival at the grandparents' house, A was unwell, the grandparents also describing an observable ridge. Whilst that could suggest that something had happened in the short period of time between the aunt being dropped off and the family arriving at the grandparents, the window is small, and her symptoms were equally consistent with the now known and identified ICP. It is most unlikely that whatever the strains the adults were under in between two scans (and in the knowledge that another was to occur) that an injury would be inflicted.

87. There is a potential danger here. Mr Jayamohan , as has been pointed out , is not a specialist radiologist, but he is very familiar with the issues at play here and has highlighted an important area of enquiry. He raises a perfectly proper explanation about which Dr Stoodley was dismissive, I was unimpressed by that ; his certainty (on the interpretation of swelling and the modality of the CT/MRI scans)was not I find ,even on his own testimony ,soundly based. It was evident that Dr Cartlidge relied to an extent on his opinion (he being a well-known expert). Dr Cartlidge was more balanced and considered, endeavouring to make sense of the differing aspects. Professor Offiah too whilst prepared to contemplate Mr Jayamohan's approach held to her view, but it she remained thoughtful about it. Ultimately, I prefer her own original opinion (not based on whatever examinations had occurred at the time), that the injury to the left side of the skull occurred in the preceding 10 days.

88. Having weighed all the possibilities and conflicting evidence, it is not, I conclude, possible to reliably conclude that the skull fractures must have occurred after the 15 March MRI scan, indeed all the evidence taken together, including the recent subdural and intraventricular bleeding , the absence of anything more than mild contusional changes (and the absence of associated brain injury) , as well as descriptions in changes in A's presentation consistent not with skull fracture but diastasis, suggests that the fracture (s) could have, and more likely than not, did occur at any time from before 7th March.

89. Bringing that conclusion to the evidence together to the subdural collections(and in particular that of Dr Cartlidge and Mr Jayamohan) I have greater difficulty in adopting a conclusion that the subdural collections arose at birth and conclude that A was subject to some kind of shaking type injury between the 14 January and 11 February.

90. With that background I turn to the evidence of the father and the aunt. Neither can give any explanation for the injuries discovered. Both were living in an unimaginably stressful environment, caring for a premature baby and a rapidly weakening and dying wife and sister. Both powerfully argue compelling cases of responsibility against the other. The father contends that the aunt, who displayed a combination of quite remarkable obsessiveness and an ability to manipulate and portray two very different personae at the same time, was responsible, evidenced by her very extreme stress, the unusual nature of the sisters' relationship (the pressure of losing her "other half", as well as A being the only part of the mother which would survive or remain), her unhealthy and all- consuming hatred of the father (illustrated by the remarkable nature of the messaging and diary content about him), and of her failure to even offer the father a helping hand when it appeared that he too was tired or struggling, as well as negatively influencing the mother to her own advantage, the evident and immense pressure of caring for her (which was commented upon at the time), her failing and unsupportive relationship with her husband (he visited three times I think in the months between A being discharged from hospital and the mother's death), the constant number of visitors to the house, and on top of all of those, caring for A .

91. On behalf of the aunt similar contentions are made in respect of almost every aspect of the father's life which whether they be personal financial or practical, placed him under unimaginable stress and strain . Further the aunt contends that the father is by nature deceptive and untruthful. The aunt founds her primary contention on the timing of the fractures, identifying the period after 15 March 2019, and in particular the period after the MRI scan, after the father dropped off the aunt after the hospital visit, together with the careful earlier medical examinations and the observations of the grandparents; suggesting that in what is a very small window the father in all probability dropped A . It is an attractive contention but for the reasons I have made clear I prefer the approach of Mr Jayamohan on timing which more likely fits the jigsaw pieces together and does not therefore endorse the hypothesis put forward .

92. Notwithstanding my impressions and assessments of the two main witnesses, there are obviously occasions when a witness' evidence is so compelling that one way or the other it is determinative. Here however I look at the totality of the medical evidence, together with that of the father, the aunt, the grandparents, as well as the aunt's husband and many other supportive witnesses. Looking at the whole picture, both individuals were under unimaginable strain in circumstances which will never be repeated again. Either could at any moment have lost control and/or concentration, and in reality, either could have been responsible. I have had a long time to reflect on the evidence, and possible conclusions, but I regret I am unable to safely attribute responsibility to one or the other. What I can be sure about is that the terrible circumstances of those days and weeks, and the unimaginable burden of the care proceedings, and the issues raised by them, will never again be repeated, and importantly, the conclusions on the medical findings are unlikely to be reflected in the ability of the adults to provide care for A during the rest of her minority .