

IN THE MATTER OF THE CHILDREN ACT, 1989

AND IN THE MATTER OF M

BETWEEN

	<b>A LOCAL AUTHORITY</b>	<b>Applicant</b>
And	<b>SH</b>	<b>1<sup>st</sup> Respondent</b>
And	<b>SB</b>	<b>2<sup>nd</sup> Respondent</b>
And	<b>THE CHILD (M)</b> (THROUGH their Guardian)	<b>3<sup>rd</sup> Respondent</b>

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**JUDGMENT**

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1. This court has been concerned with a fact-finding hearing in respect of injuries identified on a young child, M, on presentation to Hospital on the 1<sup>st</sup> May 2022. At the time of his admission to Hospital M was nearly eight months old. He is now 2 years 4 months old. His parents are mother and father X. On investigation by clinicians M was found to have serious injuries. The injuries identified were as follows:- (a) chronic bilateral multifocal subdural collections (b) acute subdural blood over the left frontal lobe (c) parenchymal injury to the cortex of the left frontal lobe (d) multiple bilateral cortical vein ( bridging veins) thrombosis towards the vertex (e) a lesion in the splenium of the corpus callosum (f) blood over the surface of the tentorium (g) encephalopathy (h) asymmetric bilateral multiple retinal haemorrhages affecting multiple layers, some with white centres, more extensive in the left eye where all quadrants were affected.
2. The treating clinicians at Hospital were concerned that M’s injuries might be non accidental, and they instituted the usual safeguarding procedures. The Local Authority issued an application for an interim care order on the 10<sup>th</sup> May 2022 which was granted shortly afterwards. M's parents, the first and second Respondents have always denied causing any injury to their son.

3. There has been a complicated procedural history with these proceedings. I believe it is helpful to refer to it at this stage. The fact-finding hearing was originally listed in April 2023 but at that time the Local Authority had concluded that the evidence and conclusions of the Part 25 instructed experts would not enable the Local Authority to establish threshold for the purposes of section 31 Children Act 1989. The Local authority therefore made an application, quite properly, to withdraw the proceedings which came before this court on the 17 April 2023.
4. That application was not opposed by any of the other parties. At the end of the hearing this court gave an indication that the application to withdraw proceedings would be granted. Judgment was reserved to be handed down on the 21 April 2023. It was agreed that a draft written judgment would be circulated to the parties on the 20 April 2023
5. Following on from the court's indication on the 17 April 2023 all parties agreed that the interim care order should be discharged. Arrangements were made to reunite M with his parents. After the interim care order was made M had been looked after by a family member, but for the 6 months prior to the hearing M had been in local authority foster care.
6. Following on from M's presentation at hospital and the concerns raised, the police had started their own investigation into the circumstances of how the injuries were suffered. M's parents were interviewed and, as I understand it, that investigation is ongoing. From time to time the issue of disclosure of documents to the police was discussed during hearings in these proceedings but the formal application was only heard in June 2023.
7. Shortly before the hearing listed for the 21 April 2023 the Local Authority advised the court and the other parties of a significant development. The exact sequence of events is not important. The police officer in charge of the criminal investigation had become aware of the Local Authority application to withdraw proceedings. That officer advised the Local authority's legal advisors on or about the 20 April 2023 that the police had obtained two expert reports in the criminal investigation that had both concluded that the more likely cause of M's injuries was non accidental.

8. It is fair to note that there had been a level of misunderstanding on the part of Social Services and the disclosure officer when they had been advised, at an earlier stage in the year, of a report from Dr Khandanpour supporting the conclusion of NAI. The police officer had indicated that the report could not be shared. Unfortunately, that instruction was understood by the personnel involved to mean that the report could not be shared internally within the Local Authority and their legal advisers. There are statements in the main bundle setting out what happened and when, but the existence and import of the report was not made available to the legal team until 20 April 2023. The Local Authority reviewed the evidence and advised parties and the court that it was likely they would be making another application, effectively to reinstate proceedings and then consider whether a fact-finding hearing was necessary.
9. This development meant that the judgment from the hearing 17 April 2023 was not circulated as planned. The Local Authority made a further application for permission to adduce the two reports obtained by the police into these proceedings. That application was successful albeit I made the decision that the two experts, Mr Simmons and Dr Khandanpour would not be accorded Part 25 status. That decision was not appealed. Further time was then taken by the various representatives to review the new reports which had been obtained from the police. The Part 25 experts instructed in the family proceedings were also provided with copies of the new reports. After this review period the Local Authority position was that a fact finding was necessary as there was expert evidence to support a finding that M's injuries were more likely than not inflicted and were not accidental.
10. A hearing was set for the 30 June 2023 for that position to be argued as the re listing of the fact finding was opposed initially by the parents. At that hearing the parents' representatives indicated that they were no longer opposing the premise that a fact finding was necessary. The Local Authority was ordered to serve a revised threshold document and the fact-finding hearing was listed to commence on the 16 November 2023 with a time estimate of 15 days.
11. At the hearing each of the parties was represented by Leading and Junior counsel. Mr Damian Garrido KC and Mr Adam Kayani appeared for the Local Authority; Ms Gemma Farrington KC and Ms Kate Claxton appeared for the mother; Mr Paul Storey KC and Ms Lydia Slee appeared for the father and Ms Elizabeth Isaacs KC and Ms Julia Gasparro appeared for the child instructed by his Guardian Jessica Steadman.
12. Father was assisted throughout the hearing by an intermediary, who provided the court with assistance on appropriate ground rules to be followed during the hearing and advised when breaks were required. Although English is not Father's first language, he has been living in the UK for some years and did not require an interpreter to assist him at any stage during the proceedings.

13. The findings sought by the local authority are set out in its final threshold document dated the 25 October 2023 and can be found at A(i)6-A(i)7 in the bundle:

At the relevant date, being the instigation of protective measures on 7 May 2022, the child was suffering significant physical harm attributable to the care given to him, not being what it would be reasonable to expect a parent to give him.

1. M was presented to hospital on 1 May 2022 (c. 8 months of age) by which time subsequent investigations established that he was suffering from the following:

- (a) Chronic bilateral multifocal subdural collections.
- (b) Acute subdural blood over the left frontal lobe.
- (c) Parenchymal injury (laceration) to the cortex of the left frontal lobe.
- (d) Multiple bilateral cortical vein (bridging veins) thrombosis towards the vertex.
- (e) A lesion (infarction) in the splenium of the corpus callosum.
- (f) Blood over the surface of the tentorium.
- (g) Encephalopathy.
- (h) Asymmetric bilateral multiple retinal haemorrhages affecting multiple layers, some with white centres, more extensive in the left eye where all quadrants were affected.

2. The injuries at paragraph 1 (above) resulted from one or more episodes of abusive head trauma.

3. The mother and/or father inflicted the abusive head trauma by a mechanism or mechanisms that they have not disclosed.

4. If only one parent inflicted the injuries, the other parent failed to protect the child from being injured non-accidentally.

### **Background leading to the Proceedings.**

14. M was born in September 2021 and was 8 months old when he was taken into police protection having been admitted to hospital on 1 May 2022 after reportedly falling from his parents' bed. M was made subject to a Police Protection Order (PPO) on 7 May 2022. Care proceedings were issued by the Local Authority on 10 May 2022.

15. The mother is 20 years old. The father is aged 21. This young family had not come to the attention of social services prior to 1st May 2022, except to the extent that the father had been a child in care himself, and the mother had been known to social services for a time as a child. The father had come to the UK as a refugee when he was about 11 years old and remained in foster care until he was an adult. An assessment had been completed in 2021 due to the very young ages of the parents and that had identified no concerns around their ability to parent M. Early Help was offered as a support, and declined, as was the parents' right.

16. All the evidence before the Court for the period prior to 1<sup>st</sup> May 2022 was that M was well cared for, and very much loved, by his parents. He had had all his vaccinations after birth and the observations of the Health Visitor were positive. M was gaining weight appropriately and was reaching all his milestones. The first social work statement reported that the social worker had seen M with his father, and his behaviour towards M was warm and loving and he spoke very fondly of him. The mother was noted to be very proactive with M's care. She showed affection and emotional warmth to her son. The mother was noted to speak about M in a warm and loving way and responded to his cues.
17. The mother had reported that M went off his food for a while, sometime around the middle of April 2022. He would have good and bad days. He could also be a bit more sleepy than usual.
18. On the 25<sup>th</sup> April 2022, the mother said that M woke up and seemed fine. After breakfast he vomited. M had a temperature and was quite sleepy. The parents gave M Calpol but he also vomited this up. Throughout that week M was vomiting more often.
19. On 27<sup>th</sup> April 2022 the parents contacted the doctor's surgery. The mother stated she was told there were no appointments available. She said her sister advised them to phone back because of M's young age, which they did, and they were offered an appointment. Records disclosed for the hearing show that the mother attended with M. The GP notes confirm that M was seen with his mother – it was noted that mother reported M was vomiting, drinking well, not eating much, had wet nappies, had no loose stools, had a temperature but not at the time of the visit.
20. The mother said she was told M was probably teething. The mother said she was advised to try Dioralyte (for hydration), but she said the pharmacist advised against this because M was under two years of age. It was not in stock in any event. The mother therefore took M home. The parents were keeping him cool and giving him Calpol when needed.
21. After this appointment the mother remained concerned that M was still vomiting. On 30<sup>th</sup> April 2022 the mother said that M was still being sick and was hot to touch so she called the 111 hot-line. A doctor then called her back and offered her an appointment at a Walk-In Centre, which she attended with M. The father drove them to the appointment. The advice continued to be that M was probably teething. Again, there is documentary evidence of her attending that appointment, and it is clear from the notes that the doctor had no real concerns and simply advised keeping M comfortable and hydrated. The record suggests that the mother was appropriately concerned, and relieved that the doctor was not worried about M's condition.

22. On Sunday 1<sup>st</sup> May 2022, the parents said M had seemed to be back to his normal self during the day, but in the early evening he fell off their bed. At that time the family were living with the mother's parents at their home. They had been out shopping during the day, returning home about 4pm. The parents reported that they were both in their room, the father was sitting on the bed with M and the mother was ironing the father's outfit for a forthcoming celebration. That year, May 1<sup>st</sup> 2022 fell at the end of Ramadan. M had been placed in the middle of the bed by his father and was propped up on both sides by pillows. The father was sitting on the bed talking and playing with M.
23. The parents reported that the mother asked the father to check that she had ironed the clothing properly and he got up from the bed, turning his back on M. As the parents were speaking M fell off the bed, landing on the carpet. Both parents said M cried straight away, and his father picked him up immediately. M seemed alright at first but then appeared to get drowsy and so the parents tried to keep him awake. The father flicked some water at M, trying to cause him to react. However, M then became floppy, and unresponsive. The father continued calling his name to try and get him to respond.
24. The mother took M downstairs to where her parents were, and told the father to get his car keys as she could see there was something seriously wrong with M. By the time the mother had reached the bottom of the stairs, M had stopped breathing. The maternal grandfather said that he had just returned home when the mother ran down the stairs saying, "he fell off the bed". He took M from the mother and laid him down and performed mouth to mouth resuscitation. M appeared to be drifting in and out of consciousness. The mother phoned 999 for the emergency services.
25. A note of the 999 call is within the evidence in the bundle and records that the call handler was told M had fallen off the bed. The parents' account that M fell off the bed has remained consistent throughout the fact-finding hearing. When the mother was on the phone to the ambulance service, she said M's hands curled up and seemed to lock on the right-hand side. He was making sounds, but they were not babbling sounds, more like moaning. The stiffness seemed to move to the other side of his body. The medical records show that the Community Response team arrived first, then the ambulance, which eventually took M to the local hospital. The information noted on those records show that the parents were concerned and distressed.

26. At the hospital a CT scan was carried out on the 2 May 2022 in relation to M's head and brain. Subsequently M was transferred to KC Hospital and an MRI scan was carried out on the 5 May 2022. The treating clinicians found evidence of what they termed to be old and new bleeding in the images of M's brain, bilateral subdural haemorrhages. The Consultant Ophthalmologist at KC identified bilateral retinal haemorrhages; 10 - 20 in the right eye and too many to count in the left eye. An arachnoid cyst was also identified as being present in the left side of M's brain. No fractures were found and the blood tests which were carried out appeared to be normal.
27. Following the usual clinical investigations involving a skeletal survey, CT Scan, MRI Scan, ophthalmological assessment, blood and biochemical testing and compilation of a body map, M's treating clinicians formed the view that the injuries were likely to have been inflicted. That was demonstrated both by their email to social services and what they reported to the police. Their opinion was based on the evidence of the CT and MRI images, and the ophthalmology opinion in respect of the bilateral retinal haemorrhages. It was put even more strongly when one of the team is reported to have said:
- "...it is absolutely clear, there are haemorrhages present behind both eyes" and he went on to state that it would be "hearing hoofs and thinking unicorns to think of anything else".*
- The ophthalmology treating team concluded that their findings were consistent with an acceleration and deceleration mechanism akin to shaking the brain, always a pointer to potential NAI. The clinical investigations did not reveal any suspicious bruising or fractures.
28. As a result of the opinion of the treating clinicians, M was made subject to police protection on 7<sup>th</sup> May 2022 and the Local Authority issued their application for a care order on 10<sup>th</sup> May 2022.
29. On the 12<sup>th</sup> May 2022 M was discharged from hospital into the care of a maternal aunt. From the 27<sup>th</sup> October 2022 to late April 2023 M was in a foster placement as his aunt was unable to continue to care for him. By the time the ICO was discharged M had been out of his parents' care for nearly one year. Since late April 2023 M has remained in his parents' care. There have been no reported safeguarding concerns about his care. M remains on a Child Protection Plan.
30. At the time of the application to withdraw proceedings it was accepted by all parties that this was a "single issue" case. Apart from the existence of M's injuries the Local Authority had no other evidence to satisfy the threshold criteria required by s31 Children Act 1989 to enable this court to consider the making of public law orders. At that time the Part 25 instructed experts were unable to confirm whether the injuries suffered by M were more likely than not to have been inflicted (NAI).

31. I will deal with the detail of all the expert medical evidence later in this judgment. I believe it is fair to say that the expert evidence in this case is complex and that the views of some of the experts have evolved during the course of these proceedings.

## **The Law**

32. An application for a care order is a two-stage process. Firstly, can the Local Authority prove the facts on which they rely to establish threshold for the purposes of s31(2) Children Act 1989. Secondly, if threshold is met, what orders, if any, should the court make.
33. The test under s.31 for the finding of harm justifying the making of a welfare order by the court is well known. Threshold requires findings of past or present fact that satisfy the court, as of the relevant date, 7th May 2022, “that the child concerned is suffering, or is likely to suffer, significant harm; and the harm or likelihood of harm, is attributable to i) the care given to the child, or likely to be given to him if the order were not made, not being what it would be reasonable to expect a parent to give him; or ii) the child’s being beyond parental control”. The test for “likely” in the above is “a real possibility which cannot be ignored” --Re H [1996] AC 563 and Re J [2012] EWCA Civ 380].
34. The principles of law that a court must apply in Fact Finding hearings is well known. Both Mr Garrido KC and Mr Storey KC have provided very detailed summaries of the applicable law for which I am very grateful.
35. As Mr Garrido KC set out in his note, these general principles were very helpfully dealt with in some detail by Mr Justice Baker as he then was, in the case of Re IB and EB [2014] EWHC 369 at paragraphs 82 to 93.
36. I shall summarise the main points which emerge from those guidelines. The burden of proof in respect of the findings sought lies in this case with the Local Authority. The standard of proof is the balance of probabilities, and this was confirmed in Re B 2008 UK HL 35. If an allegation of inflicted injury is proved the court will treat that as a fact for all future welfare decisions that have to be made in respect of a child.
37. Findings of fact must be based on evidence. The court must be careful to avoid speculation, particularly in situations where there is a gap in the evidence. As Munby LJ [as he then was] observed in Re A( A Child) (Fact Finding Hearing: Speculation) [2011] EWCA Civ. 12 “It is an elementary proposition that findings of fact must be based on evidence, including inferences that can be properly drawn from the evidence and not on suspicion or speculation”.



38. When considering the evidence, the court will invariably survey “a wide canvas” as Dame Elizabeth Butler- Sloss, P, stated in Re U, Re B ( Serious injury: Standard of Proof) [ 2004] EWCA Civ. 567. As she observed in Re T [2004] EWCA Civ. 558 “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 exercise an overview of the totality of the evidence in order to come to the conclusion of whether the case put forward by the local authority has been made out to the appropriate standard of proof.”
39. The opinion of medical experts must be considered in the context of all other evidence. In A County Council v K D & L [2005] EWHC 144(Fam) at paragraphs 39 and 44 Charles J observed “It is important to remember that the roles of the court and the expert are distinct and that it is the court that is in the position to weigh up the expert evidence against its findings on the other evidence. The judge must always remember that he or she is the person who makes the final decision”. Charles J added at paragraph 49 to that judgment “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. The other side of the coin is that in a case where the medical evidence is that there is nothing diagnostic of a non accidental injury or human agency and the clinical observations of the child, although consistent with non accidental injury or human agency, are the type asserted is more usually associated with accidental injury or infection, a court can reach a finding on the totality of the evidence that on the balance of probability there has been a non accidental injury or human agency as asserted and the threshold is established”.
40. In cases involving assessment of multi disciplinary medical evidence the court must be careful to ensure that each expert keeps within the bounds of their own expertise— King J Re S [2009] EWHC 2115 (Fam). It is also important, as observed by Dame Elizabeth Butler-Sloss P in Re U, Re B, that “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”.
41. The evidence of the parents and any other carers will be of the utmost importance. It is therefore essential that the court forms a clear assessment of their credibility and reliability.

42. It is common for witnesses in family cases to tell lies in the course of the investigation and the hearing. The court must be careful to bear in mind that a witness may lie for many reasons such as shame, misplaced loyalty, panic, fear and distress and the fact that a witness has lied about some matters does not mean that he or she has lied everything else, see *R v Lucas* [1981] QB 720.
43. The court must ask itself whether there is any reasonable explanation for untruthfulness or whether there is no such explanation, and the only conclusion is responsibility for the injuries in question or knowledge of the truth about how the injuries were sustained, see *A Council v LG and others* [2014] EWHC 1325 paragraph 64.
44. The court must assess whether a Lucas direction is required. If the issue is whether to believe A or B on the central issue and the evidence is clearly one way, then there is no need to assess credibility in general. Where a Lucas direction is called for, the advocate should identify the deliberate lie or lies upon which they seek to rely, the significant issue to which they relate, and the basis upon which it can be determined that the only explanation for the lie or lies is guilt, see *Re A, B and C (Children)* [2021] EWCA Civ. 451 paragraphs 57 and 58.
45. Where a court is satisfied that injuries are non-accidental, it should in the first instance identify a perpetrator of injuries if it can do so. If the court cannot do this, it will have to consider which of the adults, with the care of the child within the relevant timeframe, should fall within the pool of perpetrators. The test for identification of a perpetrator/pool of perpetrators is threefold (1) is there a list of people who had the opportunity to cause the injury? (2) Can the court identify the actual perpetrator on the balance of probabilities? (3) Only if it cannot identify the actual perpetrator on the balance of probabilities 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"—*Re B (Children: Uncertain Perpetrator)* 2019 EWCA Civ. 575 paragraph 49.
46. As set out in *Re A (Children)(Pool of Perpetrators)* 2022 EWCA Civ. 1348 paragraphs 33 and 34, it is no longer necessary for the court to direct itself to avoid "straining" to identify the perpetrator. "The "unvarnished" test is now clear: following consideration of all the evidence and applying the simple balance of probabilities, the court either can or cannot identify the perpetrator. Only if it cannot do so should the court then consider whether there is a real possibility that each individual on the list inflicted the injury in question".

## The Medical Evidence

47. The very serious nature of M's injuries, and the complexities of various features of these injuries, led to a number of multi-disciplinary experts assisting in this case.
48. The following experts were instructed pursuant to Part 25 FPR 2010 and have provided numerous reports in this case. They attended a joint meeting in February 2023, the transcript of the discussion is within the bundle.
  - a. Mr Ibrahim Jalloh, Consultant Paediatric Neurosurgeon:
    - i. First Report; 27<sup>th</sup> September 2022.
    - ii. First Addendum Report; 22<sup>nd</sup> February 2023.
    - iii. Second Addendum Report; 11<sup>th</sup> April 2023.
    - iv. Response to Dr Khandanpour and Mr Simmons 26<sup>th</sup> April 2023
  - b. Dr Russell Keenan, Consultant Paediatric Haematologist:
    - i. First Report; 23<sup>rd</sup> October 2022.
    - ii. Addendum Report; 27<sup>th</sup> February 2023.
  - c. Mr Richard Markham, Consultant Ophthalmic Surgeon:
    - i. Report; 25<sup>th</sup> October 2022.
    - ii. Email response to reports of Dr Khandanpour and Mr Simmons 26<sup>th</sup> April 2023
  - d. Dr Kieran Hogarth, Consultant Paediatric Neuro-Radiologist:
    - i. First Report plus Appendix; 25<sup>th</sup> November 2022.
    - ii. First Addendum Report and Appendix; 16<sup>th</sup> February 2023.
    - iii. Second Addendum Report and Appendix; 13<sup>th</sup> April 2023.
    - iv. Response to Dr Khandanpour and Mr Simmons 25 April 2023.
  - e. Dr Anand Sagar, Clinical Geneticist:
    - i. First Report; 13<sup>th</sup> November 2022.
    - ii. Clinical Examination Report and Addendum; 25<sup>th</sup> February 2023.
  - f. Dr Nicola Cleghorn, Consultant Paediatrician:
    - i. First Report; 16<sup>th</sup> December 2022.
    - ii. Addendum Report; 27<sup>th</sup> February 2023.
    - iii. Response to Experts Meeting; 8<sup>th</sup> March 2023.
49. The number of experts involved demonstrates the very complex nature of the case, which changed in various aspects, particularly during the joint experts meeting in February 2023.
50. Following the decision to reinstate the Fact Finding the reports of the two experts instructed by the police were disclosed into these proceedings. Dr Nader Khandanpour, Consultant Neuroradiologist, produced four reports; (i) First report 6 December 2022 (ii) Response to the family experts' reports 26 April 2023 (iii) Addendum report 4 June 2023 (iv) Further Addendum report 15 June 2023. Mr Ian Simmons Consultant Ophthalmic Surgeon provided 3 reports (i) First report 19<sup>th</sup> January 2023 (ii) email response to Dr Hogarth, Mr Jalloh and Mr Markham's reports 25<sup>th</sup> April 2023 (iii) Second report 5<sup>th</sup> June 2023.

51. Although she was not instructed as an expert witness, the court has also had the letter 19 January 2023 from CB, Locum Consultant Paediatric and Adult Neurosurgeon at KC Hospital. CB was M's treating clinician in respect of the scans taken of the arachnoid cyst in December 2022.
52. In addition to considering the written evidence of the experts, the court heard oral evidence from all instructed, save for Dr Keenan. The court also heard oral evidence from AD, the allocated social worker for M 19<sup>th</sup> July 2022 - 26<sup>th</sup> October 2023; ST Specialist Community health nurse who was M's Health Visitor for a considerable period of time; both parents and the maternal grandfather.
53. Mr Jalloh, Consultant Paediatric Neurosurgeon, provided his preliminary opinion on the 27 September 2022 [E198]. He had considered M's hospital notes, medical notes and more particularly the scans of M's brain which were taken on the 2<sup>nd</sup> and 5<sup>th</sup> May 2022. The main injuries that Mr Jalloh identified were set out at para 4.2--(i) multi focal subdural collections consisting of watery fluid on both sides of the head containing acute blood and blood products (ii) parenchymal brain injury, a small area of diffusion restriction to the cortex of the left frontal lobe (iii) a lesion in the splenium of the corpus collosum, which may or may not reflect injury with a small area of diffusion restriction to the cortex of M's left frontal lobe, (iv) M had suffered bilateral retinal haemorrhages. Mr Jalloh confirmed that the MRI taken on the 5<sup>th</sup> May 2022 showed that there was bi-lateral cerebral convexity with subdural collections slightly larger on the left side. He noted that these collections were most prominent anteriorly and extended into the interhemispheric fissure.
54. Mr Jalloh noted that M had an arachnoid cyst. He explained that arachnoid cysts are relatively common cysts that are formed when the brain is developing in utero. Very rarely they can spontaneously rupture causing subdural collection. However, in his opinion rupture would only produce a subdural collection on the same side of the cyst rather than multifocal subdural collections as found in M. An arachnoid cyst would not cause any parenchymal brain injury.
55. In summary, as shown on the scans, M had fluid filled collections on both sides of his brain - situated between the two membranes that enclose the brain.

56. Mr Jalloh noted that no fractures had been identified, and that the blood tests taken at the hospitals appeared to be normal. At that stage, Mr Jalloh's opinion on how M was likely to have received his injuries was as follows:

*"In my opinion, an injury mechanism involving rapid stroke repetitive acceleration - deceleration forces, such as a shaking type injury, is more likely than an impact mechanism to explain this constellation of injuries. The accidental fall from the bed is unlikely to fully explain M's injuries. It is possible that a fall from the bed caused some acute subdural bleeding in the context of established subdural collections caused by an earlier episode of trauma. In my opinion, in the absence of any underlying bleeding or metabolic disorder, M was likely subject to an episode of non-accidental injury. The presence of bilateral haemorrhages raises the suspicion of non-accidental injury."*

57. He indicated that:

*"Re-bleeds into already established chronic subdural collections are known to occur with minimal force following trivial trauma. It is possible therefore that if M had established subdural collections at the time of the fall from the bed he was predisposed to an acute bleed."*

He went on to opine that the radiology was consistent with a single recent episode of trauma:

*"I am not able to exclude an earlier episode of trauma that caused chronic subdural collections. The clinical presentation is consistent with a recent episode of trauma shortly before his presentation. The vomiting for several days suggests he might have been subject to an earlier episode of trauma".*

58. Mr Jalloh was clearly concerned that the explanation of the fall from the bed could not be a full explanation for all of M's injuries. It was not that it did not explain the acute injury but rather because the acute injury could not explain everything else that could be seen. i.e. in Mr Jalloh's opinion there had to have been something else before the bed fall. He indicated that these signs were consistent with a recent episode of trauma within hours, or more likely within minutes, of M's change in presentation on 1<sup>st</sup> May 2023. Mr Jalloh noted that in hospital M displayed more specific signs of raised intracranial pressure including eye movement palsy, bradycardia and hypertension. This raised the possibility that the vomiting was also caused by raised intracranial pressure. It followed, therefore, Mr Jalloh said, that M may have suffered an episode of trauma, several days (or longer) prior to his presentation 1<sup>st</sup> May 2023, that caused the subdural collections which led to raised intracranial pressure and caused the vomiting.
59. Dr Keenan, Consultant Haematologist, reported that all the blood tests carried out on M had produced normal results; there was nothing from the tests which could demonstrate any underlying propensity for M suffering the injuries that he did.

60. Dr Sagggar, Consultant Clinical Geneticist, reported on 13 November 2022 that from the test results that he had considered there was no genetic predisposition in M to account for the injuries that he had suffered. Vascular Ehlers-Danlos syndrome (EDS) and Osteogenesis Imperfecta could both be excluded. Dr Sagggar also reported [E314] that there was evidence to show M's mother to be on the hypermobile spectrum [HSD]. Dr Sagggar explained that HSD was an inherited autosomal dominant trait meaning that there was a 50% risk of the condition being passed to M. That may predispose M to a greater degree of bruising/bleeding from any given force.
61. Dr Sagggar confirmed that there was no evidence to confirm that M had inherited the condition. On the 25 February 2023 Dr Sagggar provided a second report. By that time, he had received CB's letter of 19<sup>th</sup> January 2023 and had seen the images from 9<sup>th</sup> December 2022. He confirmed his opinion as set out in his original report and added there was little risk of any Hyper Mobile Spectrum disorder in M [HSD]. Dr Sagggar stated that in his opinion it was unlikely that any HSD alone in M (if present) had led to such cerebral and/or retinal bleeding at presentation in the absence of adequate plausible and precipitant forces.
62. Dr Sagggar's report confirmed that a Variant of Unknown Significance (VUS) had been identified in a gene associated with low platelet count. There appeared to be no correlation with the potential effect of this as seen in the haematology results and what happened to M. In Dr Sagggar's opinion the VUS would not have caused M's sudden collapse.
63. Mr Markham, Consultant Ophthalmic Surgeon, opined in his first report that the combination of brain injury, intracranial injury and retinal haemorrhage was a duad, and not a triad diagnostic of abusive head injury because the retinal haemorrhages were very likely to be secondary to the intracranial changes:
- "The causes of M's injuries should depend on the causation of his intracranial haemorrhage and brain injuries. A fall as the cause of the retinal haemorrhages cannot be completely ruled out but neither can non-accidental injury be ruled out simply by the presence of retinal haemorrhages".*
- He deferred to the paediatric, neurosurgical and neuroradiological colleagues [Dr Cleghorn, Mr Jalloh and Dr Hogarth respectively] as to the possible significance of subdural haemorrhages of different age, if such there were. He continued that as far as the timing of the retinal haemorrhages was concerned, they were most likely to have followed the intracranial haemorrhage and a presumed rise in intracranial pressure by a few minutes.

64. Dr Cleghorn, the Consultant Paediatrician, confirmed in her first report 16<sup>th</sup> December 2022 that M's glutaric aciduria levels were normal at birth; the heel prick test had not identified any problems and that Menkes disease was rare. She confirmed that in her opinion M was unlikely to have a medical condition which was responsible for, or contributed to, the brain injury, and that trauma was the likely cause. Dr Cleghorn deferred to the expertise of Dr Hogarth and Mr Jalloh on the appearance of the injuries on the neuroradiology and the likely mechanism. She said that although she deferred to both experts on this issue, from a paediatric perspective she agreed that the subdural haemorrhages, the clinical signs and retinal haemorrhages were all of concern. She noted that there did not appear to be a medical cause for the findings from the investigations she had seen so far.
65. Dr Cleghorn noted that M's presentation on the day [1<sup>st</sup> May 2022] would suggest that there had been an acute event, but she could not rule out there being a previous undisclosed event given the opinions of the neuroradiologist and also the history of M being unwell in the previous two weeks, and more specifically the few days, before the reported fall. She endorsed Dr Hogarth's suggestion of an experts meeting taking place.
66. Dr Cleghorn noted Mr Markham's opinion as being that if the haematological results were normal and genetic causes were unlikely that trauma was the most likely cause of the retinal findings. She noted the need to consider other causes but concluded that from a paediatric perspective, if it was unlikely that there were metabolic or clotting problems which might be responsible for the physical signs then the retinal haemorrhages should be considered as being traumatic in origin. In M's case, given that he also had brain haemorrhages, then a head injury was the most likely trauma. However, Dr Cleghorn indicated that this this should also be a topic for further discussion if the court agreed to a meeting of the experts.
67. Dr Hogarth, Consultant Paediatric Neuro-Radiologist, advised in his first report that the appearance of the injuries on the scans was suggestive of low density chronic subdural collections, and therefore not recent. In his opinion they could be evidence of possible inflicted post-natal trauma. He too had noted the presence of the arachnoid cyst but did not consider that it had any bearing on the causation of the intracranial injury as suffered by M. Dr Hogarth suggested that if the subdural collections were chronic, as he believed, then the small amount of fresh blood that had been noted on the scans could have been caused by a fall such as the parents had described. Dr Hogarth explained that arachnoid cysts were not unusual features in themselves, but that rupture was rare. If there had been a rupture the fluid would usually have collected on the same side of the brain although he accepted that it was possible for fluid to track from one side to the other.

68. Notwithstanding these points Dr Hogarth remained firm in his opinion at that stage that inflicted injury could not be excluded. In his opinion the subdural collections were unlikely to have resulted from a birth injury; such bleeds would be unlikely to persist, he said, for eight months after birth.
69. The picture emerging from the totality of the expert evidence in late November 2022 was that underlying medical and genetic conditions could be excluded as contributing or causing M's injuries. Mr Jalloh and Dr Hogarth considered that non-accidental injury could not be excluded as a possible cause for the injuries.
70. M remained under review at the KC Hospital in respect of the arachnoid cyst and on 9<sup>th</sup> December 2022 he had a further scan. His treating paediatric surgeon, CB, provided a letter, dated 19<sup>th</sup> January 2023, which updated M's situation and prognosis. It was confirmed that the left temporal arachnoid cyst, Galassi type III remained present, and that the subdural collections had by then resolved. The cyst was clearly still of concern at that stage as CB recommended a further scan for M in 18 months' time and advised that M should avoid contact sports in the future. That letter was circulated to all the experts.
71. Mr Jalloh provided an Addendum Report dated 22<sup>nd</sup> February 2023. Having considered the letter from CB, the brain imaging for May 2022 and December 2022, he noted that M's arachnoid cyst had grown between May and December 2022, as seen on the second MRI compared with the first, causing more *"squashing of the brain"*. He set out his opinion that:
- "Arachnoid cysts can also rupture causing cerebrospinal fluid [CSF] to leak into the subdural space causing a subdural hygroma. Again, this is rare and when it occurs it is usually on the same side of the cyst although bilateral hygromas can occur. My impression of subtle expansion of the middle fossa disproportionate to the size of the cyst is supportive of cyst rupture. The growth in the arachnoid cyst suggests that it is accumulating CSF. Arachnoid cysts can grow over time due to trapping of CSF that can flow in but cannot flow out or due to the production of CSF by the cyst membrane. Most arachnoid cysts do not grow but some do."*
72. Mr Jalloh concluded:
- "As M's arachnoid cyst has grown and is large on the December 2022 MRI, I add more weight to its possible contribution to the subdural collections than placed in my original report. In my opinion it is possible that subdural collections [hygromas] were caused through rupture of the arachnoid cyst following trivial trauma, which then predisposed M to a subdural bleed from the bed fall."*
73. Although Mr Jalloh was prepared to consider that there might be an explanation for M's injuries which did not involve NAI, he was not prepared to discount the possibility of non-accidental injury altogether.



74. Dr Hogarth's second report is dated the 16<sup>th</sup> February 2023. In that report Dr Hogarth did not consider that the December 2022 scan changed matters as far as causation of M's injuries was concerned. He stated that he was:
- "..unable to explain the small focus of tissue damage in the left frontal lobe cortex or the blood within the posterior fossa or the signal change in the splenium of the corpus callosum seen on the MRI head scan from May 2022 purely on the basis of there being an arachnoid cyst".*
75. Notwithstanding Mr Jalloh's movement on causation, prior to the experts meeting in February 2023 the experts, more particularly Mr Jalloh and Dr Hogarth, remained of the opinion that non-accidental injury could not be excluded as the cause for M's injuries.

### **Part 25 Experts Meeting – 27<sup>th</sup> February 2023**

76. A transcript of this very important meeting appears in the bundle at E440. At the meeting Dr Keenan and Dr Saggar confirmed their positions that there were no underlying medical or genetic reasons which would predispose M to suffer the injuries sustained. They deferred to Mr Jalloh and Dr Hogarth on causation. Dr Cleghorn made clear that she too deferred to these experts as to causation. Mr Markham, Consultant Ophthalmic Surgeon confirmed his opinion:
- "I think it's almost certain that the retinal haemorrhages are secondary to intercranial haemorrhages and therefore, it's not a triad, which is diagnostic, it's a duad, and therefore of course I'm putting the onus on Mr Jalloh and his neuro-radiology colleagues to come up with the reason for the injuries".*
77. The transcript of the meeting shows that Mr Jalloh and Dr Hogarth were considering very carefully whether the arachnoid cyst could have played any part in causing the subdural collections identified in the original scans in May 2022. Mr Jalloh set out his thinking during the meeting as follows [E447]:
- "In the context of already having chronic collections, a bed fall, a little bit of acute subdural bleeding was sufficient to push him over the edge to cause his presentation with apnoea... with encephalopathy, and perhaps also therefore with retinal haemorrhages. So for me the bed fall is fairly consistent with the acute subdural blood seen on the scan. So then the question comes down to what is the source of the chronic subdural collections. I must admit only on reviewing the December, the second scans or the later scans in December and looking back at the scans in May I added more weight to the possible importance of the arachnoid cysts [sic]... so I think it is possible that M had an arachnoid cyst that was actually, you know, initially quite large, but ruptured causing subdural hygromas on both sides of the head with a progressively increasing intra cranial pressure over the few days prior to his presentation and that caused the vomiting that he presented with prior to his index presentation. Then the bed fall on the day of presentation pushed him over the edge. So had chronically raised pressure at that point, presenting with encephalopathy, perhaps developed retinal haemorrhages because of that."*

78. Mr Jalloh concluded during the experts meeting:

*"I suppose this possibility of an arachnoid cyst rupturing, none of this excludes the possibility of a non-accidental injury, it's a potential vulnerability in M if he did suffer inflicted injury, but I think it's just possible that he could have had a ruptured arachnoid cyst following trivial trauma, so not necessarily inflicted trauma that resulted in these chronic collections with the then acute event. I think we can't exclude that in this case."*

79. Dr Hogarth had always had concerns about various minor matters seen on the scans which he could not explain: [1] the small focus of tissue damage in the left frontal lobe cortex; [2] blood within the posterior fossa; and [3] the signal change in the splenium of the corpus callosum. However, at the experts meeting he indicated [E452]:

*"So I think when I'm listening and trying to interpret these extraneous elements outside the finding of subdural collections, what I'm saying is that I'm offering the possibilities for these different findings and I'm saying where the level of confidence is low, and I'm saying where things are essentially unknown. This is why it's a very difficult case, it's a bit of a grey case because its very difficult to exclude inflicted injury and its very easy to explain lots of areas and elements that are seen on the scan from trauma because trauma can cause lots of different presentation and patterns of injury in the head, so we can't exclude it. But on the other hand, what I can say to the court is the overall picture here is not, what could we call it to use a poker card game term, a "full house" of findings that strongly point to an inflicted injury. We're not in that context in my view which is why I was deliberately very circumspect about offering an executive summary on my report, because there are several elements here where I am leaving question marks hanging over some of the things I've seen on the scans, so I'll leave my comments there".*

80. Then a short time later in the discussion having considered another possible explanation for the posterior fossa anomaly Dr Hogarth said [E452]:

*"So I do still remain somewhat uncomfortable with a short fall producing that diffuse haemorrhage, but ultimately it's an unknown." Then he continued, "I don't think I can say its highly suspicious for anything like inflicted injury, but I just remain somewhat uncomfortable, because this is a difficult case to provide a clear explanation to the court for, in my view".*

He went on to say [E456]:

*"Now what we can say, and this is largely I think because of Mr Jalloh's comments on the arachnoid cyst, I think we do have to consider very seriously that the arachnoid cyst is responsible for the chronic subdural collections and a short fall would therefore be occurring in an infant who is unusually vulnerable to a low mechanism of trauma. So, we then have some of the other elements which we've discussed, and I think they can all be encompassed potentially from that scenario. I think that's a potential explanation for what I'm seeing on the scans which doesn't leave me with significant discomfort if I consider the possibility that the blood that I was seeing around the tent is actually on the tent rather than the posterior fossa, which I think is possible".*

81. Dr Hogarth continued [E457]:  
*“We can explain the findings on the scans with an inflicted injury but we can also, I think, entertain the explanation offered by the parents as being a plausible cause involving the short fall from the bed for the constellation of findings here. I’ve managed to find a sharper degree of focus through the discussion this evening and having considered what Mr Jalloh’s comments have been as well, that’s been extremely influential”.*
82. That was the extent of the expert evidence at the time of the hearing on the 20 March 2023. At that hearing it was decided that some further questions would be put to Mr Jalloh and Dr Hogarth, specifically whether they could indicate which of the two hypotheses was the more likely cause for M’s injuries.
83. Mr Jalloh’s responses are dated the 11<sup>th</sup> April 2023 and Dr Hogarth’s the 13<sup>th</sup> April 2023. They are, in the context of these proceedings, very important documents [E460 and E462].
84. As can be seen from the questions submitted to both experts they were asked to confirm that they believed that there were now two possible hypotheses for what had caused M’s injuries; one in which the cyst and the bed fall explained all the injuries and one in which a non-accidental injury explained some or all of the injuries. Subject to their responses to that question being confirmed the experts were asked which hypothesis was more likely than not to have caused M’s injuries.
85. Mr Jalloh confirmed his opinion that there were two possible hypotheses for M’s injuries, although he was unable to say which of the hypotheses was more likely than not to have caused M’s injuries. He did however say in response to question 2 [E460]:  
*“My preferred explanation for M’s clinical presentation is a recent episode of trauma shortly before his presentation that caused apnoea, a possible seizure, and fluctuating conscious level, and an earlier event several days [or longer] prior to his presentation that caused subdural collections, raised intra cranial pressure and vomiting. Possible recent trauma includes the bed fall or an episode of non-accidental injury. Possible causes of the earlier event that caused subdural collections include rupture of the arachnoid cyst from trivial trauma or an episode of non-accidental injury. In my opinion there are no features of M’s clinical presentation in hospital or radiology that distinguish these hypotheses.”*

86. Dr Hogarth provided detailed responses to the questions. He indicated that having carefully reviewed the scans again he believed that the blood he had been concerned about, was lining the free edge of the tentorium cerebelli and was not in the posterior fossa. He confirmed that he had revisited the imaging and, in his responses, referred to various slides and indicated that he could now see that the blood was over the tentorium rather than beneath it in the posterior fossa. Further, he believed that the short fall from the bed could have caused the injury to the bridging veins if there were subdural hygromas present at the time of the fall. He referred to the conclusion reached during the experts' meeting that the formation of subdural hygromas could occur in the context of an arachnoid cyst rupturing [E462].
87. Dr Hogarth continued [E463]:
- “Having reflected extensively on this particularly complex case, I am now comfortable in accepting the possibility that the combination of the arachnoid cyst and subdural hygromas could have made M unusually vulnerable to low level mechanism of injury. In such a scenario a short fall as described could account for the unusual array of features seen on the scans. In consideration of the possibility of inflicted injury, I would say that this cannot be entirely excluded on the basis of the neuroradiology evidence but some of the features shown on the scans are not typically seen in the context of a shaking mechanism of injury in my experience brackets [i.e. the spot in the splenium of the corpus callosum and the tiny cortical injury to the left frontal lobe]. This case includes a number of unusual or anomalous features that are not typical of inflicted injury, in my view. On that basis I see no reason from the medical opinion perspective to favour inflicted injury as a cause for the findings over accidental injury but I leave it to the court to decide which explanation it prefers”.*
88. In response to the question as to which of the hypotheses was more likely than not to have caused M's injuries, Dr Hogarth stated:
- “I am comfortable with accepting the short fall from the bed, in the context of there being subdural hygromas and an arachnoid cyst, as an explanation for the findings on scans. I see no particular reason to favour inflicted injury on the basis of what is shown on the scans.”*

89. What was clear from the expert evidence at that time, particularly that of Mr Jalloh and Dr Hogarth, is that M's injuries were very complex. Certain aspects of the injuries, more particularly those identified by Dr Hogarth, presented challenging questions on causation. At the beginning of the medical investigations, it was not only the bilateral subdural collections that raised concern of potential non accidental injury, but the significant bilateral retinal haemorrhages. As Mr Jalloh said in his first report, the existence of the bilateral retinal haemorrhages raised the suspicion of non-accidental injury. Mr Markham's evidence as to the potential cause of the bilateral retinal haemorrhages was very important. In his report he had excluded birth trauma and the mouth-to-mouth resuscitation performed by the grandfather as possible causes for the retinal haemorrhages. He was clear in his opinion that the bilateral retinal haemorrhages were likely to have been secondary to the intracranial pressure changes.
90. As is often the case when new evidence is made available, experts have to refine or revise their preliminary opinions pursuant to their duty to the court. Although the existence of the arachnoid cyst had been known from the beginning, it was not until the December 2022 scan was considered by Mr Jalloh that the cyst assumed greater significance for him, particularly the fact that it had grown by so much between May and December 2022. It was only then that he considered an earlier possible rupture as being a credible reason for the subdural collections. As can be seen from Dr Hogarth's responses to the questions, also set out in some detail earlier in this judgment, he had explained that his doubts about some of the features of M's injuries could now be explained by the chronic subdural collections having been caused by a rupture of the cyst and the other injuries by the fall from the bed. Dr Hogarth also set out in his response the very important point that some of the features of the injuries, as seen on the scans, were not typically seen in the context of a shaking mechanism injury, the spot in the splenium of the corpus callosum and the tiny cortical injury to the left frontal lobe [E463].
91. It was because of these conclusions that the Local Authority sought to withdraw proceedings. As referred to earlier in this judgment, when the reports of Dr Khandanpour and Mr Simmons became available their position changed.

92. In his first report 6<sup>th</sup> December 2022 [E470] Dr Khandanpour reviewed the materials he had been sent by the instructing police officer. He set out his summary opinion from considering the May 2022 images [E495]: -

5.5 Regarding the large collections with dark density there are three main differential diagnosis as follows:

5.5.1 long standing subdural haematomas overlying both cerebral hemispheres. Subdural haematoma refers to haemorrhage overlying the brain surface within the upper brain over the arachnoid membrane.

5.5.2 Hygromas overlying both cerebral hemispheres. Hygroma refers to abnormal extravasation / leakage of fluid within the space overlying the cerebral service.

5.5.3 Prominent CSF spaces may represent a normal anatomical variant known as B9 enlargement of subarachnoid space in infancy.

5.6 Differentiation of these conditions on non-enhanced CT is not quite accurate. However these collections will be further evaluated on the follow up MRI.

5.7 In particular, the collection overlaying the temporal lobe / sylvian fissure may represent an arachnoid cyst. However this differential diagnosis is quite less likely because the collection is in continuation with the rest of CFS collection. In addition, there is no “enclosed” membrane around this lesion to support this differential diagnosis. Moreover, the local mass effect from the collection is more diffuse than focal. Therefore presence of arachnoid cyst is quite less likely and most probably the dark density changes overlying left cerebral hemisphere are representing a type of collection.

5.8 There is a relatively small area of grey collection overlying the left frontal lobe (image 3). The appearances are in keeping with subdural haematoma.

5.9 There are a couple of areas linear bright density overlying the right frontal lobe. The appearances are in keeping with cortical vein thrombosis (image 4).

93. Dr Khandanpour noted at 5.21 [E503] that there was no soft tissue swelling overlying the skull to represent haematoma at the site of trauma. Nor was there any skull fracture. At E507 Dr Khandanpour opined that the dark collections overlying the cerebral hemispheres most probably represented subdural haematomas [blood collections] of a longstanding nature. He went on to say that if they were hygromas [fluid/CSF] it would not be possible to age them. He considered that the small gray collection overlying the left frontal lobe was most probably a small subdural haemorrhage, between 3 weeks to 3 days old.

94. At E577-578 Dr Khandanpour explained his reasons for preferring the explanation that the subdural collections were haematomas rather than hygromas. At para 5.43 [E522] Dr Khandanpour identified an area of restriction diffusion associated with T1 signal changes involving the left frontal lobe and indicated:

*“The appearance most probably represent focal brain laceration.”*

95. At para 5.44 Dr Khandanpour referred to several linear foci of susceptibility signal changes overlying both cerebral hemispheres that most probably represented cortical vein thrombi. At para 6.4 [E528] he set out the injuries he had identified from the scans. At para 6.6 he described the differential diagnoses to be considered, including underlying disorders involving coagulation/clotting; birth trauma; accidental trauma.
96. Dr Khandanpour then considered in some detail the various potential causes for M's presentation. He stated at para 6.8 that the marked cerebral surface collections within the skull are consistent with trauma with higher levels of severity that does not usually occur in daily activities. At 6.8 .1.1 [E530] Dr Khandanpour stated that the pattern of diffusely distributed subdural haematomas with membranes is likely to be associated with severe "to and fro" shaking trauma of the head.
97. At 6.1.8 Dr Khandanpour discounted the possibility of there being an arachnoid cyst present. However, he did mention that a rupture of an arachnoid cyst could cause increased intracranial pressure requiring a shunt to be inserted.
98. Dr Khandanpour's summary appears at E545:  
*"In summary there has been most probably haemorrhages of various ages overlying both cerebral hemispheres. A differential diagnosis is hygroma for some of cerebral surface collection. There has also been associated tiny infarction of the splenium of the corpus callosum and cortical vein thrombi. There has also been most probably left frontal lobe small laceration of the brain tissue. Considering the above differential diagnosis is ruled out by related experts in a non-mobile child the appearances are most probably representing severe head trauma including non-accidental head trauma. This does not usually happen during daily activities of life. The most likely mechanism is severe "to and fro" shaking. There has been most probably more than one episode of trauma, [possible one single episode of trauma cannot completely be ruled out].*
99. Mr Ian Simmons, Consultant Ophthalmic Surgeon, provided a report to the police dated 19<sup>th</sup> January 2023. It appears within the bundle at E567. Mr Simmons is a very experienced practitioner and, like his Part 25 counterpart, is very experienced in providing expert reports for the court and giving evidence. Mr Simmons recorded the ophthalmology findings at paragraph 6.5.22 [E574]  
*"There was no evidence of vitreous haemorrhages but there were retinal haemorrhages more in the left eye than the right eye. In the right eye there were diffuse multi layered flame haemorrhages which were too numerous to count and small in size at the posterior pole and beyond the macula arcades. There was bleeding near to the optic nerve superonasally. The left eye had significant and diffuse large posterior polar haemorrhages extending from the macula to the optic disc with associated retinal oedema. The left optic nerve was hyperaemic and swollen".*

100. Mr Simmons' report then dealt with the potential differential diagnosis in some detail. He referred to the Royal College of Ophthalmology Child Abuse Working Party reviews in 1999, 2004 and 2013 which had considered the potential impact of falls and minor household trauma. In 2004 it had concluded that minor falls would only exceptionally give rise to subdural and retinal bleeding. In 2013 it was noted that short distance falls were unlikely to cause retinal haemorrhages if the injury was not severe. He set out at paragraph 3.11 that in rare cases accident falls, especially those associated with subdural haemorrhages, can be associated with retinal haemorrhages but that these tended to be unilateral, localised, and superficial.
101. Mr Simmons referred to various studies which supported the view that diffuse bilateral retinal haemorrhages were unlikely to result from a short distance fall. At paragraph 3.26 [E580] Mr Simmons considered the potential effect of raised intracranial pressure and indicated that this was often associated with swelling of the optic nerve head [known as papilloedema]. Mr Simmons' conclusion at paragraph 3.29 was that as the right optic nerve was not swollen but the left was noted to be hyperaemic "it was unlikely that M had significantly elevated intracranial pressure".
102. Mr Simmons also confirmed that it was unlikely that the CPR carried out by M's grandfather was the cause of the retinal bleeding. From paragraph 3.36 to the report Mr Simmons outlined the significant features of abusive head trauma, AHT, and noted that AHT accounted for the majority of fatal or life-threatening injuries due to abuse in infants.
103. Mr Simmons emphasised the fact that the presence of bilateral retinal haemorrhages was highly suggestive of AHT. There was no type of haemorrhage that is only found with AHT and the haemorrhages could be flame shaped, dome shaped, dot, blot or white centred. Nor was there any characteristic size, distribution, or location of vitreo-retinal haemorrhages which are seen exclusively in AHT. Mr Simmons explained that bilateral haemorrhages were reported in 75% of the reported cases of AHT, with haemorrhages only affecting one eye in 25% of cases.
104. Mr Simmons' opinion was that the trauma that caused the subdural haemorrhages also caused the retinal haemorrhages [E584]. With respect to the retinal haemorrhages the trauma would have occurred within 7-10 days of examination on the 6<sup>th</sup> May 2022, that is no earlier than the 26<sup>th</sup> April 2022. Mr Simmons believed that the most likely cause of the bilateral retinal haemorrhages was a shaking type motion, inflicted, and which required a significant amount of force applied. He did not consider that the history of the fall from the bed, as reported by the parents, could have caused the retinal haemorrhages.



### **The Evidence Heard at Court**

105. At court, in his oral evidence, Dr Saggar agreed that there appeared to be two hypotheses for M's injuries. Firstly, the arachnoid cyst rupture and subsequent fall, and secondly AHT/ [non accidental injury]. Dr Saggar confirmed that vascular EDS could be excluded as a condition affecting M. The VUS identified in the ANKRD26 gene in M could not have caused his sudden collapse. The VUS was linked to platelet deformity and Dr Keenan had confirmed that there was no platelet anomaly identified in M's testing.
106. Dr Saggar also confirmed that there was a 50% chance of M inheriting his mother's hypermobility condition, HSD, but it was difficult to identify in such small children. He agreed with Mr Garrido that it was unlikely that any risk of HSD alone in M had led to such extensive cerebral bleeding and said that he had made that clear in his report. Dr Saggar explained that no gene had yet been identified for EDS/3, hypermobility spectrum disorder - HSD. It was not possible at this stage to exclude it being present in M because of his mother's condition. Dr Saggar said that he had not identified any hypermobility features with M's father.
107. Dr Saggar confirmed that whilst clinically it was not possible to rule out M having HSD he thought that M did not fall within the accepted range. He agreed that it was reported that arachnoid cysts were prevalent in people with HSD, but suggested that it might be that these patients were scanned more often. In his opinion the fact that M did not appear to have suffered easy bruising since 1<sup>st</sup> May 2022 supported his view that M did not have HSD
108. Dr Saggar explained that the most common feature of HSD is easy bruising and bleeding. If HSD was present and bleeding was more extensive, the bleeding might take longer to clear. It was unusual to suffer retinal haemorrhages as a result of HSD. Dr Saggar agreed that if M had HSD together with the arachnoid cyst, that could account for prolonged bleeding in the cranium, but it was not possible to be certain. The cause for excessive or longer bleeding in patients with HSD was because the connective tissue was fragile. The thin capillaries which join arteries to veins are more prone to rupturing.
109. Giving her oral evidence Dr Cleghorn confirmed that M's clinical presentation did not assist with deciding what was the more likely to have happened of the two hypotheses before the court. She acknowledged that a lot of the clinical features M presented with would suggest AHT; for example, the seizures, the retinal haemorrhages and apnoea but that did not assist with deciding what was the most likely cause for his injuries. Dr Cleghorn told us that she was unable to exclude either of the two possible explanations for the injuries. She deferred, she said, to the expertise of Dr Hogarth and Mr Jalloh. She was not surprised, she said, to see that Mr Simmons' opinion of the retinal haemorrhages was the result of non accidental injury. Dr Cleghorn remarked that she had not been assisted by the differences of opinion between the various experts and that reading the ophthalmology reports had been confusing for her.

110. Dr Cleghorn explained that initially her view, that the injuries were like to have been non accidental, was predicated on there being no underlying clinical cause identified. The arachnoid cyst had not been identified as being significant at that time. Dr Cleghorn confirmed that M would not necessarily present with different characteristics if he had chronic subdural collections. His parents would not necessarily notice anything different or unusual in him. Dr Cleghorn agreed with Mr Jalloh's suggestion that the vomiting that M had suffered was significant, but she made the point too, that babies suffer from such symptoms and illnesses all the time. Linking the vomiting to the formation of the subdural collections might be fair, but in her opinion it was being done with the benefit of hindsight.
111. Dr Cleghorn explained that if M had fallen from the bed it would be difficult for him to hold his head up from the floor because at his age he had insufficient neck tone or head strength to do so. Therefore, usually with falls of infants of this age they were likely to land on their heads. If M had landed on his shoulder it was likely his head would also hit the ground because he would not be able to hold it up. Dr Cleghorn did not consider that it was surprising that a child of M's age, then eight months, would be rolling so she thought it was quite possible he could have rolled off the bed. She agreed that the body map completed by the clinicians at hospital, when M was first admitted, showed two areas of soft swelling which were consistent with a fall.
112. At court in his oral evidence Dr Hogarth confirmed his opinion that there were two hypotheses for M's injuries firstly the rupture of the arachnoid cyst and then the fall and secondly AHT/non accidental injury. Dr Hogarth explained that he was now comfortable with one possible explanation being the combination of the rupture of the arachnoid cyst and formation of hygromas leading to M being susceptible to a low level of force causing the acute trauma for example the fall from the bed. He could not differentiate between the two hypotheses so inflicted injury could not be ruled out.
113. In his opinion the bilateral subdural collections were chronic in nature. With respect to the one bright spot of blood identified on the scan he considered that it was possible that there had been further minor bleeding between the two scans on the 2<sup>nd</sup> and 5<sup>th</sup> May 2022 but he could not be sure of that. Answering questions in cross examination Dr Hogarth explained that his opinion had evolved since he had studied the scans more carefully, particularly the December 2022 scans. They had shown that the arachnoid cyst in the left middle cranial fossa had become larger since May 2022. It had grown from medium size to "impressively large". The cyst was not following it's natural history of a common arachnoid cyst. The issue of the cyst had become more important to consider-- was it benign or one of those rarities that can cause trouble.

114. Dr Hogarth explained that in his opinion the bilateral subdural collections were hygromas (fluid) associated with the dynamic cyst. This dynamic cyst had enlarged in volume between May and December 2022; it was an unusual feature. There had been nothing to suggest that the cyst was out of the ordinary on the May 2022 scans. Dr Hogarth commented that the scans taken 9<sup>th</sup> December 2022 show that by that time the hygromas had resolved
115. Dr Hogarth confirmed to Mr Garrido KC that he had changed his opinion as to the location of these small spots of bleeding. It was not in the fOssa but on the tentorium. He believed that this small acute bleed could be explained by a fairly low-level trauma, the existence of the collections reached the injury threshold. Dr Hogarth was still of the opinion that there was some parenchymal brain injury but the cause was unclear, he said. It could be a venous infarction; the location was not typical for traumatic injury. Dr Hogarth referred to the MRI image 5<sup>th</sup> May 2022 [page 1261] and pointed to the wedge of tissue (indicated by three green arrows) which showed whiter than the surrounding tissue. He explained that the most vulnerable parts of the head for traumatic head injury are the frontal lobes and anterior temporal lobes as they sit against the surfaces of the skull. On the scan it showed that the tissue was not near a bony area. It was unusual to see traumatic parenchymal contusion there. It showed restricted diffusion which in his opinion could mean a venous infarction.
116. Dr Hogarth made it clear that he could not be certain of being correct but in his opinion it was unlikely to be a traumatic injury because of the location. Considering whether it could be a laceration, Dr Hogarth referred to the Palifka paper on parenchymal brain laceration (PBL) and the criteria that paper proposed. In applying those criteria he said that he had not seen anything on the scan that accorded with them. Dr Hogarth indicated that if Palifka was correct then it was not PBL. Dr Hogarth said that in his own research he had found seven cases with PBL and that it was usually found at the severe end of brain injury or trauma for example a laceration in life threatening circumstances. Usually, he said, a laceration or cut would be seen with serious brain injury.
117. The damaged tissue seen in M [page 1261] showed that the injury was not in that category, so he thought it was unlikely to be PBL.
118. Dr Hogarth accepted that there would be different expert views with respect to small lesions however he did not consider it came within the Palifka criteria for PBL; there were no blood products or degradation seen. He confirmed his view that the MRI scan of the 5<sup>th</sup> May 2022 [page 1250] demonstrated that the cortical change would date back to the 21<sup>st</sup> April 2022, give or take a day or two. He believed that would be the time frame for the acute bleed. He could not pinpoint the time for the restriction diffusion but from the MRI scan he saw the timeframe would be up to two weeks before the scan was taken.

119. Dr Hogarth agreed that the cause of the acute blood could be the same trauma that caused the cortical damage. However, he repeated that it was not possible to date either the blood or the cortical injury. Dr Hogarth confirmed that he had reached his first conclusion, that the injuries were most likely inflicted when there had been no suggestion of a rupture in the cyst.
120. When it was put to him that he had not qualified his first opinion, as he was doing now, Dr Hogarth disagreed. All he was doing he said was extracting the information from what could be seen over the series of scans and assessing that information. At the beginning the cyst had not formed part of this assessment. Now that there was greater knowledge about the cyst and what might have happened, the overall situation had to be reviewed with the benefit of that knowledge. Dr Hogarth confirmed that his first report had been based entirely on what was known at that time.
121. Dr Hogarth explained that by the time of his second report, February 2023, he still considered these subdural collections were more likely caused by trauma. That was his view before the experts meeting 27<sup>th</sup> February 2023. He had concerns about the signal change in the corpus callosum and had only started to consider the possibility of the cyst being important during the experts meeting. Dr Hogarth explained that in his experience in medicine the experts try always to find a consensus on the diagnosis that fits with what can be seen. He confirmed that his opinion had evolved as more information became available. He believed it was his duty to review and revise his views as and when necessary. M's case was complex and Dr Hogarth said that he had found it difficult to deal with all the different issues which arose. He said that he had needed to understand whether or not the cyst was simply a red herring or could be implicated in M's injuries.
122. Dr Hogarth accepted that just because the cyst had grown between May and December 2022 did not necessarily mean anything had been happening to the cyst before May 2022. There was no evidence before the court of its size before May 2022. However, he did not accept that the cyst would have had to have been larger pre May 2022 to contribute to the subdural collections. He made the point that that was simply unknown.
123. As set out in the transcript of the experts meeting [page 1419 at 29:39] Dr Hogarth said that he had been trying to piece together the fresh retinal bleeds which may be said to have resulted from head trauma and the chronic subdural collections. He said that he accepted Mr Markham's opinion about the incidence of retinal bleeds (resulting from raised intracranial pressure) but could not still say which of the two hypotheses was more likely. In his opinion the radiological evidence sat equally well with both the ophthalmologic opinions.

124. It was suggested to Dr Hogarth that if Mr Simmons was correct and the retinal haemorrhages resulted from AHT then there must have been significant trauma which mitigated against the ruptured cyst theory. Dr Hogarth disagreed with that point, stating that the cyst could still be implicated in the creation of the collections; the hygromas could have arisen from the cyst rupture, and explained the features on the scans.
125. Explaining his change of opinion on the blood spot Dr Hogarth said that on re-examining the images he was satisfied that the blood was on the outside of the tentorium. He had viewed the slide showing the Sagittal presentation which demonstrated that the black line could be interpreted as being on the tentorium membrane. Dr Hogarth said that he was comfortable with that explanation rather than his earlier opinion that it was blood in the cerebellum.
126. Mr Jalloh confirmed his opinion at court that there were two differential hypotheses for M's injuries; one the rupture of the arachnoid cyst and the subsequent fall, or two, non-accidental injury. Mr Jalloh commented that in his opinion there was clinical evidence of chronic long-standing collections plus acute injury. If the cyst had ruptured that could be a traumatic injury although he conceded that rupture was rare with arachnoid cysts. The chronic collections would give rise to an increase in intracranial pressure with the second traumatic event occurring just before M presented at hospital. Mr Jalloh explained that he had identified one area of restricted diffusion and a lesion to the frontal lobe on the corpus callosum. He explained that parenchymal brain injury was not always caused by trauma; for example it could arise from a medical condition. In his opinion, with shaking injuries the diffuse restrictions would be seen across both sides of the brain. A small spot of diffuse restriction would be less likely to be associated with brain injury.
127. Mr Jalloh accepted that he had changed his preliminary view about subdural collections only appearing on the same side as a ruptured cyst. Mr Jalloh explained that in his clinical practice he had only seen collections appearing on the one side. After considering the December 2022 scans, he had reviewed the relevant literature and found cases where rupture of the cyst had caused collections to both sides Donaldson et al 2000. Dr Hogarth had also identified a case with a child with a ruptured cyst and bilateral collections.
128. Mr Jalloh told the court that he was confident that when an arachnoid cyst ruptured it could produce bilateral collections. He agreed that there were no volumetric measurements available for the cyst.

129. When he was asked about Mr Markham 's evidence Mr Jalloh confirmed that he was aware of Mr Markham's terminology that the retinal haemorrhages were part of a duad and not a triad and said that he did not tend to think in that way as it was too reductive. Mr Jalloh did not consider that Mr Markham's view, that the retinal haemorrhages were secondary to the intracranial haemorrhages, was extreme. He acknowledged that retinal haemorrhages could be linked to AHT/non accidental injury. Mr Jalloh explained that after viewing the scans from December 2022 he had gained the impression that the arachnoid cyst may have been larger prior to May 2022 and that would account for the rupture prior to the 1<sup>st</sup> May 2022 with the CSF flowing into the cerebral spheres.
130. Mr Jalloh disagreed with Mr Garrido KC when it was suggested to him that his rupture theory was dependent on his subjective analysis of whether the cyst appeared larger on the scans. Mr Jalloh pointed out that there was support for the rupture theory from the fact that the December 2022 scans showed that the cyst was large and dynamic, making rupture more likely. This was a key factor to suggest that rupture had occurred - a big angry cyst with the collections likely to be CSF. Another supporting factor was that the collections seen on the scans were quite large and likely to be chronic; they had collected over a period of time otherwise, M's brain would have been squashed.
131. Mr Jalloh indicated that there was nothing showing on the scans to support chronic haematoma or mature traumatic effusion. Mr Jalloh explained that in his opinion the absence of a rupture between May and December 2022 did not assist with identifying what had happened in May 2022. The type of childhood knocks that M had apparently experienced in foster care were likely to be trivial, he said, and would not necessarily lead to rupture of the cyst.
132. Mr Jalloh had considered Dr Khandanpour's concern that there were no signs of venous thromboses on the scans so therefore no venous injury. Mr Jalloh said that he did not believe this to be a particularly important issue, a vein could have been pulled off with the accumulating collections. Asked about Dr Khandanpour's view that the Palifka criteria had been met and that it was more likely to be a laceration rather than a venous injury Mr Jalloh responded, "a laceration is a cut in the brain. I would expect to see it on the MRI sequences and it is not there." With respect to shaking type injuries Mr Jalloh stated that generally with these types of injury one would see diffusion restriction i.e. swelling on the brain on both sides of the brain. Mr Jalloh said that when there is just one spot it becomes difficult to reconcile it with a shaking injury. In his opinion it made it much less indicative of a shaking type injury where the abnormal force used in the shaking mechanism leads to bleeding in multiple areas. In Mr Jalloh's opinion, the presence of the small area of diffusion restriction did not assist to distinguish between the two hypotheses.
133. When it was put to him that he was simply changing his theory to fit the facts, Mr Jalloh repeated that it was unusual to see a blood spot in the splenium as a result of a shaking type injury.

134. With respect to the cyst rupture Mr Jalloh explained that arachnoid cysts could rupture spontaneously although he conceded that that was rare. He had seen it happen with children of 13 and 14 years of age. When trying to date the rupture Mr Jalloh thought that the vomiting provided some evidence of a sign of increased intracranial pressure together with some changes in M's behaviour, for example, the development of the eye squint and the white seen above the iris in his eye. In his opinion these changes would not necessarily have been noticed by the parents except for the vomiting. In his opinion the vomiting was a much earlier sign of raised intracranial pressure than papilledema.
135. Mr Markham agreed that he believed that there could be two explanations for the injuries suffered by M; firstly the rupture of the arachnoid cyst and subsequent fall or AHT/non accidental injury. He explained that in his opinion the causation of the retinal haemorrhages was a duad, that is, dependent on the cause of the intracranial haemorrhages. He considered the retinal haemorrhages would have occurred shortly afterwards. Mr Markham was not persuaded that the presence or otherwise of flame shaped haemorrhages was overly important.
136. Mr Markham confirmed that a fall from any height could be the cause of the retinal haemorrhages if they were secondary to the intracranial haemorrhages. Mr Markham explained that there was no way of testing whether the chronic collections weakened the eyes prior to the fall and thus caused the retinal haemorrhages seen on the 6<sup>th</sup> and 7<sup>th</sup> May 2022. It was not possible to confirm when they had actually occurred. However, Mr Markham maintained his opinion that a low level fall could have caused the retinal haemorrhages if there was raised intracranial pressure. The raised intracranial pressure squeezed the optic nerve and blocked ectoplasmic flow. The build-up caused the nerve to swell. Mr Markham explained that it had been the prevalent theory in ophthalmological circles for some time that retinal haemorrhages were thought to be independent of other events, but Mr Markham said that current thinking from some experts now cast doubt on that. Mr Markham denied that his view departed from what was the recognised orthodox view. He said that a number of his colleagues agreed with his view and, Mr Markham said, he did not believe that his position was a minority position.
137. Mr Markham pointed to the fact that babies born by vaginal delivery often presented with retinal haemorrhages which could not be explained by the shaking mechanism of acceleration / deceleration. This medical fact had been ignored in the literature and by experts for a long period of time. Mr Markham said that it was his duty to inform the court that the previous thinking that retinal haemorrhages were independent of other events could now be incorrect.

138. Mr Markham said that he did not entirely agree with Mr Simmons view of the raised intracranial pressure. Mr Markham said he accepted Mr Jalloh's opinion that it was CSF and not blood that was tracking down the optic nerve. He disagreed with Mr Simmons about the significance of the absence of swelling to the right optic nerve. He said that if there was raised intracranial pressure he would not expect to see papilledema immediately. Mr Markham explained that papilledema take time to develop, whereas retinal haemorrhages occur immediately after the insult or injury. The absence of papilledema in the right eye did not suggest to him that there was no raised intracranial pressure as suggested by Mr Simmons. Mr Markham did not accept when it was put to him that Mr Simmons' view on this was the orthodox view stating "*I don't see where it comes from*". Mr Markham was very confident that his view was shared by many colleagues.
139. With respect to falls and their likely impact, Mr Markham referred to the Gaussian curve example; one could fall from a low height and suffer significant injuries or fall from a much higher level and be unscathed. Anything could happen at either end of the curve and sometimes something would simply be unexplained. Even without the cyst, Mr Markham said, the fall could have produced the retinal haemorrhages. M's position could simply be "*an outlier*".
140. Mr Markham made the point that there was a paucity of research about retinal haemorrhages and their causes. He referred again to the incidence of retinal haemorrhages with new-borns which was still unexplained, although his view was that it was probably due to the squeezing of the body during birth.
141. Asked by Mr Storey if he was considered to be something of a "wacky maverick" by his colleagues, Mr Markham allowed himself a smile and said that he thought not, and that a significant number of his fellow professionals shared his views. Mr Markham also made the point that with respect to AHT the mechanisms were largely deduced from the histories given by the perpetrators. The acceleration/deceleration mechanism was only quoted in "*shaking*" cases and not for other causes of retinal haemorrhages.
142. As with the other experts Dr Khandanpour gave his oral evidence via the CVP system. Unfortunately, there were technical difficulties, which meant that he was unable to see the other parties in court although he was able to hear us. Everyone at court could see him on the screen. Dr Khandanpour indicated that he was happy to proceed although it may have been difficult for him at times because of the technical problems.



143. Dr Khandanpour was asked about Dr Hogarth's revised position about the evidence of the blood in the posterior fossa; that it was in fact on the surface of the tentorium. Dr Khandanpour agreed that this was an acceptable opinion as there was no conspicuous haemorrhage apart from the changes around the tentorium. In his opinion there was no complete answer, but the MRI was more sensitive; Dr Khandanpour was happy to accept Dr Hogarth's revised position, saying that it was possible. Dr Khandanpour was also happy to accept that there was an arachnoid cyst present in May 2022, something which he had previously discounted. Where he differed from Dr Hogarth was that he believed that there was a lesion in the brain tissue in the left fossa lobe and a lesion in the splenium. He said that this was evidenced in the images. Dr Khandanpour suggested that it was probably a laceration to the brain compatible with AHT. Dr Khandanpour believed that the shape over the surface of the cortex as seen on the T2 sequence speaks for itself, as he put it. It was consistent, he said, radiologically, with AHT.
144. Dr Khandanpour stated that a lesion in the corpus callosum without previously seen trauma can be linked to AHT and he referred to the literature showing similar patterns. He accepted that the lesion was small and, in the spectrum range of damage to the brain, was tiny. Dr Khandanpour suggested in his oral evidence that he did not understand how Dr Hogarth was considering the rupture of the arachnoid cyst with the scans and that Dr Hogarth was fitting the explanation to his preferred theory. Dr Khandanpour commented that Dr Hogarth had first identified the lesion as a venous thrombosis which was not a typical presentation, and in his opinion not present in this case. However Dr Khandanpour made it plain that he could not rule out the theory linked to the cyst rupture.
145. Dr Khandanpour agreed that cyst ruptures occurred but confirmed that they were rare. He had not found anything compatible within the medical literature for the alternative theory being advanced and had no clinical experience of such a thing. Dr Khandanpour disagreed with Dr Hogarth's opinion that there was no parenchymal brain injury seen on the scans. Dr Khandanpour believed that what could be seen did meet to the Palifka criteria. He described what could be seen was a cleft where the water/CSF collected around the brain. He disagreed that it could be a venal infarction. In his opinion that that would require a much larger obstruction to cause such a problem. Again Dr Khandanpour qualified this opinion and said he was not ruling it out but that in his opinion it would be "bizarre".

146. Dr Khandanpour was asked by Ms Farrington KC whether he agreed with Mr Jalloh's opinion that one hypothesis for M's injuries was the arachnoid cyst rupture, leading to bilateral hygromas which made M more vulnerable to bleeding from minor trauma. Dr Khandanpour commented that when he had provided his first report to the Police, he was certain of his conclusion that the injuries were non accidental and that at that time he was able to say that his opinion would support the criminal standard of proof, beyond reasonable doubt. Dr Khandanpour said that later, when he was considering the other medical reports and the further information available, and when he had identified that M did indeed have an arachnoid cyst, he had revised his opinion. He still believed that an AHT/NAI was the more likely cause of M's injuries but he could only say this now on the balance of probabilities, the civil standard of proof. Dr Khandanpour confirmed that in his opinion, on the balance of probabilities, the cause of M's injuries was 51% more likely to be non-accidental.
147. Dr Khandanpour suggested that it would be a rare combination of events to produce the differential diagnosis based on the rupture of the cyst although he had to accept that cysts do rupture spontaneously. He agreed that Mr Jalloh's theory was a possibility. Pressed by Ms Farrington KC on his opinion of the parenchymal brain injury being a laceration, Dr Khandanpour was very sure that he was correct in his view and repeated that the injury met two of the criteria set out in the Palifka paper. Dr Khandanpour stated that in his opinion Dr Hogarth's suggestion that these small focus change in the splenium could be related to seizure was again "bizarre". There was nothing seen elsewhere, and he had not found anything in the medical literature to support this theory. However, Dr Khandanpour commented, very fairly, that "*in the real world anything is possible, but not usual*".
148. Ms Farrington KC suggested to Dr Khandanpour that when dismissing Dr Hogarth's opinions he might be taking a somewhat narrow approach and that he was unwilling to consider alternative suggestions. When responding Dr Khandanpour became quite agitated in his manner and seemed to take Ms Farrington's question as a personal attack on him. He confirmed that he was being wholly impartial and that he knew his duty to the court and emphasised that "*the only difference is 1 %*". Finally, Dr Khandanpour agreed that there were two hypotheses for M's injuries although on balance he still believed NAI was the more likely cause. He did not agree that the lesion in the corpus callosum was not compatible with NAI.
149. Mr Simmons confirmed that he had not changed his opinion about the cause of M's injuries; AHT/ NAI was the more likely cause in his view. He agreed, when it was put to him that there were number of reasons for retinal haemorrhages; he had set them out in his first report of the 19<sup>th</sup> January 2023 at paragraph 3.27. One could be linked to raised intracranial pressure. In his opinion if there had been raised intracranial pressure it would have caused swelling at the top of the optic nerve and papilledema. The fact that the right optic nerve showed no evidence of this swelling suggested to him that intracranial pressure was not high at the relevant time. He disagreed with Mr Markham's opinion that papilledema takes days to appear.

150. Mr Simmons was asked about the findings in the article forwarded by Dr Khandanpour where all three patients with bleeding at the back of the eye had flame shaped retinal haemorrhages which is indicative of raised intracranial pressure. Mr Simmons explained that the bleeding seen in M was very different. M had bleeding in both eyes but more significantly in the left where it extended into the retinal area. In his opinion the retinal haemorrhages seen in M were more likely to have been related to some form of trauma and more likely to be AHT rather than the rupture of the arachnoid cyst. Mr Simmons explained that in cases of AHT haemorrhages with white centres were often seen but these were not seen in children with significantly raised intracranial pressure. Mr Simmons indicated that he found it difficult to understand how there could have been raised intracranial pressure if only the left optic nerve was swollen. The absence of swelling in the right optic nerve was important in his opinion as one would expect to see swelling in both optic nerves if there was raised intracranial pressure. Mr Simmons pointed out that with raised intracranial pressure one would expect to see flame shaped retinal haemorrhages and not, as in M's case, haemorrhages spread out into other parts of the retina.
151. Mr Simmons made it clear that he did not entirely understand Mr Markham's rationale for suggesting the retinal haemorrhages arose from raised intracranial pressure and could not explain it. Mr Simmons confirmed that he had seen retinal haemorrhages in his own clinical practice and in his opinion the patterns seen in M were not suggestive of raised intracranial pressure.
152. Mr Simmons confirmed that he had been involved in two major reviews in 2013 and 2020 in respect of retinal haemorrhages and that another review was expected to take place in 2024. He did not think it likely, he said, that the next review would see a shift in the orthodox thinking on the causes for retinal haemorrhages and commented that nothing much had changed in this field since 1994. There had been some discussion about 20 years ago about whether raised intracranial pressure alone could cause retinal haemorrhages, but this was not an opinion generally subscribed to. Mr Simmons confirmed that he agreed with Mr Markham that it was a widely held view that intracranial haemorrhages were not diagnostic for AHT. Mr Simmons agreed, when it was put to him, that there was a gap in the wider medical knowledge in this field because it was not possible to carry out testing. One had to rely on circumstantial evidence and on the reporting of other findings in the literature.

153. Mr Simmons did not agree with Mr Markham's opinion that there was a difference between a diagnostic duad and a triad and repeated his opinion that the retinal haemorrhages suffered by M did not occur because of raised intracranial pressure nor from blood tracking into the eyes from the subarachnoid. He deferred to Mr Markham's expertise as a vitreoretinal surgeon in respect of children who have suffered retinal haemorrhages as a result of trauma, and on surgical issues relating to the retina. With respect to Mr Markham's comments on retinal haemorrhages in new-borns, Mr Simmons agreed that birth, especially vaginal birth, was traumatic. A baby could suffer a crush type injury during birth leading to retinal haemorrhages. Mr Simmons confirmed that medical science could not currently explain why such retinal haemorrhages occurred so one had to try and draw the best available conclusion. Mr Simmons agreed that birth related retinal haemorrhages were not caused by an acceleration/deceleration mechanism such as shaking. There was no explanation for it happening and the presence of retinal haemorrhages at birth was not supported by the patterns seen in AHT.
154. Mr Simmons agreed that based on this evidence of retinal haemorrhages at birth one had to be careful about ascribing patterns to some types of injuries/events and therefore drawing certain conclusions. Mr Simmons accepted that a ruptured arachnoid cyst was a rare event and that could be an unknown factor. He agreed that in M's case not only the arachnoid cyst had to be considered but the reported fall from the bed. Mr Simmons also agreed that retinal haemorrhages can occur in the absence of a shaking mechanism for example at birth.
155. With respect to the reported fall from the bed, Mr Simmons could not exclude the possibility that such a fall had caused the retinal haemorrhages but, bearing in mind the nature of the fall and the reported patterns in the medical literature, Mr Simmons did not consider that this had happened in M's case. Mr Simmons accepted that a fall from a low height could have caused the retinal haemorrhages but in his opinion this was unlikely. Mr Simmons also agreed that the orthodox view on the causes of retinal haemorrhages in children had not changed in approximately 30 years but made the point that that was neither good nor bad. It was just what the position was. He confirmed that he was not aware of any new theories or evidence to suggest the accepted ideas on how retinal haemorrhages occurred was wrong. However, he accepted that not all experts would agree with each other on this point.
156. Mr Simmons suggested that in his opinion, and subject to any evidence that he had not seen, if the retinal haemorrhages were caused by AHT it could mean that AHT caused the rupture of the arachnoid cyst. Mr Simmons confirmed that he was aware that arachnoid cysts could rupture spontaneously, but he believed it was logical to link AHT to both the rupture of the cyst and the retinal haemorrhages.

157. Mr Simmons agreed that the bruising/swelling noted to the back of M's head on the body map completed at hospital was consistent with a fall. Mr Simmons accepted that there were many unknowns in medical science and a lack of controlled studies in various fields which prevented definite explanations being provided. He cited, as examples, the lack of evidence on the rupture of arachnoid cysts and the incidence of retinal haemorrhages following a low-level fall.
158. AD was M's allocated social worker from 19<sup>th</sup> July 2022 to the 26<sup>th</sup> October 2023. She had prepared two statements, a care plan and a reunification plan, all of which were in the bundle. She confirmed that M remained on a child protection plan which involved weekly visits to the family. M was thriving in his parents' care and there were no safeguarding issues. AD also confirmed that the parents had cooperated fully with the Local Authority throughout these proceedings. AD told the court that there had been an appointment with M's treating Consultant on the 14<sup>th</sup> November 2023 to review the scans taken on the 14<sup>th</sup> September 2023. However, she had been unable to attend the appointment and had no information as to what had been discussed or advised.
159. ST also attended court to give evidence. She is a Specialist Community Health nurse and was M's Health Visitor when he lived in the area. She told us that her assessment of the parents had always been positive, the mother was always proactive in getting help if required. There were no concerns that she was aware of about M or his parents' presentation. ST confirmed that M had had some delay with his gross motor skills in late 2022 and some advice had been given to the parents. At his two-year developmental review his progress was age appropriate in all areas. ST said that she was not aware of any reports of falls, or that M bruised easily.
160. The maternal grandfather had provided a statement to the police [3378] and in these proceedings which is at C66 to C79. The maternal grandfather explained that M and his parents had lived with him and his partner at their home from January 2022 when the family had become homeless. They occupied a room on the ground floor of the property. The main living area was downstairs in the basement and all the family used that main area for cooking and general living.
161. The maternal grandfather recalled that he thought M had been unwell for a couple of weeks prior to the 1<sup>st</sup> May 2022, but he could not be certain of the exact length of time. It could have been nearer a month he thought. M had been bringing up his milk and did not seem to be his normal self. He was not as bubbly as normal. The maternal grandfather believed that M had still been off his food and less lively on the 1 May 2022.

162. When asked the maternal grandfather said that he had not spoken to his daughter or the father about the medical evidence in these proceedings and he thought that the suggestion of M having been shaken deliberately by the parents could not be right. M was loved by everybody he said. When M had been unwell they had been told by the doctors that it was probably teething. His daughter had been worried and had gone to the doctors for advice.
163. The maternal grandfather was very clear in his evidence that he had not seen the parents become frustrated with M at any stage and had not seen anybody shake M in a violent or aggressive way. He commented that the couple were stressed about their housing situation but that had not made them aggressive towards M. He said that he had not seen the couple arguing although he did remark that the father could be “set in his ways” as he put it. The maternal grandfather said that the father did not want M “passed around people” but was unable to expand on this statement or explain clearly what he meant.
164. The maternal grandfather explained that his home was “open house” to his family. He and his partner have ten children in all and numerous grandchildren. Someone from the family was always popping into the house. It was very busy and noisy and he knew that this was different from the father’s own background, although The maternal grandfather thought that Father enjoyed being part of such a big family. If the couple needed peace and quiet at any time they could go to their own room.
165. The maternal grandfather confirmed that he knew that the parents sometimes propped M up on the bed with a pillow. The maternal grandfather said that he had not seen this on the 1<sup>st</sup> May 2022 but he had seen his daughter do it before if she needed the bathroom for example. She would put M on the bed and call for someone in the house to come and watch him. The maternal grandfather said that he did not think that it was right to put M on the bed in this way, although he knew that one of the parents was always with M. The maternal grandfather thought it would have been better to put him in the cot for safety.
166. The maternal grandfather described the early evening of the 1 May 2022 as being total panic. His daughter had rushed downstairs carrying M and was shouting that M had fallen off the bed. the mother told them M was fine at first and then cried for 5 minutes and then collapsed. The maternal grandfather had started resuscitation procedures and his daughter called 999.
167. The maternal grandfather said that he had not asked either of the parents whether they had seen M fall and they had not discussed M's injuries. He had understood that the father had been ironing, M was sitting on the bed and M was either sitting on the bed or putting things away. He agreed, when it was put to him, that he had thought about how M had come to fall off the bed, but maintained that he had not spoken to either of the parents about it. He could not really explain why that was, although he did say that he had no concerns that either of them had hurt M.

168. The maternal grandfather recalled that the couple had completed a parenting course before M was born. It had been his partner, P, who had suggested it because they were both so young. The maternal grandfather said that both parents were very good with M and he had noted that the father was always very careful when dealing with his son.
169. The maternal grandfather was asked about an entry in the police notes that suggested that the police were told that M had had his head on the pillow and had been sick. The maternal grandfather said that he had not been aware of that. His daughter had not told him that and he wondered if his partner had said it to the police. He thought P may have tidied their room after the police visit on 3 May 2022, but he had not moved anything in the room.
170. M's mother had provided various statements to the police and in the proceedings and they can be found at C24, C42, C63 and Q25 in the bundle. The mother confirmed that on the 1<sup>st</sup> May 2022 she and her partner had been out shopping for items for their new home, they were due to move in later that week. M was with them all day. She thought that they had left home about 9:30am. The mother was taken to the photograph of their room which appears at M84 and she confirmed that the pillow in the middle of the bed had been there on the 1<sup>st</sup> May 2022 but that there had also been a pillow on either side of it. Those side pillows were not seen in the photograph.
171. The mother described M as sitting with his bottom on the edge of the pillow in the middle of the bed with his legs in front of him on the bed. The father was sat towards the foot of the bed on the grey area of the quilt. The mother had been ironing the father's outfit for the celebration the following day. The ironing board was not where it was now shown in the photograph. She did not know who had moved it. She had placed the ironing board diagonally across the space between the bed and the wall with the pointed end of the ironing board towards the bed, she was facing the television although the television was not on.
172. The mother said that she had asked the father to check that she was ironing the folds of the outfit correctly and he stood up to face her. He was on the opposite side of the ironing board to her. It was at that point that M fell off the bed. He landed behind the father, in front of the large teddy which can be seen in the photograph, propped up against the wall. The teddy was in the same place as it had been on the 1<sup>st</sup> May 2022.

173. The mother thought that after the fall M had cried immediately and then seemed to be drowsy. They thought that they should use water on his face to keep him awake so she had poured some bottled water into the father's hand, and he flicked water over M's face. The mother said that M did not respond and became floppy. She said that she knew it was serious and told the father to get his car keys. She rushed downstairs to the basement area with M to get help from her parents. She remembered that she had said it was her fault when she went downstairs. The mother explained that this was because she had not been there to catch her son. The mother said that at one point she thought M was dead.
174. The mother made it very clear that she had not hurt her son and that she had not seen the father harm him either. Answering questions from Mr Garrido KC, the mother confirmed that prior to the 1<sup>st</sup> May 2022 M usually had three naps every day. She could not recall what had happened exactly during the day when they were out shopping but she thought M had slept in the push chair. She explained that M did not appear to have been unwell on the 1<sup>st</sup> May 2022 although he was still hot to touch. She thought fresh air would be good for him and they had shopping to get.
175. The mother was not certain about how long M had been unwell prior to the 1<sup>st</sup> May 2022 but she thought that he had first vomited on the 25<sup>th</sup> April 2022. She was unable to recall the detail of the preceding week but thought that he had been unwell the previous weekend.
176. Mr Garrido KC questioned the mother as to whether she had sat down and thought about the details of what happened leading up to the events of the 1 May 2022. The mother said she had tried, but "so much had happened" that she could not remember everything. She was asked about their movements generally during the week and the mother replied that they "would go with the flow". Explaining further she said that sometimes they visited her siblings or went to the beach or for a drive. At times they would be at home doing household stuff or they would be out shopping.
177. The mother confirmed that most of the time she and the father were together with M, but said that there were times when one or other of them would be alone with M. For example, the father would look after M if she went out with friends or went shopping or just had a shower. There would also be times, she said, when she was on her own with M when the father went out with friends, was running errands or helping his friends with work. When she was pressed by Mr Garrido to try and recall what exactly had been going on in the weeks leading up to the 25 April 2022 the mother said that she could not remember, saying "it's been over a year".



178. The mother said that she thought the first time M brought up his breakfast was 25<sup>th</sup> April 2022. He had been hot to the touch, she said, but did not remember any more detail; " a lot has happened since then" she said. She did not ask the father about what might have happened during the early morning of that day when he was looking after M while she slept. She said that she had no particular concerns about the situation.
179. The mother told the Court that she became more worried about M and contacted the GP surgery on the 27<sup>th</sup> April 2022. By that time M had been ill for two days. He was still hot to the touch and vomiting. She could not recall if M had been up during the night. She explained that she had seen the Doctor on her own with M as only one parent was allowed in at any time. The mother recalled that the Doctor had told her it was probably teething troubles, although she had to accept that was not mentioned in the notes. She agreed that she had been given an inhaler for M; she said asthma ran in her family. The mother said she had not been reassured by the Doctor because he had not given any reason for the vomiting.
180. The mother indicated that on the 30<sup>th</sup> April 2022 she had obtained an appointment at the medical centre as she remained worried about M. He was still vomiting, on and off. She was shown the Doctor's note for the visit which described M as being quite well and bubbly. The mother said that she was not saying the note was wrong, but that she knew M best and he had not been himself. Again, she said she had been unhappy that there was no reason given for the vomiting.
181. Mr Garrido KC put it to the mother that the reason that she was unhappy was because she knew that either she or the father had assaulted or shaken M. The mother strongly denied that she had done anything to harm her son and said that she had not seen the father do anything either. She denied that she had attended the doctors to try to persuade the doctor to provide a reason for the sickness. The mother denied having inflicted any harm to M.
182. The mother was asked about her relationship with the father, and she replied that it was "amazing". Mr Garrido KC took the mother through some of the downloaded messages between herself and the father, some of which showed that the father appeared to be out quite late at night with his friends. The mother agreed that the downloads showed this but could not recall why he might have been out with his friends so late at night or how often it happened. She accepted that the messages from the 20<sup>th</sup> February 2022 showed that she and the father had had a serious argument, there was reference to the father suggesting he was going to leave her. The mother told the court that she could not recall what the row had been about. Mr Garrido KC suggested to her that she was deliberately refusing to explain the messages to the court, but she denied this saying that she simply could not remember, although she did say "everyone argues".

183. The mother did mention that there were a lot of differences between the father and her family. They held different beliefs and sometimes her family did not agree with what the father said or did.. The mother said that at times her family could be judgmental, which was not a huge problem, but she knew that it sometimes affected her partner “bringing him down”. The mother said the situation had been the same since they got together and was no worse when they moved into her parents’ home. They had got used to it.
184. Taken again to messages between the couple where she was saying that she was sad and crying, she denied that was due to anything the father had said or done. She said she had been emotional, a new mum and was just trying to find herself. It was her sisters sometimes who got her down, trying to tell her what to do. She knew that the father had thought he was upsetting her, but she denied it was his fault.
185. When asked, the mother confirmed that she and her mother had had an argument on the 2<sup>nd</sup> May 2022 because of something her mother had said about the father. Her mother had not said it directly to her, but to her sister, and then her sister had repeated it to her. The mother said that she knew she had told the father what had been said and that he had been upset by it. She told the court that she was unable to remember what her mother had said after all the time that had lapsed.
186. The mother denied very strongly that she and the father had made up a pack of lies to hide the fact that one of them had assaulted M and caused the injuries. The mother denied that she had suggested to her mother that t the father had injured their son. Going through the events of the 1<sup>st</sup> May 2022 again in her cross examination, the mother confirmed that she had not seen M fall from the bed. She agreed that she had been able to see the bed from where she was standing, behind the ironing board, but she had been focusing on the ironing as she did not want to burn anything. The television was not on. The mother confirmed that she had never seen M do a somersault-type roll forward. As at the 1<sup>st</sup> May 2022, when M was nearly eight months old, the mother told us that M could sit up and roll over but he was not crawling. As far as she knew he could not do somersault-type rolls.
187. The mother confirmed that when she saw M after the fall he was on the floor, on his side, with his feet towards the teddy bear. When M fell the Father had his back towards the bed. The mother denied that they had made up the story that M fell from the bed to cover up wrongdoing on their part. She also denied that M had been dropped, or thrown, by either of them.

188. With respect to the photographs in the bundle, the mother told the court the position of the ironing board as shown in them was different from where it was when she had been ironing on the 1<sup>st</sup> May 2022. The pointed end of the board had been near the end of the bed as she had described earlier. The mother did not know what had happened in their room between the 1<sup>st</sup> May 2022 and when the photographs were taken by the police on the 3<sup>rd</sup> May 2022 as she was at the hospital with M during that time. She knew that the father had gone back to the house to collect items for her but said she did not know if he had slept in their room before they both returned on the 7<sup>th</sup> May 2022. She confirmed that the list of items that she had asked him to collect could be seen in a message on her phone on the 3<sup>rd</sup> May 2022. The mother confirmed that the bedroom was as messy on the 1<sup>st</sup> May 2022 as was showing in the photographs taken 2 days later.
189. The father was assisted when giving his evidence by an intermediary. It was clear from Mr Crimes' cognitive assessment, conducted much earlier in the proceedings, that The father's memory function was likely to be impaired and that he suffered with cognitive difficulties. The father explained how he had come to the United Kingdom as a child refugee at the age of about 10 or 11. He had arrived in the back of a lorry. He had been in local authority care himself until he reached the age of 18.
190. The father told the Court that he did not remember details very well, but that he would do his best to answer the questions as fully as he could. He recalled that on the day M fell they had returned home from shopping in the late afternoon. They were in their room with M who was sitting in the middle of the bed. M's bottom was on the edge of the pillow behind him and there was a pillow on either side of him. He agreed that he had returned to the bedroom on the 3<sup>rd</sup> May 2022 to get some items that the mother had asked for. He said that he had thrown some clothing across the room. The father was unable to give a clear answer as to why he had done this but said that he was upset and that it seemed to him at the time that the clothing "had caused the accident". He described how later he had stuffed the clothing into a gap between the mattress and the bed.
191. He thought that he had moved the ironing board when he went back to the room on 3<sup>rd</sup> May 2022 and, probably, that he had moved some other stuff around when he was getting the items that he needed.
192. When he was taken to the messages between himself and the mother which seemed to suggest that he was thinking of leaving her, The father could not explain what it had all been about or what they had been arguing about. He accepted what the messages appeared to be saying.
193. The father denied that he had hurt M and referred to his son as being "my life". He said that it would "be impossible for me to hurt him". The father agreed that he held different views from the mother's parents but said that he usually kept quiet. He described his relationship with the maternal family as "one of the best things ever" and said that he usually got on well with people.

194. He did remember that when the mother had told him what her mother had said about him, he had been annoyed and had taken it the wrong way. He could not remember what that had been about either. The father said that he had spoken to the mother about the possibility of someone assaulting M, but she had said that nothing like that had happened. He had not asked her if she had assaulted M, because he trusted her. The mother had not asked him if he had done anything to M, because she trusted him. The father was vague about what he had been doing in the week leading up to the 1<sup>st</sup> May 2022 and said that he “just went with the flow”, as he put it. There were no plans that he could recall; they would decide what to do as and when it occurred to them.
195. He thought that M had started his illness around the 22<sup>nd</sup> April 2022. His skin had been hot to the touch although at that time The father did not see him vomit. The mother had told him about it. The father said that M had not been himself and that was why they took him to the doctors twice, because they were worried about him.
196. The father stated that the mother had told him that the doctor had suggested M was teething, but the father said that he did not believe that to be the cause. He had been asking his friends what M might have and he thought that it was probably viral and that the doctor did not understand that. He did not believe that M was teething. He said that he did not doubt what the mother had told him as she would “never lie to me”.
197. The father was asked whether M had kept his parents awake for 5 consecutive nights as P had told the police. The father said that there had been occasions when M had kept them awake but he did not think that they had gone five days without sleep as that would be impossible. He said that he and the mother had taken it in turns to look after their son when needed.
198. He recalled that, on the 30<sup>th</sup> April 2022, he was out when the mother rang him to say that M was still unwell. He told her to ring 111. He did remember that when he went out earlier that day M had been unwell, his temperature was up and down and he was still being sick. He had asked the mother to keep him updated. They had seen the doctor later that day but were not happy with what was being said.
199. The father explained what had happened on the 1 May 2022. He and the mother had gone out shopping, taking M with them. They were getting ready for a celebration and purchasing items for their new home. He remembered that after their return home all three of them were in the bedroom together. The father said that he was sure that M was propped up in the middle of the bed as he had described, a pillow behind him and one on each side. The father was sitting towards the foot of the bed, near to the edge of the ironing board. Before he stood up, to look at what the mother had ironed, he had removed a spinning toy from M and given him the TV remote to play with instead.

200. The father said that as soon as he turned his back on M he heard a bang and turned back to see M on the bedroom floor. Mr Garrido asked him why he had said in his statement that he had run to pick M up; was it because in fact he was not in the bedroom as he had said he was? The father could not explain why he used that phrase but said all he meant was that he acted quickly to reach his son. All three of them were in the bedroom together. He had picked M up and flicked water on his face to keep him awake. M had become floppy, and mother took M from him and rushed downstairs to the basement, to see her parents. By that time M was unresponsive and the mother was carrying out CPR. the mother called 999.
201. The father made it clear that he had done nothing to harm his son. He had not dropped him, nor thrown him, nor shaken him.
202. That concludes the review of the evidence.

### **Discussion**

203. In addition to the written and oral evidence received by the court all parties provided lengthy detailed written submissions supplemented by oral submissions which the court heard on the 5 December 2023. I have set out the medical evidence in more detail than one might usually expect because of the extraordinary circumstances of this case.
204. All the experts, including Mr Simmons and Dr Khandanpour, accepted that there were two possible hypotheses for M's injuries; (i) the ruptured arachnoid cyst and fall which explained all the injuries and (ii) AHT/NAI which explained some or all of the injuries. At court, after extensive cross examination, the Part 25 experts Mr Jalloh, Dr Cleghorn, Dr Hogarth, Dr Saggar and Mr Markham all maintained their positions that they could not differentiate between the two hypotheses to say which was the more likely to have caused M's injuries.
205. Dr Khandanpour remained of the opinion that the more likely cause for M's injuries was AHT. He considered that the first hypothesis would require a sequence of very rare incidents occurring thereby making it unlikely. Mr Simmons also maintained his opinion that the cause of M's injuries was more likely to be from AHT/NAI.
206. All the experts agreed that M's case was complex, a fact demonstrated by the number of experts involved in these proceedings originally and the introduction of the two experts instructed in the criminal investigation.
207. It is quite an extraordinary situation for the Local Authority to find itself in, in effect having to challenge the evidence of experts instructed through the Part 25 process.

208. I have set out the relevant law earlier in this judgment and will not repeat it now. However, it is important to emphasise the fundamental principle which governs fact finding hearings. It is for the party seeking the findings to prove its case on the balance of probabilities. The Local Authority must prove therefore that M did not fall as the parents claim and that at some stage one or other of the parents inflicted the injuries on M. The parents do not have to prove or disprove anything, and it is essential that the court does not stray into error in unconsciously reversing the burden of proof.
209. Before dealing with the differences between the experts and the evidence generally it is helpful at this stage to consider several points raised on behalf of the parents. It was argued by both Leading Counsel for the parents that the court should pay particular attention to the fact that Dr Khandanpour and Mr Simmons were not instructed through the Part 25 procedure. They pointed out that the court has not seen any letter of instruction to them, they did not have access to the full bundle and did not attend the very important experts' meeting in February 2023.
210. In their written submissions both Mr Storey (PSKC) and Ms Farrington (GFKC) suggested that these deficiencies should operate to make the court more cautious about their evidence. In oral submissions PSKC indicated that had the Part 25 selection procedure being applied to Dr Khandanpour and Mr Simmons, they would not have been chosen as experts. Doctor Khandanpour had little expertise of giving evidence at court and Mr Simmons appeared primarily for the prosecution in criminal cases.
211. At court both Dr Khandanpour and Mr Simmons confirmed that they were aware of their duty to the court. Indeed, as I have referred to earlier, in his oral evidence Dr Khandanpour was very exercised when he considered that his professional independence was being questioned by GFKC. Clearly, I must take account of the fact that these two experts arrived in these proceedings in a rather unorthodox way and did not attend the experts meeting. However, it was clear from the evidence that they gave that each of them had access to the relevant documents that they had to consider, including the transcript of the experts meeting.
212. I have no concerns, therefore, that their lack of Part 25 status raises any specific doubt about their evidence. They are expert witnesses whose opinions I must consider in the usual way and decide what weight I should give to their evidence.
213. On behalf of the parents' submissions were made in connection with the need to be aware of what had happened in other cases where unknown causes had been found to have contributed to injury. PSKC's written submissions deal with this point in some detail. Whilst I accept that the court can take judicial note of such cases having been decided, as Ms Isaacs (EIKC) highlighted in her oral submissions, each case must turn on its own facts. The court must make its decision based on the evidence before it.

214. Another point raised on behalf of the father was that the court must consider, when assessing his evidence, that he was giving evidence in his second language. The father did not request the assistance of an interpreter throughout these proceedings. He was entitled to do so at any stage. Therefore, the court must take the view that an interpreter was not necessary, and I place no weight on that point.
215. There is another piece of evidence that both parents rely on that I did not deal with in any detail when reviewing the evidence before the court. It is the email sent by AD to the police officer recounting what CB had said at the consultation in January 2023. The email appears at M623. At court AD confirmed that her email was accurate, and that CB had said that she thought the fluid seen in the previous scans was due to the cyst rupturing and that was why the cyst now looked smaller.
216. There are several problems with placing too much weight on this evidence. Firstly, I do not know if CB has seen the email or had the opportunity to comment on it. Secondly, I do not know the context of the discussion at the appointment or what prompted CB's comment. Most importantly, CB was not at court to give evidence and answer questions. Therefore, it seems to me that little weight can be placed evidentially on this email.
217. I believe caution should also be taken when considering the photographs which appear at M84 onwards. These were taken on the 3<sup>rd</sup> May 2022 and they cannot be considered as "scenes of crime" photographs. It is not known whether anybody had been in the room between the 1<sup>st</sup> and 3<sup>rd</sup> May 2022 save for The father attending to collect items for the mother . The photographs are helpful in assisting with trying to assess the size of the room, where the bed was, and where the parents say they were at the time of the alleged fall.
218. Dr Saggar's evidence was very clear and I found him to be a very helpful witness. He is of course a vastly experienced practitioner, and he told us of his extensive clinical experience at court. With respect to the identified ANKRD26 VUS, Dr Saggar concluded that there was not enough known about the VUS to consider it to be responsible for the cerebral and retinal bleeding. Dr Saggar confirmed his opinion that M had 50% chance of inheriting HSD [formerly EDS III] from his mother who in his opinion had the condition. In his report and at court Dr Saggar confirmed that there was no gene yet identified for this condition, so diagnosis had to be made on a clinical basis. Doctor Saggar had not found any clinical evidence that M had HSD but said that it could not be excluded as a possibility because diagnosis in very young children was difficult.
219. Dr Saggar told us that HSD would not cause spontaneous bleeding, but being a connective tissue disorder would potentially affect the blood vessels and reduce the level of force required to damage them. This could lead to more bleeding than would happen with a person without the condition.

220. In cross examination Dr Saggar made it clear to DGKC that he was not saying HSD alone could be the cause for the injuries, just that it was part of the overall evidential picture to be considered. Dr Saggar's evidence on this was not challenged. As I have said, he was a careful and thoughtful witness and I accept his evidence that HSD might be a factor in the overall assessment of what happened to M.
221. Dr Cleghorn is another very experienced expert who combines clinical practice and expert witness work. Quite properly she deferred to the other experts as and when appropriate and did not stray out of her area of expertise. It was interesting to hear such an experienced practitioner tell the court that she had found it very difficult to understand the ophthalmology experts' reports, again demonstrating how complex this case is. Dr Cleghorn was unable to give any assistance to the court with the timing of any event leading to M's injuries. She confirmed that M's presentation may not have changed enough for the parents to recognise anything unusual.
222. Dr Cleghorn was able to confirm that a child of M's age [nearly eight months] would not have had sufficient head control or neck tone to keep his head from hitting the floor if he had fallen, as claimed by the parents. Dr Cleghorn was also very clear that a child of M's age would be able to roll and use rolling movements to move about. Doctor Cleghorn described how a child doing this could roll from the middle of the bed and off the bed even if pillows were present. Doctor Cleghorn referred to a child getting into the "commando position" and pulling themselves forward and over.
223. During the cross examination of the parents DGKC had suggested that for M to have fallen as they maintained he would have to have somersaulted off the bed. This point was not put to Dr Cleghorn during her oral evidence. What was clear from Dr Cleghorn's evidence was that she was not surprised, as she put it, that a child of M's age had managed to fall from a bed. Dr Cleghorn also accepted that the swelling to the back of M's head, as recorded on the body map completed when M first presented at hospital, was consistent with an impact to the back of the head such as from the reported fall. Dr Cleghorn's evidence was helpful, in that it confirmed, theoretically, that M's age and level of development could lead to him falling off the bed as alleged.
224. It is important to note with the evidence of Dr Hogarth, Mr Jalloh and Mr Markham, that they are not saying that M did fall from the bed as alleged. What they are saying is that the potential rupture of the arachnoid cyst plus the subsequent fall could explain M's injuries. Their position remained that they could not prefer one hypothesis over the other.



225. Dr Hogarth is a very experienced clinician, a paediatric neuroradiologist. He is very used to providing written reports for court and giving evidence. Dr Hogarth considered that the bilateral subdural collections over the cerebral hemispheres as seen on the scan 3<sup>rd</sup> May 2022 were probably chronic. The left subdural collection was quite deep which also suggested it was chronic. Doctor Hogarth had noted the presence of the arachnoid cyst throughout the series of the scans, unlike Dr Khandanpour who, in his first report, discounted the possibility of the existence of an arachnoid cyst. In oral evidence Dr Hogarth described the change in the size of the cyst as seen in the May and December 2022 scans as going from “*medium to impressively large*”.
226. Dr Hogarth was comfortable in accepting that these subdural collections were hygromas [fluid] rather than being haematomas, because of the appearance of the cyst. As set out earlier in this judgment Dr Hogarth explained why, in his opinion, the small spot of acute blood seen over the left frontal lobe was not typical for traumatic injury. It was not situated in an area near a bony surface of the skull which one would expect with traumatic injury. He considered that this tiny area of tissue damage seen on the same side of the brain as the cyst could be a tiny venous infarct. Doctor Hogarth disagreed with Dr Khandanpour that it was a parenchymal brain laceration [PBL]. In support of his view Dr Hogarth pointed to the fact that there were no blood products showing on or in that tissue. If it had been PBL Dr Hogarth said that he would have expected to see far more serious injury. In his clinical experience when he had encountered PBL the injuries were life threatening which was not the case here.
227. With respect to his preliminary view that there was blood in the posterior fossa, Dr Hogarth had reassessed the scans and was now confident that the blood was actually on the tentorium. This revised view was agreed by Dr Khandanpour as being a reasonable explanation.
228. Dr Hogarth faced lengthy cross examination from DGKC but was not moved at all in his oral evidence about his opinions. He explained that he believed it to be his duty to the court to keep matters under review and revisit his opinion when necessary. Doctor Hogarth did not agree that he was shifting his opinion to fit a particular thesis.
229. I found Dr Hogarth to be a measured and fair witness when answering questions. He accepted that his thinking had evolved particularly during the experts meeting. He had started to reconsider his views after the December 2022 scans were available but had not revised his opinion at that time. He said that he was now comfortable with the theory that the arachnoid cyst may have ruptured and that, together with the fall could have caused M’s injuries.

230. Dr Hogarth made the point that the rupture of such cysts was rare and that medical knowledge in respect of the consequences of such ruptures was limited. What was clear from Dr Hogarth's evidence at court was that he had taken a great deal of time in considering and revisiting his opinions. He had re-examined the full sequence of the images taken and had spent time reviewing them. He had also taken great care when producing his reports to ensure that he was meeting his professional responsibilities to the court.
231. I believe it fair to say that during his oral evidence Dr Khandanpour was, at times, difficult to follow. He was at some disadvantage as his video link was not working properly and he was unable to see any of the other participants at court. It was also his first time of giving evidence in the family court. I do not place much weight on that latter point, but at times his presentation was muddled, and it is unusual to hear an expert refer to another expert's opinions as "bizarre", his references to Doctor Hogarth. However, Dr Khandanpour confirmed that he, too, accepted that there were two hypotheses for M's injuries.
232. Dr Khandanpour's evidence was important, and it too had evolved from when he had presented his first report for the criminal investigation. He was able to confirm that he now accepted that the images did show that the arachnoid cyst was present, he had previously discounted that as being the case. Dr Khandanpour was also happy to agree with Dr Hogarth that the blood previously identified as being on the posterior fossa was actually on the surface of the tentorium. Dr Khandanpour also agreed, having had the opportunity of considering the Mayeda paper, that the subdural fluid collection seen over the right hemisphere could be linked to the arachnoid cyst.
233. Dr Khandanpour disagreed with Dr Hogarth about the nature of the injury to the cortex of the left frontal lobe. He discounted Dr Hogarth's opinion that it could be an infarct and maintained his opinion that it was a lesion or laceration. Dr Khandanpour told us that having considered the Palifka paper he had concluded that the images did show that the injury was a laceration as it met two of the criteria as set out in the paper. Dr Khandanpour said that the presence of the laceration pointed, as far as he was concerned, to AHT/NAI.
234. Similarly, Dr Khandanpour considered that the tear present in the corpus callosum was also linked to AHT and not a seizure as suggested by Doctor Hogarth. He considered it was an injury that rotation and shaking typically could account for. Very fairly, Dr Khandanpour accepted that this was a complex case and that it was possible that all the injuries seen in the images could have been caused by the combination of the rupture of the arachnoid cyst and the subsequent fall. Dr Khandanpour did not favour that explanation, instead confirming to the court that in his opinion, on the balance of probabilities, it was 51% NAI.

235. It became more difficult to follow Dr Khandanpour's evidence from that point, but overall he maintained his opinion that AHT/NAI was the most likely explanation for M's injuries. As I have indicated earlier, Doctor Khandanpour had adjusted his opinion too as the case progressed and, as I understood it, he told the court that he was no longer in a position to support AHT/NAI where the burden of proof requires "beyond reasonable doubt".
236. Mr Jalloh, the Consultant Paediatric Neurosurgeon, presented as a very impressive witness. Throughout his lengthy cross examination, he remained thoughtful and willing to engage with the questions put to him to explain his evolving position during these proceedings. Mr Jalloh explained why, even at the time of his first report, he did not consider that the parenchymal injury had been caused by AHT/NAI. He explained that with shaking injuries one would expect to see widespread areas of diffusion restriction but in M's case there was only one small spot. Mr Jalloh confirmed that the cyst would not have caused that spot either.
237. During cross examination Mr Jalloh did not resile from his opinion that the rupture of the cyst and raised intracranial pressure prior to the fall could have caused a subdural bleed. He maintained his view that the hygromas were caused by the rupture of the arachnoid cyst which then predisposed M to such a bleed when he fell. Mr Jalloh also maintained his revised opinion that the rupture of the cyst could have caused collections on both sides of the head [multi focal collections]. He explained that after seeing the growth of the cyst in M's scan in December 2022 he had conducted further research of the literature and found that there were cases of rupture and bilateral collections, Donaldson et al [E364]. At court Mr Jalloh said that he was very confident that bilateral collections could occur with cyst rupture
238. Mr Jalloh also remained firm in his opinion that the subdural collections were more likely to be hygromas [fluid] as there were no membranes present to suggest subdural haematomas. Mr Jalloh disagreed with Dr Khandanpour's assessment of there being a laceration [PBL]. He was very clear in his evidence that with such an injury "a cut in the brain" would have been seen on the CT /MRI images and it was simply not there. Mr Jalloh was not too troubled by the damage to the corpus callosum as it was such a small area of injury. He considered that it could still be consistent with trauma caused by the cyst rupture. He commented that it would be unusual to find such an injury in the splenium with shaking because it was so isolated.
239. Overall, I found Mr Jalloh to be a very helpful witness. He was thoughtful and was clear that he, too, had given the circumstances of the case a great deal of thought in trying to fulfil his expert duties.
240. Mr Markham and Mr Simmons are both very experienced in their field and both have significant experience of giving evidence at court. In her written submissions EIKC very helpfully set out the ophthalmology assessments carried out on M [paragraphs 28 to 30]. I do not need to repeat the details here, they are not contentious.

241. Mr Markham and Mr Simmons agreed on a number of issues (i) that it was possible for retinal haemorrhages to follow a low-level fall, (ii) that looking at the Gaussian curve proposition there were falls at low levels that could cause significant injuries and that a fall from a great height could cause no injury, although Mr Simmons believed that to be unlikely. They also agreed that there was no clinical explanation yet for the incidences of retinal haemorrhages which occurred during birth; that the rupture of an arachnoid cyst was a rare event and that there was little medical literature in relation to that issue.
242. Mr Simmons accepted that the Mayeda paper was limited in that it did not deal with the ramifications of the rupture of an arachnoid cyst and a subsequent fall. He also accepted that the paper suggested that retinal haemorrhages can occur from a ruptured cyst when no shaking has occurred. He agreed that the fall from the bed was a complicating issue in M's case.
243. Mr Markham's opinion was that the retinal haemorrhages were most likely to have followed quite quickly after the intracranial haemorrhages and rising intracranial pressure. Mr Simmons' opinion was that it was likely that the trauma that caused the subdural haemorrhages also caused the retinal haemorrhages, sometime within 7 to 10 days of examination on the 6<sup>th</sup> May 2022 i.e. at the earliest 26<sup>th</sup> April 2022.
244. A significant point of disagreement between Mr Markham and Mr Simmons was their opinion on the absence of swelling to the right optic nerve [papilledema]. Mr Markham was not particularly concerned about this, pointing out that retinal haemorrhages do not necessarily have to have optic nerve swelling present before occurring. In his opinion retinal haemorrhages can develop and occur more quickly than the swelling would.
245. Mr Simmons' evidence on this was quite different. He said that there would be swelling with raised intracranial pressure. He referred to the Mayeda paper as support for that view. In his opinion the absence of swelling to the right optic nerve pointed to the fact that it was unlikely there was raised intracranial pressure and that any rupture of the arachnoid cyst was not linked to the retinal haemorrhages.
246. I found both Mr Simmons and Mr Markham to be careful, competent witnesses. They were both trying to assist the court. Neither of them had any clinical experience of a ruptured arachnoid cyst. The Local Authority position was that Mr Simmons' opinion on how the retinal haemorrhages were caused represented the orthodox mainstream view in their profession and should be preferred, meaning that M's injuries were more likely to have been inflicted by a shaking mechanism.
247. It should be noted that although Mr Simmons agreed that he believed Mr Markham's view was a minority one, he did confirm that many of their colleagues would agree with Mr Markham.

248. In dealing with the family evidence, I consider it important to make a few general points. These proceedings started in May 2022, so the parents and the maternal grandfather were dealing with events that took place over 18 months ago. More particularly, the parents were at times being asked to remember events leading up to the 1<sup>st</sup> May 2022 in minute detail. They were unable to do so but I do not find that particularly surprising bearing in mind the passage of time.
249. The father has significant cognitive deficits. The psychological assessment carried out by Mr Crimes assessed his IQ at 71 which is a borderline classification. As a result of recommendations made by Mr Crimes, the father had an intermediary to assist him throughout these proceedings. The Mother's assessment suggested no particular cognitive difficulties.
250. The maternal grandfather's evidence confirmed that his daughter ran down to the basement area of their home on the 1<sup>st</sup> May 2022 saying that M had fallen off the bed. She explained that he had become floppy and unresponsive, and the maternal grandfather started CPR. Before the 1<sup>st</sup> May 2022 the maternal grandfather thought that M had been unwell on and off for a few weeks or a month he could not be certain.
251. Surprisingly, perhaps, the maternal grandfather told the court that he had not discussed how M had fallen off the bed with the parents. It did seem to me that the maternal grandfather was trying to paint a picture of a happy family unit at the time in question; he told us he had not seen the parents argue and he had not seen them be rough or aggressive with M. The maternal grandfather did say that the parents were stressed because of their housing situation. However, I did not gain the impression, as suggested in the Local Authority submissions, that the maternal grandfather's evidence was part of some malevolent plan to dupe the court as to what had happened on the 1<sup>st</sup> May 2022, or earlier.
252. During their cross examination the parents were asked on many occasions to answer questions about the events prior to 1<sup>st</sup> May 2022 in the lead up to their son's admission to hospital. I have already referred to the length of time that has elapsed since those events took place. The father would likely have significant difficulty in recalling such details. At times I did find that the mother was somewhat defensive in her answers, but I gained the impression that for the most part she answered when she could.
253. It was suggested by the Local Authority that neither parent had been telling the truth about the 10 days leading up to M's admission to hospital. DGKC suggested that their "I can't remember it" was a deliberate strategy and was the equivalent of a "no comment" response in a police interview, trying to avoid being caught out in a lie.

254. The parents answered questions about the text messages that had been disclosed between them. Both accepted that the messages demonstrated that they had arguments from time to time. They also accepted that in February 2022 there had been a very serious argument and the father was thinking of leaving the mother as long as he could take M with him. Neither parent was able to recall what the argument was about. The messages also showed that on 2<sup>nd</sup> May 2022 the mother had an argument with her mother after her sister T reported something that their mother had said about the father.
255. The mother was able to recall that she had told the father what her mother had said and that he had been upset by it. The father was also able to recall that he had been upset. Neither of them could recall, they said, what the mother had said. I find that difficult to accept as being truthful, particularly on the part of the mother. The reported conversation took place the day after M was admitted to hospital. The mother was able to recall that T told her something which had led to an argument with her mother. For the mother to say that she could not recall what T had said is, in my judgment, implausible. I do not know why the mother and the father would not tell the truth about this matter except perhaps for not wanting to share some unpleasant/hurtful comments made by the mother's mother.
256. However, it is not for the court to speculate on those matters, neither T nor her mother were called to give evidence on that point. Taking all the evidence into account I am not persuaded that this lie is of any great importance and does not, in my judgment, suggest that the parents are lying about everything else, or that it is indicative of guilt for the injuries M suffered.
257. The parents' evidence as to what happened on the 1<sup>st</sup> May 2022 has been consistent throughout these proceedings. They left their home to go shopping, they returned in the late afternoon and were in their bedroom when the fall happened. The mother was ironing, the father was also in the room. The medical notes show that the mother took M to the GP on two occasions in the week prior to the 1<sup>st</sup> May 2022 because she had concerns about him vomiting.
258. In her cross examination much was made by the Local Authority that the medical notes for these 2 appointments did not mention that she had been told M might be teething. In my judgment nothing turns on that. It is not unusual in my experience of court proceedings for notes not to record everything that has been said in an appointment/meeting/interview. CB's letter from January 2023 does not mention what AD believed was said during that appointment. The notes set out the examination and the findings as one would expect. If it is being asserted by the Local Authority that these appointments were all part of an elaborate cover up story on the part of the parents, or one of them, to obtain a satisfactory explanation for the vomiting, knowing that they had caused injury to M, I find that to be, frankly, ridiculous. I reject that assertion; there is no evidence to support it, and in my judgment would involve a level of sophistication and guile that these parents do not possess.

259. During the parents' cross examination, particularly that of the mother, the photographs taken by the police on the 3<sup>rd</sup> May 2022 [M 64 onwards] seemed to assume a greater evidential significance than previously accorded to them. As I indicated earlier in this judgment, I consider that caution must be taken in respect of these photographs. There is no real evidence before the court of what had happened to the room between the 1<sup>st</sup> and 3<sup>rd</sup> May 2022 except that we know the Father was in the room at some stage collecting items for the mother. The court must therefore be very careful about according too much weight to what the photographs purportedly show. They are helpful in identifying the size of the room and location of the bed etc but in my judgment no more than that. What they do show is that the ironing board was in the room on the 3<sup>rd</sup> May 2022 and that a pillow appears in the middle of the bed.
260. The father explained to the court why his clothes were not visible in the photographs and he took the trouble to bring those clothes to court to show why ironing the folds had been difficult for the mother. Both parents' accounts of the events of 1<sup>st</sup> May 2022 have remained consistent since that day. Even under the pressure of court proceedings their account of what happened did not change. The mother's explanation of where she was ironing and where the Father was standing simply reinforced the point, if she is to be believed, that neither of them would have seen M fall.
261. In the text messages produced at court there is one from the mother to her sister 1<sup>st</sup> May 2022 at 18.35 pm, "..... it's all my fault we shouldn't have turned round". There is also a message from the father a friend, AH, "..... M was ill for a few days then he fell off the bed and went unconscious and stop breathing then he had a seizure and been in hospital since Sunday"
262. That is contemporaneous evidence tending to support the parents' account of what happened on the day. The court must consider whether those two messages, sent before the court proceedings started, are all part of an elaborate plan by the parents to lay the ground, as it were, for covering up something else, for example, that one of them had caused injury to their son. Again, considering all the evidence before the court, I do not find that explanation of a deliberate cover up to be plausible.
263. In considering all the evidence before the court there are two other important matters to note. Firstly, the fact that there were no injuries identified on M that are normally associated with the impacts caused by shaking type mechanisms. PSKC has set out these various injuries in some detail at paragraph 29 to his submissions. This complete absence of other features associated with shaking type injuries is, in my judgment, an important part of the overall evidential picture. Secondly, the swelling found at the back of M's head and noted on the body map, which all medical experts agreed was supportive of M having fallen with impact to his head as Dr Cleghorn described.

264. All the medical experts accepted that there were two possible hypotheses for M's injuries. It is noteworthy that Dr Khandanpour's evidence suggested a shift in his opinion to the extent that he cannot now say that he can support AHT/NAI where the burden of proof is "beyond reasonable doubt". It is also noteworthy that Mr Simmons agreed that there were two possible hypotheses for the injuries. It would have been open for him to say that the ruptured cyst/fall theory was not a viable explanation for M's injuries.
265. Dr Cleghorn made it clear that a child of M's age and development could manoeuvre himself off the bed and she said that she would not be surprised by this. The Local Authority's suggestion of M having to have somersaulted off the bed was not put to her in evidence and so we do not know what her view of that would be. What we do have is her very straightforward evidence that a child of M's age could have rolled off the bed.
266. As I have said, I found Dr Hogarth and Mr Jalloh to be careful and thoughtful witnesses. Mr Jalloh was, in my judgment, a very impressive and compelling witness. On balance, where Dr Khandanpour's evidence differs from the evidence given by Dr Hogarth and Mr Jalloh, I prefer the evidence of Dr Hogarth and Mr Jalloh. I found Mr Jalloh's explanation in relation to the laceration [PBL], that the required cut to the brain was not present on the images, to be more compelling than Dr Khandanpour's insistence that it was a laceration; I accept Mr Jalloh's evidence on that.
267. I also found Mr Jalloh's explanation for the reason why the small spot of diffusion restriction not being the result of a shaking injury to be compelling and I accept his evidence on that. In reaching my decision in respect of this part of the expert evidence, I have also borne in mind the fact that right at the outset of his involvement Dr Khandanpour had been unable to identify the existence of the arachnoid cyst.
268. As noted by Dr Cleghorn, the ophthalmic evidence was difficult to evaluate. Mr Simmons and Mr Markham both very properly made concessions when necessary. I found them both to be sensible and straightforward witnesses. The Local Authority placed great weight on the fact that there is little peer reviewed research supporting Mr Markham's view. He very fairly accepted that in his evidence. Mr Simmons' participation in various working parties of the Royal College of Ophthalmologists does not assist this court very much in assessing the evidence. The Mayeda paper demonstrated the lack of empirical evidence in respect of the ophthalmological consequences of an arachnoid cyst rupture. Of the 30 children examined only three had retinal haemorrhages and none were comparable with those seen in M. Only 15 of the children had swelling of the optic nerve characteristic of raised intracranial pressure. The Hagan paper identified retinal haemorrhages associated with rupture of an arachnoid cyst but the haemorrhages were flame shaped, not found in M's case. It must be accepted that the numbers involved in the studies were very small.



269. Mr Simmons accepted that M's case was complex. He also accepted that the rupture of the arachnoid cyst and subsequent fall could have caused to M's injuries, although he preferred AHT as the more likely answer.
270. I have considered the family evidence with some care. I have also made some findings about their evidence earlier in this judgment. I accept that at times the evidence of the parents was difficult to believe, and I have referred to that earlier. However, I do have to bear in mind that their account of the events of 1<sup>st</sup> May 2022 has never faltered or changed. I am not persuaded that the parents, with or without the maternal grandfather, have conspired to concoct a story to deceive the court. To have hit on such a fictitious explanation, which would subsequently be accepted by many experts as a possible likely cause of the injuries, is simply not credible.
271. Taking all the evidence into account I am satisfied, on the balance of probabilities, that M did fall from the bed when his parents' attention was diverted. I have referred to Dr Cleghorn's evidence and the body map evidence which support this finding. I place quite a lot of weight on those parts of the evidence. Whilst the parents were not perhaps helpful in all their recollections, I have no reason to disbelieve their account that M fell off the bed. Accidents happen.
272. Mr Simmons' evidence was the main driver for the Local Authority position that the retinal haemorrhages could not have been caused by the fall and that there was no raised intracranial pressure. On balance I am not persuaded, in this instance, that Mr Simmons view that the retinal haemorrhages were more likely the result of inflicted injuries can be right; there were no other features of AHT/NAI present, again a matter I place great weight on. Mr Simmons was a good witness but had to accept that there are a lot of unexplained issues about the causation of retinal haemorrhages.
273. The Local Authority have not been able to provide any evidence that either of the parents inflicted injury on M whether by shaking or other means. The rows that the parents admitted to having in February 2022 did not take the evidence very much further. The court must be very cautious of according them undue weight. The lack of any of the other usual features associated with AHT/NAI is very striking in this case.
274. As has been acknowledged by everyone, this has been a difficult case to deal with. However, based on the findings I have made, the Local Authority have failed to discharge the burden of proof in asserting that M's injuries were inflicted by one or other of his parents.
275. I would like to thank everyone involved in this case for their assistance and their patience. I would like to thank the parents particularly for the way that they have conducted themselves throughout these proceedings. AD made it clear that they had always been cooperative with the Local Authority and had engaged as required. I

understand that they were separated from their son for a considerable period which would have been devastating for them.

276. On behalf of M, EIKC suggested that the court may wish to comment on the situation that had led to the Fact Finding in April 2023 having to be relisted. I have dealt with the reasons earlier in this judgment. At that time the Local Authority filed a statement explaining their error, and the legal team did the same. As I understand it, further staff training was to be implemented to ensure such problems did not occur again. It is quite extraordinary that the system in place at the time did not pick up on the problem earlier, but I do not consider it appropriate to comment further than that. The delay caused by the situation was about 7 months, which is very regrettable. The only saving grace is that M has been back in his parents' care during that time.

Judgment Date: 31<sup>st</sup> January 2024