Neutral Citation Number: [2021] EWHC 2041 (Fam)

IN THE DERBY FAMILY COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 11/06/2021

Before:

Mr Justice Poole

- -

Re H and Others (Children) (Fact Finding: Rib Fractures)

Frances Heaton QC and Jessica Southcote-Want (instructed by Derby City Council Legal Services) for the **Applicant**
Rex Howling QC and Brian Jubb (instructed by Bhatia Best Solicitors) for the **First Respondent**
Kate Burnell QC and Peta Harrison (instructed by Broadbents Solicitors) for the **Second Respondent**
Tina Cook QC (instructed by and leading **Muctar Johal** of Smith Partnership) for the **Third, Fourth, Fifth and Sixth Respondents**
Louise Sapstead and Samuel Coe (instructed by Elliott Mather Solicitors LLP) for the **Seventh Respondent**
Kirsty Gallacher (instructed by Family Law Group) for the **Eighth Respondent**
Gina Allwood (instructed by the Royal Derby Hospital NHS Trust) for the **Intervenor**

27 to 30 April, 4 to 6 May, 10 to 14 May, 19 May, 24 to 26 May, and 9 June 2021

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JUDGMENT

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

Mr Justice Poole:

Introduction

1. On 17 February 2020, H, a four month old baby boy, the sixth child of the First and Second Respondents, was found to have three right posterior rib fractures. The following day a Child Protection Medical examination ("CPM") revealed bruising to his feet and lower spine. On 19 February 2020 further x-rays revealed four left posterior rib fractures. In the five to six weeks prior to the discovery of these injuries, H had been in the care of his parents at home but had also undergone numerous examinations and investigations by healthcare professionals, including a period of in-patient treatment at the Royal Derby Hospital. He had been born at 31 weeks gestation and had struggled to put on weight as a consequence of feeding difficulties associated with a very rare chromosomal abnormality known as Tetrasomy 18p. The parents had been known to social services since 2017 when the family had support from Early Help. H's sisters had each been made subject to a Child in Need plan in April 2019 due to concerns about the parents' mental health, home conditions, neglect, and lack of supervision. Before he was born it was concluded that H would also require a Child in Need plan. The eldest child has now alleged that the father assaulted her in or around November 2019.

2. This judgment follows a finding of fact hearing. The Local Authority, Derby City Council, makes a number of allegations which are set out, alongside this court's findings, in the schedule appended to this judgment (Appendix One). The Local Authority relies on the alleged facts to support findings that all six children have suffered significant harm and are at risk of suffering significant harm in the care of their parents and that the criteria set out at s. 31(2) of the Children Act 1989 are met such that a care order or supervision order may be made in relation to each child. The core issue is how H sustained his rib fractures, an issue which gives rise to several questions: when were the fractures sustained? To what extent did Tetrasomy 18p or other factors affect the strength of H's bones, rendering him more vulnerable to fractures? Did healthcare professionals inadvertently cause his fractures? If the fractures were caused when in the care of his parents, were they inflicted inadvertently due to non-accidental infliction of excessive force?

3. The family in this case comprises the First Respondent mother ("the mother"), the Second Respondent father ("the father") and their six children:
    a. C, a girl aged 17. C left home on 31 March 2020 since when she has been cared for by J, the mother of C's boyfriend, K. C resides with J under a s. 20 agreement.
    b. D, a girl aged 15, who continues to live with the mother and father.
    c. E, a girl aged 10, who has Sotos Syndrome and who is currently placed with foster carers subsequent to an interim care order made on 2 April 2020.

d. F, a girl aged 6 who is currently with the same foster carers as E subsequent to the same interim care order.
e. G, a girl aged 4 who is currently with the same foster carers as E and F subsequent to the same interim care order.
f. H, a boy, born at 31 weeks gestation in October 2020. H is placed with different foster carers from E, F, and G. He was so placed following an interim care order made on 26 February 2020.

4. C and D are able to give instructions to lawyers and are separately represented by their own solicitors and counsel. E, F, G, and H are represented by their Children's Guardian. The Royal Derby Hospital NHS Trust is an intervenor due to the large number of healthcare professionals giving evidence and in relation to several of whom the parents have raised concerns about their handling of H. To protect the interests of the children, it is necessary to preserve their anonymity and that of their parents. I have also anonymised the identities of the individual social workers and healthcare professionals. The Local Authority and relevant NHS Trusts are named. Appendix Two is a schedule of the anonymised persons referred to in this judgment. The hearing was conducted remotely save for when the court heard evidence from the parents in person at a hybrid hearing at Derby. I also heard oral evidence from C, four social workers, and four expert witnesses, I have received written witness statements from over 40 healthcare professionals of whom 15 gave oral evidence. I have also received written evidence from D and from foster carers. The documentary evidence, including medical records, runs to over 7,500 pages. As the hearing progressed the need for some of the healthcare professionals to give oral evidence was dispensed with and the hearing time reduced. I am most grateful to all counsel and solicitors for the fair, skilled, and efficient preparation and presentation of this complex case.

H's Injuries

5. X-rays taken in February 2020 and the CPM examination on 18 February 2020 revealed that H had sustained the following injuries:

a. Fractures of the posterior aspects of the right 8th, 9th and 10th ribs.
b. Fractures of the posterior aspects of the left 8th, 9th, 10th and 11th ribs.
c. A 1.5 x 0.5 cm rectangular bruise to the outer aspect of the left foot.
d. A small red mark just about the bruise at (c) to the anterior aspect of the left foot.
e. A 1 x 0.5 cm faint blue rectangular bruise to the outer aspect of the right foot.
f. A 1.5 x 1 cm irregular bruise to the right side of his lower spine.

The Findings Sought by the Local Authority

6. The Local Authority's schedule of findings was revised during the hearing with the withdrawal of certain allegations. The final schedule is appended to this judgment. The key factual findings sought in relation to H can be summarised as follows:

   a. H's rib fractures and bruising to his feet were inflicted nonaccidentally by the mother and/or the father.
   b. The rib fractures were caused on at least two separate occasions by compression from both the back and front of the chest. H was held between adult hands and squeezed with a high level of force lying considerably outside the normal or rough handling of a child.
   c. The injuries to H's feet were caused by the application of force which lies outside the normal handling of a child.
   d. The bruise to the right side of H's lower spine was caused by his being left lying on his nasogastric tube for an inappropriately long period of time.

7. The remaining findings sought in relation to the other children can be shortly summarised as follows:

   a. In November 2019, at the family home, the father hit C to the head, above the ear, twice, with a closed fist, using the side of his hand.
   b. On an unknown date the father slapped E around the face.
   c. The children have been exposed to domestic abuse perpetrated by the father by his shouting and throwing objects. On a date unknown the father broke a television at the family home in anger.
   d. The parents have failed consistently to meet E's health needs, for example missing medical appointments, failing to ensure she wore her Piedro boots to school, and failing to provide the school with an EpiPen for her use.
   e. The parents have allowed E and F to attend school on various occasions unkempt, unclean, in dirty clothes, with head lice, smelling of urine, and with F's belongings smelling of urine.

   It is also alleged that the father has failed to engage with social care.

   The Local Authority alleges that all six children have suffered significant harm and are at risk of suffering further significant harm in the joint care of their parents and that the threshold under s 31(2) Children Act 1989 is met as a result of the facts alleged.

Background and Chronology of Events

8. I have been provided with a very helpful, immensely detailed chronology by Counsel for the Local Authority, cross referenced to the bundle of documents. I need only summarise the key parts of the chronology in this judgment.

Prior to H's Birth

9. The mother and father met in 1990 when he was 20 and she was 17. They lived in Surrey at the time and he worked for the Royal Mail whilst she worked as a hairdresser. They eventually married in 2002 and C, their first child, was born after IVF treatment, in 2004. The father has a history of mental health problems. He first attended his GP with anxiety and depression in April 2004. In October 2010 he attended A&E with acute memory loss following what was thought to be a fit. He was initially uncommunicative and staring into space but whilst in the hospital he started verbalising asking for his stillborn daughter, L, who had died a year ago at 34 weeks gestation. He was seen by psychiatrists over the following two to three years. He was diagnosed with PTSD at one point and depression with psychotic symptoms at another. He was noted to hear voices urging him to harm or kill himself. He reported outbursts of anger and verbally lashing out at the mother. He reported being suicidal at times, having attempted suicide on at least two occasions. The mother confirmed another record that she had removed a knife from the father on one occasion. It is recorded that that incident ended with him punching the wall. Eventually he appeared to improve but suffered a setback after an altercation with some neighbours in September 2013. The family decided to leave Surrey and moved to Derbyshire in 2014.

10. In November 2014 the father was noted to have a history of "major depression – in partial remission." By then the couple had three children and their youngest, E, was four years old. The mother was heavily pregnant with F. E has Sotos Syndrome which is a genetic disorder associated with overgrowth in childhood, mental and developmental difficulties, and poor co-ordination. She has required extensive therapeutic input for her gait and balance, continence issues, and speech and language. She was advised to wear Piedro boots to support her gait and balance. She is thought to be allergic to tuna fish having twice suffered a bad rash. Her school expects to be provided with EpiPens for her in case of anaphylactic shock. E has had a number of accidental injuries during her childhood resulting in attendances at hospital, usually involving falls.

11. A few weeks after the birth of G in August 2016 there was an incident at the family home in which an altercation between the father and his brother resulted in the father forcing his brother out of the house. In doing so, a door swung and struck G, who was a newborn baby and was being held by the mother, on the head. She was checked at hospital and no injuries found. The police became involved but no further action was taken. A health visitor attended the family home the next day and reported "Baby well and presenting normally since incident. Parents meeting all needs with emotional warmth and good care in an appropriate environment."

12. On 28 October 2016 the father attended the emergency department following an altercation with "no physical injury but very stressful. Returned home pain in chest." A few days later the mother attended her GP suffering from panic. She was already on Citalopram and her dose was doubled, The GP noted that "daughter bullied when partner went to pick her up from school … other parents and families are chasing and harassing their family. Police involved." The daughter concerned was E. This hostility deteriorated and on 14 November 2016 the father made a comment to perpetrators of the bullying.
    Five males tried to pull him out of his car and a neighbour spread wholly untrue rumours that he was a paedophile. Both the mother's and the father's mental health were adversely affected. Abuse from the neighbours continued and in February 2017 the tyres on the family car were slashed when it was parked outside the house. On a health visitor review it was noted that "both parents are suffering depression and it is emotionally impacting upon the children." The father was reported to be suicidal "and has had plans". In March 2017 the mother's Citalopram dosage was increased further.

13. In April 2017 the parents were served with an eviction notice and, in contact with medical personnel, the mother said that both of them had felt like killing themselves. A referral was made to social services. An assessment was completed but no further action was deemed to be required. The serious, ongoing problems with neighbours, including threats on the lives of the family, continued for several months. D was being bullied at school as part of the hostility in the area towards the family. The family was moved to new accommodation in or about January 2018, but the accommodation was unsuitably small for the size of the family. In May 2018 the mother agreed to an Early Help Assessment which was then completed by AA, Health Visitor. She noted that the family were very close to each other and had a strong supportive bond, but little support and were socially isolated They were under financial pressure and were overcrowded at home but had moved to get away from their neighbours [F63]. The home was untidy and unclean, the children unkempt, the father needed support to be able to parent the children, and the parents needed support to ensure the children attended school.

14. AA says that on 6 July 2018 on a home visit the mother alleged that the father had slapped E to the face when she was having a panic attack. The father had felt bad about what he had done and cuddled E afterwards. The mother played down the incident. The mother has told the court that AA misunderstood what she had told her – the father had pushed E away from danger from a cat that had been brought into the house. AA says that during the same visit in July 2018, F and G were playing in the same room when one of them became tangled up with a bin liner wrapped around her neck. Only then did the mother intervene by asking C to remove the bin liners. At that time D was being home schooled but was on the waiting list for a new school. A referral had been made to the Home Schooling Officer, BB. The mother reported that D was jealous of the attention given to E because of E's special needs. The mother told her that some marks on E had been caused by D.

15. The family continued to work with Early Help. D started at a new school in January 2019 but this lasted for less than a month before she refused to attend. The school attendance of the other children was low, with non-attendance often ascribed to ill-health. F turned up at school with a black eye which the mother stated was due to her bumping into a kitchen chair. The father's mental health was deteriorating in early 2019. It was decided that a single assessment should be carried out – it was performed by CC, Allocated Case Worker, in February to April 2019 [C631], and concluded that the threshold was met for a Child in Need plan for each of the five daughters. Later in April 2019 the mother informed CC that she was pregnant (with H) and the unborn baby was also placed on a Child in Need plan.

16. CC continued to work with the family but from the outset of her involvement the father would not engage with her. He would leave the room and be wholly uncommunicative. The mother, however, engaged positively with the Child in Need plan, although she struggled to deliver on promised actions. In late August/early September 2019 the family moved to a larger property, C, E and F started at school in the new school year, but D was home-schooled. G was at nursery. At a date that it is difficult to determine but was probably in or around September 2019, D saw an obscene picture on C's phone apparently sent to her by K. She reported it to the parents who spoke to C. They understood her to be having sexual relations with K, they wholly disapproved of the image he had sent to her, and they asked her to end her relationship with K which she did not do. In October 2019 H was born at the Royal Derby Hospital.

Following H's Birth

17. H was born at 31 weeks gestation, weighing 1.8 kg. He was delivered by Caesarean section. His Apgar scores were 8 at 1 minute and 8 at 5 minutes and he was not acidotic. He required five inflation breaths followed briefly by ventilation breaths but then respiratory effort was established albeit gasping. After delivery he was cared for on the Neonatal Intensive Care Unit ("NICU"). He had signs of respiratory distress syndrome but was self ventilating on air from day four. The mother was discharged home on day five. Over the next two weeks or so she reported that she was unable to visit H on the NICU as often as she would have wished because she had a cold. At a network meeting which included CC and the mother, about two weeks after H's birth, it was recorded:

> "E's Piedro boots are too small and needs to get new ones. School reported to Mum that her EpiPens are out of date so they need some more. Mum stated she would sort it … E is to be having guidance on personal care now that she is getting older and her hormones are changing. F has eczema on her back. Mum has been advised to use cream for it. F has settled in well at school…

> F prefers adult attention over children… has been knocking on the staff room door. G's attendance has dipped and she isn't in nursery today. H is in the NICU and is slowly putting weight back. He is now off his oxygen. The mother reports she has been expressing milk for him. The mother informed the meeting she hasn't visited for a while as she has a cold…"

18. Genetic testing of H was reported on 8 November 2019 and revealed two chromosomal abnormalities – Tetrasomy 18p and 16p 12.2 deletion. The report noted that babies with Tetrasomy 18p "often have trouble feeding… some affected children have hypotonia whilst others have hypertonia. Additional features of Tetrasomy 18p can include seizures, problems with vision, recurrent ear infections, mild to moderate hearing loss, constipation and other gastrointestinal problems, scoliosis or kyphosis, a shortage of growth hormone, and birth defects affecting the heart and other organs."

19. Concerns were raised by the NICU team about the infrequent and short visits to H made by the parents but their response was that they had been unwell. On 19 November 2019 a Multidisciplinary Team Meeting was held attended by the lead consultant DD, NICU Family Care Co-ordinator, FF, and the parents. The parents were informed that H had been diagnosed as having Tetrasomy 18p. Plans were made for H's discharge with FF and/or her colleague, EE, to visit weekly for the first two months. CC would continue to visit every three weeks as she had been doing as part of the Child in Need plan. H was discharged home on 21 November 2019. The discharge summary is at [H57]: out-patient review was planned for 8 to 12 weeks.

20. On 26 November 2019 at her first home visit, FF recorded that the parents reported that "H was feeding well [but] advised H had started to vomit more … He was seen feeding after weighing and did vomit with wind." The visit was described as "hectic" as the other children kept getting new kittens out but the parents were patient and reprimanded appropriately. "The house was a little cluttered and the odour of dogs was apparent although not noted to be particularly unclean… H was handled with care by both [parents] who were loving and attentive to his needs." GG visited the home with a student on 2 December 2019 when H was measured and weighed.

21. H's vomiting after feeds continued and on the advice of the NICU team his GP prescribed Omeprazole 10mg/5ml in suspension (wrongly recorded as 5mg/5ml), 5ml to be given every day. The prescription was made on 12 December 2019 but it appears that it was not picked up from the pharmacist until 17 December 2019. On that day the family was visited by GG who noted H's continuing feeding difficulties but that he was alert and well hydrated. She noted that both parents handled H warmly and gently. The house was observed to be less cluttered but with a number of kittens running around the downstairs rooms. The mother stated that she had obtained two EpiPens from the GP, that being the number the GP would allow, but that the school wanted both of them.

Problems managing the children's head lice were discussed [C35]. GG visited again on 30 December and noted that the house was warm and that "home conditions were improved and were clean with space to move. However, the kittens were escaping regularly." H weighed 3.05 kg and was observed to be more alert and interactive. He was smiling at the mother and looking intently at her face. It was noted that the father could not help with night feeds due to his medication but helped with daytime feeds. The other children's head lice appeared to be coming under control [C36]. H was seen by a Speech and Language Therapist on 2 January 2020, he attended an outpatient appointment with occupational therapy on 7 January, and he was seen at the NICU by FF on the same day. He was seen by CC at home on 9 January 2020.

22. On 13 January 2020 the mother took H to an out-patient appointment with DD attended by FF. She recalls reporting to FF that she was concerned that H had had a seizure the previous night. Following the consultation DD wrote to H's GP [H149]:

"Diagnosis:
1 Tetrasomy 18 syndrome
2 Recurrent vomiting and moderate gastroesophageal reflux
3 Recent poor weight gain and feeding difficulty
4 Fixed flexion abnormalities of interphalangeal joints (bilaterally)
5 Small persistent atrial shunt
6 Bilateral inguinal hernia (right quicker than left)
7 Ex 31 weeker

Medication
1 Omeprazole 10mg once daily
2 Gaviscon PRN

Plan
1 Review feed intake next 24 hour
2 Consider elective admission for NG tube if poor weight gain and feeding continue +/- for the investigation

> On examination this young man was quite unsettled with intermittent high pitched cry … H is experiencing difficulty with his feeding, possibly a reflection of the diagnosis of Tetrasomy 18; I am acutely concerned about his intake, although he appears well hydrated today … we may need to change his milk to high energy formula …"

23. On 15 January 2020 H was examined at HH's outpatient clinic. She is a Consultant Hand and Plastic Surgeon. She called in II, Consultant in Trauma and Orthopaedics to examine H's legs and spine. He detected an obvious scoliosis that required specialist referral, and he showed the mother some stretching exercises to avoid contractures in H's lower limbs.

24. On 21 January 2020 H was admitted as an in-patient to the Z Ward at the Royal Derby Hospital because of continuing concern about his feeding and weight gain. He underwent an ultrasound examination by JJ, Consultant Radiologist, that day which revealed appearances consistent with pylorospasm but the muscle did not thicken enough for a diagnosis of pyloric stenosis [H544]. A nasogastric (NG) tube was inserted [H409]. He was examined on a ward round on 22 January 2020 attended by KK and LL. The parents recall a doctor and students performing the Moro (also known as startle) reflex test on H.

25. On 23 January 2020 H was sedated and taken to the MRI suite for a head scan. The lead radiographer was MM assisted by NN. A nurse helped to bring H from the ward to the MRI suite. The mother attended with H in the preparation area and the father and D were in the waiting area by reception. H would not stay sufficiently still for useful images to be taken and the MRI was abandoned. The mother recalls that on 26 January 2020 on Z Ward, she
walked in to find that the mother of another patient had picked up H and was holding him. The mother says she reported her concerns to staff but there is no record of her having done so. On the same day H was allowed home for the night. He was returned to the ward on 27 January 2020 and underwent a Barium Meal reported by PP, Consultant Radiologist, at [H 542]. It showed no evidence of obstruction or twisted bowel. The images from this scan have subsequently been reviewed by PP and JJ at [H1147]. They noted:

> "In retrospect the lower right rib fractures seen on subsequent xrays may be discernible as faint ill-defined opacities projected over the ribs. Even in retrospect the fractures on the left are not seen, but this is a low dose study for the examination of the upper gastrointestinal tract. It would be useful for the expert witness to be provided with this study."

As discussed later in this judgment, Dr Halliday, Consultant Radiologist, acting as an expert witness, has stated that the Barium Meal images show a fracture of the 10th right rib. Nevertheless, the Barium Meal was not undertaken to check for fractures and no fractures were noted at the time.

26. The records show that H was discharged from the Z Ward on 29 January 2020 to continue NG feeding at home. FF made a home visit the following day. The NG tube needed re-inserting on 29 and again on 31 January 2020. An MRI head scan under general anaesthetic was planned for 5 February 2020 but was postponed because H had a cold. EE, neonatal nurse, visited on 7 and 10 February 2020. FF visited in the company of a student nurse QQ on 13 February 2020. She noted that H had lost weight and was continuing to receive Omeprazole.

27. On 17 February 2020 H was taken by the mother to an appointment with RR, Consultant Geneticist, at the Derbyshire Children's Hospital. RR is an employee of QMC, Nottingham. His main findings were that weight, length and head circumference were all less than 0.4^{th} centile for age. He had camptodactyly

(fixed flexion) at the proximal interphalangeal joint of the middle fingers, bilateral inguinal hernia, thoracolumbar scoliosis and generalised hypertonia [H459]. He arranged for an x-ray of H's spine and reviewed it the same day. It showed

> "… significant thoracolumbar scoliosis and healing fractures of the right 8th, 9th and 10th ribs. I brought this to the attention of DD and I told him that I was not aware of bone fragility or fractures being a feature of either Tetrasomy 18p or 16p12.2 microdeletion. DD told me that he would get H readmitted on 18th February for a full non-accidental injury skeletal and a full physical examination."

28. The mother recalls that RR had provided her with written information about Tetrasomy 18p that day which included the following:

> "There has been some evidence suggesting that people (including children) with Tetrasomy 18p have decreased bone mineral density, meaning that they may be more susceptible to bone fractures."

However, there is more than one information sheet about Tetrasomy 18p within the records, and other sheets do not mention a link between Tetrasomy 18p and fractures. RR's statement refers to a different information sheet having been provided to the mother.

29. FF liaised with the parents and H was brought by the mother to the Royal Derby Hospital on 18 February 2020 and admitted to the Z Ward. A CPM was performed by TT, Paediatrician, in the presence of the mother and social worker, UU. Locum Consultant Paediatrician VV, also attended at the end of the examination. The bruising referred to at paragraph 5 of this judgment was noted. The mother explained that the bruise on H's back could be accounted for by his lying on his NG tube, but TT noted, "I would not expect H to bruise after lying on his tube for a short period of time and thus concerns are raised that he has been lying on it for longer than he should have been." The mother stated that the bruising to H's feet could have been caused when he was restrained during the x-ray on 17 February 2020. TT noted, "Although we would not expect to use enough force to cause bruising whilst restraining a child, the explanation fits the pattern of bruising seen." The mother raised the difficult MRI scan on 23 January 2020 as possibly explaining the presence of rib fractures (only the right rib fractures had been identified as at the date of the CPM and they had not been dated). When VV attended and asked further questions, the mother raised the incident on 26 January 2020 when another patient's mother had picked up H on the Z Ward. TT noted, "Her story has some inconsistencies particularly with regard to the other lady on the ward during his last admission." She noted that the concern about the other patient's mother "was the first time that this story was given." [E5]. The conclusion reached was:

> "Posterior rib fractures are most likely to be non accidental in nature. The bruise on his lower spine is over a bony prominence and the cause of this is unclear. The bruising to his feet would fit the explanation given by mum, further history to corroborate this should be obtained… Mum denied harming her child throughout the CPM and seemed genuinely upset throughout the whole process. However due to the fact that there are inconsistencies in her story and that we have unexplained rib fractures, child protection procedures will need to be followed. H will need a CT head scan and skeletal survey. He will also need examination by ophthalmology to look for retinal haemorrhages. He will have blood tests to look at his bones and coagulation studies. We advised the social care to book the other siblings for medical safeguarding examination in view of unexplained injury in H." [E6]

30. A skeletal survey on 19 February 2020 revealed, "multiple bilateral healing posterior rib fractures. On the right these are seen of the right eight, ninth and tenth ribs and affecting the same ribs on the left. There is florid periosteal reaction around the left rib fractures."

31. On 20 February 2020 CC and GG separately conducted home visits. On 21 February a strategy meeting was held and a decision taken to seek for H to be discharged into foster care on the basis that H had suffered non accidental injury whilst in the care of his parents [CC statement 23 February 2020, para. 17, C21]. CPMs for E, F and G were arranged. Accidental injuries to E and F were noted but no non-accidental injuries. On the same day an ambulance was called for the father who was suffering from acute depression and was not communicative.

32. On 26 February 2020 the local authority issued care proceedings. An Interim Care Order was made in respect of H with a plan of removal to foster care. Interim Supervision Orders were made for E, F and G with a plan for them to remain at home, the father agreeing to leave home, and the maternal grandfather to stay in the home supervising. The police became involved and the parents underwent police interviews on 12 March 2020. They raised concerns about H's handling by healthcare professionals and the unknown mother of another patient. C and D were interviewed by police on 19 March 2020.

33. A repeat full skeletal survey on 4 March 2020 showed, "healing fractures of the 8th to 10th ribs on the right side and the 8th to 11th ribs on the left are again demonstrated."

34. H's condition deteriorated in hospital and he was transferred to the Paediatric Intensive Care Unit at Queen's Medical Centre, Nottingham. On 16 March 2020 further x-rays were taken and were reported by WW, Consultant Radiologist at Nottingham University Hospitals NHS Trust [H1058]. He wrote,

> "There are only 11 ossified rib pairs. Allowing for this, there are fractures of the posterolateral aspects of the left 8th and 9th ribs, and the posteromedial aspects of the left 10th and 11th ribs. There also areas of expansion affecting the posterior/posteromedial aspects of the right 8th, 9th and 10th ribs which are likely to represent additional fractures in a more advanced stage of healing than those on the left … Conserus alerted in view of the bilateral rib fractures which appear to be of different ages."

On 5 May 2020 H underwent an open fundoplication and gastrostomy as well as right inguinal hernia repair. He was then transferred back to the Royal Derby Hospital. He was discharged from hospital and into the care of foster carers on 25 June 2020.

35. On 31 March 2020 C left home to live with her boyfriend and his family with no notice to her parents or to professionals involved with the family. By then the father had moved back into the home after other relatives had left. On 2 April 2020 E, F and G were removed from the family home and placed with foster carers. They remain together with their foster carers. H remains with separate foster carers. C remains with her boyfriend's family under a s. 20 agreement. D remains at home with the parents.

36. The Local Authority's chronology shows that in the three years to 18 February 2020 (when H was admitted to hospital after rib fractures had been noted) the parents failed to take E to ten appointments with healthcare professionals. Six of those were in the first year, and two each in the second and third years. The school and GP records for E show that three EpiPens were given by the GP on 10 November 2017, two on 23 July 2018 and two on 20 June 2019. The school recorded that it had no EpiPens for E on 15 May 2018, that it required new EpiPens on 6 June 2019 and that it still had not received the EpiPens it required on 27 June 2019, 22 October 2019 and 12 November 2019. Whilst the GP only issued two EpiPens on 20 June 2019 the school wanted to have three, and the parents would doubtless have wanted at least one at home. The parents clearly had two new EpiPens from the GP on 6 June 2019 but did not provide the school with either of them until, it is agreed, January 2020. The school had one in-date EpiPen until August 2019 and then none until January 2020. There is no evidence that E has ever had to use an EpiPen. There is no evidence of communication from the parents to the school explaining why they could not supply the school with an in-date EpiPen or that she did not need one. In the same three year period to 18 February 2020, E's school noted that she did not have the required special footwear (known as Piedro boots) for her gait problems, on occasions, the last being on 26 October 2018 when E was seen in school by a physiotherapist who noted that E was awaiting an orthotics appointment. E's Sotos Syndrome causes her to have growth spurts and the mother has told the court that she had a tendency quickly to outgrow her specialist footwear.

37. E has also had continence problems and attended a continence clinic. Incontinence is a known symptom of Sotos Syndrome. Her school had noted

that she would at times smell of urine, and one occasion that her school bag smelled of faeces. F's school also noted that she and her belongings smelled of urine on at least one occasion. On a number of attendances at school, E and F have been noted to be unkempt or unclean and with dirty clothing. E was noted to have head lice in June 2019. F was noted to have head lice in November 2019. E, F and G were noted to have head lice in early December 2019. Head lice were seen in E's hair again on 16 December 2019. The mother repeatedly assured the girls' school that she was treating the headlice with special shampoo and combing, but clearly head lice remained a problem for E and F in particular, for an extended period, in late 2019.

38. The following tables show H's weight after the date when he would have been 40 weeks gestation, and the records of administration of Omeprazole prior to the diagnosis of his rib fractures.

Date	**Weight**	**Date**	**Weight**
10/12/19	2.79kg	24/1/20	3.34kg
17/12/19	2.80kg	25/1/20	3.34kg
23/12/19	2.98kg	30/1/20	3.32kg
30/12/19	3.05kg	7/2/20	3.18kg
7/1/20	3.2kg	13/2/20	3.16kg
13/1/20	3.14kg	17/2/20	3.10kg
16/1/20	3.2kg	19/2/20	3.07kg
20/1/20	3.27kg	21/2/20	3.16kg
21/1/20	3.30kg	2/3/20	3.46kg
23/1/20	3.34kg	13/4/20	3.85kg

Table 1: H's weight

Date	**Detail**	**Reference and Notes**
12.12.19	GP note – Plan: Mum says he has been advised Omeprazole by NICU nurses – no formal letter received but agreed to prescribe." 5mg/5mls oral suspension 5ml every day – 70 mls.	H 2377, H 2391 Note: the reference to 5mg/5ml may well be in error and should be 10mg/5ml

17.12.19	GG noted, "Has something prescribed for sickness but no chemist has it in stock."	H463 Note: this is presumed to be Omeprazole
23.12.19	FF noted "Remains on Gaviscon and Omeprazole."	H463
13.1.20	DD letter: medication Omeprazole 10mg once daily Gaviscon PRN "was/is on daily Omeprazole and Gaviscon with little difference so far."	H150
21.10.20	Paediatric assessment and care record: 12.00 H has reflux and on Gaviscon and Omeprazole.	H409
21.01.20	Omeprazole prescription: XX: Oral liquid dose 10mg oral every morning	H1133
24.01.20	Nursing note: "have ordered Omeprazole from pharmacy – parents have not brought in."	H410
27.01.20	Discharged summary – unchanged discharge medication: Omeprazole oral liquid. Dose 10mg oral every morning	H1133
30.01.20	Red Book – Omeprazole continues	I84/N465 Note: The date is wrongly entered in the Red Book as 30.10.20
13.02.20	Red Book -Omeprazole continues. GP prescribes 10mg/5mls oral suspension – takes 5mls (10 mg) once daily – 150 ml	I 90/ N466/ H2391

Table 2: Omeprazole Administration

The Law

39. The judgments of Baker J in *A Local authority and (1) Mother (2) Father (3) L & M (Children, by their Children's Guardian)* [2013] EWHC 1569 (Fam) and Peter Jackson J in *Re BR (Proof of Fact)* [2015] EWFC 41 are of considerable assistance in guiding the court's approach to a finding of fact hearing of this kind. I derive the following principles from those cases and the authorities that those judges reviewed:

a. The burden of proof lies on the Local Authority that brings the proceedings and identifies the findings they invite the court to make.

b. The standard of proof is the balance of probabilities, *Re B* [2008] UKHL 35. If the standard is met, the fact is proved. If it is not met, the fact is not proved. As Lord Hoffman observed in *Re B*:

> "If a legal rule requires facts to be proved, a judge must decide whether or not it happened. There is no room for a finding that it might have happened. The law operates a binary system in which the only values are nought and one."

c. There is no burden on a parent to come up with an alternative explanation and where an alternative explanation for an injury or course of conduct is offered, its rejection by the court does not establish the applicant's case.

d. The inherent probability or improbability of an event should be weighed when deciding whether, on balance, the event occurred is a matter to be taken account of when weighing the probabilities and deciding whether, on balance, the event occurred, but regard to inherent probabilities does not mean that where a serious allegation is in issue, the standard of proof required is higher.

e. Findings of fact must be based on evidence not suspicion or speculation - Lord Justice Munby in Re *A (A child) (Fact Finding Hearing: Speculation)* [2011] EWCA Civ. 12.

f. The court must take into account all the evidence and consider each piece of evidence in the context of all the other evidence. As Dame Elizabeth Butler-Sloss, President observed in *Re T* [2004] EWCA Civ. 558, [2004] 2 FLR 838 at paragraph 33:

> "Evidence cannot be evaluated and assessed in separate compartments. A judge in these difficult cases must have regard to the relevance of each piece of evidence to the other evidence and to 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."

g. The opinions of medical experts need to be considered in the context of all the other evidence. In *A County Council v KD & L* [2005] EWHC 144 Fam. at paragraphs 39 to 44, Mr Justice Charles observed:

> "It is important to remember that (1) the roles of the court and the expert are distinct and (2) 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."

Later in the same judgment, Mr Justice Charles added at paragraph 49:

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

h. The evidence of the parents and any other carers is of the utmost importance. They must have the fullest opportunity to take part in the hearing and the court must form a clear assessment of their credibility and reliability.

i. It is not uncommon for witnesses in these 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 various reasons, such as shame, misplaced loyalty, panic, fear, distress and the fact that the witness has lied about some matters does not mean that he or she has lied about everything: see *R v Lucas* [1981] QB 720. In the recent Court of Appeal judgment in A, B, and C (Children) [2021] EWCA 451, Macur LJ advised at [57],

> "I venture to suggest that it would be good practice when the tribunal is invited to proceed on the basis, or itself determines, that such a direction is called for, to seek Counsel's submissions to identify: (i) the deliberate lie(s) upon which they seek to rely; (ii) the significant issue to which it/they relate(s), and (iii) on what basis it can be determined that the only explanation for the lie(s) is guilt. The principles of the direction will remain the same, but they must be tailored to the facts and circumstances of the witness before the court."

In this case the Local Authority alleges that one or both parents have inflicted non-accidental rib fractures to H on more than one occasion,

together with bruising to his feet by the use of excessive force. Given that both parents flatly deny having caused harm to H, it is implicit in its case that one or both of the parents are lying to cover up what they have done. The Local Authority also says that they are lying about the other matters such as the alleged assault on C. The lies are designed to deflect from the actions they have committed as set out in the Local Authority's schedule.

j. As observed by Dame Elizabeth Butler-Sloss President in *Re U, Re B* [2004] EWCA Civ. 567 supra "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 may throw a light into corners that are at present dark". In *Re R (Care Proceedings: Causation)* [2011] EWHC 1715 Fam. Mr Justice Hedley, developed this point further at paragraph 19:

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

k. In *The Poppi M, Rhesa Shipping Company SA v Edmunds* [1985] 1 WLR 948, Lord Brandon considered an appeal from the first instance judgment of Bingham J upon the question of whether a ship had been lost due to "perils of the sea", a matter which the owners had to establish. The owners contended that the vessel had been lost due to a collision with a submarine. The underwriters contended that the loss was due to wear and tear. In his well-known judgment Lord Brandon stated as follows,

> "The passages which I have quoted from Bingham J.'s judgment amply support the observations about his approach to the case which I made earlier. These observations were to the effect that he regarded himself as compelled to make a choice between the shipowners' submarine theory on the one hand and underwriters' wear and tear theory on the other, and he failed to keep in mind that a third alternative, that the shipowners' had failed to discharge the burden of proof which lay on them, was open to him.
>
> As regards the shipowners' submarine theory, Bingham J. stated in terms that he regarded it as extremely improbable, a view with which I think it unlikely that any of your Lordships will quarrel. As regards underwriters' wear and tear theory, … he regarded the wear and tear theory not as impossible, but as

one in respect of which any mechanism by which it could have operated was in doubt.

My Lords, the late Sir Arthur Conan Doyle in his book "The Sign of Four", describes his hero, Mr. Sherlock Holmes, as saying to the latter's friend, Dr. Watson: "how often have I said to you that, when you have eliminated the impossible, whatever remains, however improbable, must be the truth?" It is, no doubt, on the basis of this well-known but unjudicial dictum that Bingham J. decided to accept the shipowners' submarine theory, even though he regarded it, for seven cogent reasons, as extremely improbable.

In my view there are three reasons why it is inappropriate to apply the dictum of Mr. Sherlock Holmes, to which I have just referred, to the process of fact-finding which a judge of first instance has to perform at the conclusion of a case of the kind here concerned.

The first reason is one which I have already sought to emphasise as being of great importance, namely, that the judge is not bound always to make a finding one way or the other with regard to the facts averred by the parties. He has open to him the third alternative of saying that the party on whom the burden of proof lies in relation to any averment made by him has failed to discharge that burden. No judge likes to decide cases on burden of proof if he can legitimately avoid having to do so.

There are cases, however, in which, owing to the unsatisfactory state of the evidence or otherwise, deciding on the burden of proof is the only just course for him to take.

The second reason is that the dictum can only apply when all relevant facts are known, so that all possible explanations, except a single extremely improbable one, can properly be eliminated. That state of affairs does not exist in the present case …

The third reason is that the legal concept of proof of a case on a balance of probabilities must be applied with common sense. It requires a judge of first instance, before he finds that a particular event occurred, to be satisfied on the evidence that it is more likely to have occurred than not. If such a judge concludes, on a whole series of cogent grounds, that the occurrence of an event is extremely improbable, a finding by him that it is nevertheless more likely to have occurred than not, does not accord with common sense. This is especially so when it is open to the judge to say simply that the evidence leaves him in doubt whether the event occurred or not, and

> that the party on whom the burden of proving that the event occurred lies has therefore failed to discharge such burden.
>
> In my opinion Bingham J. adopted an erroneous approach to this case by regarding himself as compelled to choose between two theories, both of which he regarded as extremely improbable, or one of which he regarded as extremely improbable and the other of which he regarded as virtually impossible. He should have borne in mind, and considered carefully in his judgment, the third alternative which was open to him, namely, that the evidence left him in doubt as to the cause of the aperture in the ship's hull, and that, in these circumstances, the shipowners had failed to discharge the burden of proof which was on them."

l. *Re SB (Children)* [2009] EWCA Civ 1048 confirms that the test for identifying a perpetrator of harm to a child is the balance of probabilities "nothing more and nothing less". There are many potential advantages in identifying the perpetrator of non-accidental injuries but the court should not "strain to find a perpetrator" and sometimes the task is impossible, *Re D (Care proceedings: Preliminary hearing)* [2009] 2 FLR 668. The court should identify the "pool" of potential perpetrators of significant harm applying the test of "real possibility" *North Yorkshire CC v SA* [2003] 2 FLR 849.

m. Findings of fact will form the basis for consideration of whether the threshold has been met. By s. 31(2) Children Act 1989:

> "A court may only make a care order or supervision order if it is satisfied (a) that the child concerned is suffering, or is likely to suffer, significant harm and (b) that the harm or likelihood of harm is attributable to (1) the care given to the child or likely to be given to him if the order were not made, not being what it would be reasonable to expect a parent to give to him or (2) the child being beyond parental control".

n. In *Re J (Children)* [2013] UKSC 9, at paragraph 47, Baroness Hale, said:

> "The threshold comes in two limbs and each has two distinct components. In the first limb the court must be satisfied (a) that the child is suffering significant harm and (b) that that harm is attributable to the care being given to him, not being what it would be reasonable to expect a parent to give to him. The second limb the court must be satisfied that (a) the child is likely to suffer significant harm and (b) that that likelihood is attributable to the care likely to be given to him if the order is not made, not being what it would be reasonable to expect a parent to give to him".

o. By s. 31(9), "harm" means "ill-treatment or the impairment of health or development including, for example, impairment suffered from seeing or hearing the ill-treatment of another" and "development" means "physical, intellectual, emotional, social or behavioural development."

p. By s. 31(10), “Where the question of whether harm suffered by a child is significant turns on the child’s health or development, his health or development shall be compared with that which could reasonably be expected of a similar child.”

q. The relevant date with respect to which the Court must be satisfied is the date on which the local authority initiated the procedure for protection under the Act. In this case the 18 February 2020, which was the date when the child protection medical was completed in respect of H and the date when family members commenced supervising the parents’ contact with the other children in their care. This date was agreed by the parties and the hearing was conducted on that basis.

r. The reference in s. 31(2) to a child being likely to suffer significant harm does not necessitate a finding that harm is probable. Lord Nicholls in *Re H (Minors) (Sexual Abuse: Standard of Proof*) [1996] AC 563, said, “In this context, Parliament cannot have been using likely in the sense of more likely than not …. The context shows that in s. 31(2)(a) likely is being used in the sense of a real possibility, a possibility that cannot sensibly be ignored having regard to the nature and gravity of the feared harm in the particular case.”

s. The test under s.31 (2) is an objective one. “If it were otherwise, and the 'care which it is reasonable to expect a parent to give' were to be judged by the standards of the parent with the characteristics of the particular parent in question, the protection afforded to children would be very limited indeed, if not entirely illusory. It would in effect then be limited to protection against the parent who was fully able to provide proper care but either chose not to do so or neglected through fault to do so. That is not the meaning of section 31(2). It is abundantly clear that a parent may unhappily fail to provide reasonable care even though he is doing his incompetent best" (per Hughes LJ in *Re D* [2010] EWCA Civ 1000).

Expert Evidence

40. The court has received expert evidence from the four witnesses referred to below. Following their substantive reports, they engaged in a discussion chaired by Mr Johal, solicitor for the Guardian, following an agenda to which all parties had contributed. A transcript of the discussion has been prepared and Mr Johal completed a schedule of agreement and disagreement, in tabular form, which the experts have confirmed by their signatures. The work done by Mr Johal has been extremely helpful to the court and has allowed the parties to focus their

cross-examination of the expert witnesses, saving court time. I record my thanks to Mr Johal for his exemplary work in this regard.

41. The core issues addressed by expert evidence are:

    a. The timing of the rib fractures.
    b. Whether H's ribs were weaker at the time of the fractures than would be expected for babies of the same age.
    c. The mechanism of injury to the ribs.
    d. The force required to cause the fractures.
    e. The date when bruising occurred and the cause of bruising.

Dr Halliday

42. Dr Halliday is a Consultant Paediatric Radiologist. She has viewed many radiological images of H. The ones that are most relevant are:

    a. An Upper GI Contrast Study (Barium Meal) dated 27 January 2020 [E33]. It was not the purpose of the study to examine the ribs but, in retrospect, Dr Halliday says that the imaging shows the presence of a fracture of the 10th rib. She advised the court that this fracture probably occurred at least one week earlier but in the experts' joint meeting she stressed the poor quality of the image and said that "if I had to be pushed I would say it probably occurred a bit before 27 January" but advised that her estimate was a week earlier. I note that the consultant radiologists at the Royal Derby Hospital, PP and JJ had also reviewed the images from 27 January 2020 and found that, in retrospect, they revealed right rib fractures.

    b. A skeletal survey on 19 February 2020 of which an image appears in her report at [E35]. She advised that this shows fractures of the right 8th, 9th and 10th ribs, and of the left 8th, 9th, 10th and 11th ribs. Bone density appears normal.

    c. A skeletal survey on 4 March 2020 of which an image appears in her report at [E37]. It shows no new fractures. All the fractures are healing but healing of the right fractures appears slightly more advanced than that on the left.

    d. A chest x-ray on 16 March 2020 [E39]. This shows that the right fractures "have now almost completely healed. Fracture lines on the left remain visible suggesting that these fractures occurred more recently than those on the right." I note that this was also the view of WW, Consultant Radiologist at Nottingham University Hospitals NHS Trust [H1058].

43. Radiological images since 16 March 2020 have shown no other fractures, and complete healing of all the rib fractures. The radiology shows no growth arrest lines. The key points from Dr Halliday's evidence are that:

    a. On the balance of probabilities, the right rib fractures all occurred on a single occasion, and the left rib fractures all occurred on a single occasion. The alignment of the fractures on each side and the healing process shown on successive images supports this conclusion.

    b. On the balance of probabilities, the right rib fractures and the left rib fractures occurred on separate dates. Whilst H's scoliosis might be a complicating factor in assessing healing rates, it remains more probable than not, in Dr Halliday's opinion, that there were two separate, injurious events.

    c. Dating fractures from radiological images is not a precise science but on the balance of probabilities the right rib fractures occurred between 8 and 20 January 2020 inclusive, and the left rib fractures occurred between 5 and 12 February 2020 inclusive. Originally Dr Halliday had given a window for the right rib fractures from 8 to 27 January 2020 but she changed her opinion at the experts' meeting. Dr Halliday went so far as saying that she could not even exclude the possibility that all the rib fractures occurred in the same event. That she could not discount that possibility, demonstrates that it remains a possibility, even if not a probability, that the right fractures could have been caused after 20 January 2020 and the left rib fractures before 5 February 2020.

    d. All the fractures were to the posterior ribs. It is very unusual for such fractures to be caused accidentally in a child of H's age when their ribs are like green sticks which bend but are hard to fracture. In cases where babies suffer rib fractures accidentally it is usual to find radiological evidence of reduced bone density. In H's case there is no such evidence, no osteopenia, and no metabolic osteopathy of prematurity.

    e. The fact that H has not sustained any further fractures makes it less likely that his injuries were due to an underlying propensity to fracture.

    f. The mechanism of injury was probably the same for all the fractured ribs, namely squeezing causing leverage of the rib over the spinous process of the adjacent vertebra with sufficient pressure to cause fracture. The fractures would not be caused by compression only to the front of the chest but by bimanual compression of the chest from both sides [N298]. She agreed with Dr Cartlidge that the direction of forces might be different from normal because of H's scoliosis but said that "we just don't know what difference [the scoliosis] makes." [N334].

    g. It is unlikely ("definitely not probable" [N335]) that the medical procedures H underwent would have caused his rib fractures. Dr

Halliday has reviewed the written witness evidence in relation to numerous procedures undergone by H but did not hear oral evidence and had not read evidence about the insertion of the NG tube on 21 January 2020 which post-dated her own oral evidence.

h. The fractures will not have been sustained due to a seizure.

i. It is probable that because of his prematurity and Tetrasomy 18, H had slightly reduced bone density compared with a term baby without his genetic condition.

j. Dr Halliday had never before come across the administration of Omeprazole or loss of growth as issues in infant fractures.

k. The fractures were caused by bimanual compression forces applied to the ribs which were in excess of normal handling [N325] or in excess even of firm handling [N321].

Professor Mughal

44. Professor Mughal is a Consultant in Paediatric Bone Diseases. He has produced five reports for the Court's assistance in this case as well as participating in the experts' discussion and signing the schedule summarising the views expressed at the discussion. In his oral evidence he was anxious to support any assertions he made with research evidence and to point out where such evidence was lacking. In summary his opinion evidence was that:

    a. There are three components to bone strength: bone mineral density, the shape and size of the bone, and micro-damage. He was unable to say that one of those components was generally more important to bone strength than the others.

    b. There is no radiological evidence that in January and February 2020 H had reduced bone mineral density. There is no biochemical evidence of reduced bone mineral density.

    c. There is no evidence that H suffered osteopenia, osteogenesis imperfecta or metabolic bone disease of prematurity.

    d. H did not have thin or abnormally shaped ribs. H's bone health index was assessed by Professor Mughal as being normal, but the technique used to assess bone health is new and not established for use in infants. The bone health index is an attempt to measure bone size and shape, only one of the components of bone strength.

e. There is no evidence of micro-damage to H's ribs, but such evidence can only be obtained by taking a sample for pathological examination.

f. No-one can know what H's bone mineral density was at the time when he sustained his rib fractures but there are various factors that could have resulted in reduced bone mineral density at the relevant time:

    i. Reduced absorption of nutrients. If H suffered weight loss that could have contributed to reduced absorption of nutrients necessary to build a healthy skeleton but "that is speculation." There is no evidence of any growth arrest lines on subsequent radiological images. Growth arrest lines would be a significant radiological feature showing that there had been a period of malnutrition, but radiology is not a sensitive method of gauging malnutrition.

    ii. Omeprazole. There is a known association between the use of Omeprazole and increased fracture risk in adults and there are paediatric studies emerging showing similar trends but there are no reported clinical trials so the emerging evidence should be treated with caution. H had not been administered Omeprazole for very long at the time he sustained his fractures. iii. Low muscle tone. If muscles are weak then there is less loading on the bones, and that could result in weaker bones.

    iv. Prematurity. Although there is no evidence of metabolic bone disease of prematurity, the fact that H was born at 31 weeks gestation would reduce the time in utero when nutrients would cross the placenta contributing to healthy bone development, and reduce the time when H was moving around in utero, creating loading on his bones, which also contributes to healthy bone development.

    v. Tetrasomy 18p. This might have resulted in some reduction in bone density but it cannot be quantified. The only research evidence of an association between Tetrasomy 18p and weaker bones and fractures is *Abnormal bone mineral content and density in people with Tetrasomy 18p*, Moreira and others, American Journal of Medical Genetics, 2019; 179A: 417-422. Professor Mughal said that if there had been more data in the paper he would have adjusted for the small size of the individuals analysed. The paper is of limited assistance in his opinion. Dr Saggar discussed the paper in a little more detail, as set out later in this judgment.

g. Professor Mughal was, with respect to him, inconsistent in his description of the likelihood that H had reduced bone mineral density in January and February 2020. At times in his written and oral evidence he

said that it was more probable than not that H had reduced bone density. At other times he said that he might have had reduced bone density. Along with the other three experts he agreed at the experts' meeting that it was "likely" that H had reduced bone density. When I pressed him, he said that it was difficult to put the case into a discrete category of either "probable" or "not probable".

h. Infants' bones are more elastic or pliable and can withstand more distortion. Even if H had a slight reduction in bone density it would still require considerable force to fracture his posterior ribs. The fractures would not have occurred through normal handling. However, "overzealous cuddling or overzealous swaddling by anyone" could have resulted in his rib fractures. When his use of these expressions was explored in cross-examination Professor Mughal said that H was reported to be an irritable baby and with such babies he has seen "vigorous force applied to the rib cage." He has clinical experience of babies with multiple rib fractures but apparently normal bone density who have never left hospital. Their fractures must have been caused unknowingly and inadvertently by such overzealous handling by healthcare professionals.

Dr Saggar

45. Dr Saggar is a Consultant in Clinical Genetics but prior to specialising in genetics he was a general practitioner for eight years and an academic for a further eight years. He has a wide experience of many genetic conditions, both common and rare. He has examined very many babies with genetic conditions. He confirmed that H has Tetrasomy 18p and a second chromosome 16p12.2 deletion. The latter has no implications for this case. Tetrasomy 18p is a very rare chromosomal disorder caused by the presence of isochromosome 18p which is a supernumerary marker. Most Tetrasomy 18p cases are de novo rather than from familial inheritance. It will affect between 1 in 140,000 and 1 in 180,000 babies. He has seen no more than two cases in 20 years of genetics practice. Clinically the condition is characterised by developmental delays, microcephaly, abnormalities in muscle tone, feeding problems, scoliosis, and dysmorphic features. Not all individuals have all of the characteristics. The Moreira paper (above) is the only published research of an association between Tetrasomy 18p and fractures. It is a recent paper and, although it has limitations, it is the best evidence available and Dr Saggar regarded it as helpful. The patients in the study were aged 14 months to 49 years and so H was younger than the youngest patient at the time he sustained his fractures. The paper does not provide any information about the age of the patients when they sustained fractures, nor of which bones were fractured.

46. Dr Saggar told the court that,

a. Tetrasomy 18p is associated with decreased bone mineral density as the Moreira paper shows. However, “we just don’t know” to what extent it would have affected H’s bone mineral density in January and February 2020.

b. He has dealt with very many babies with scoliosis and he would not have been concerned about low bone density or the risk of fracture due to H’s scoliosis.

c. There is no clinical evidence of reduced bone density but in his opinion there was probably some reduction in bone density from the combination of Tetrasomy 18p, growth failure, prematurity, and possibly Omeprazole. There could have been a “perfect storm” whereby a number of factors contributed to weaken the ribs, affecting the amount of force required to cause fractures.

d. There would have had to be more force than would have been expected from normal handling of a small baby in order to cause the rib fractures. He deferred to Dr Cartlidge on the extent of force required but told the court that in his opinion “rough handling or playful handling would not be expected to cause a rib fracture.” In H’s case he would be surprised if a rib fracture had been caused “without any obvious explanation of a memorable force.”

Dr Cartlidge

47. Dr Cartlidge is a Consultant Paediatrician. As well as providing a number of reports and contributing to the experts’ joint discussion and schedule of agreement and disagreement, he very helpfully produced a growth chart [N430].

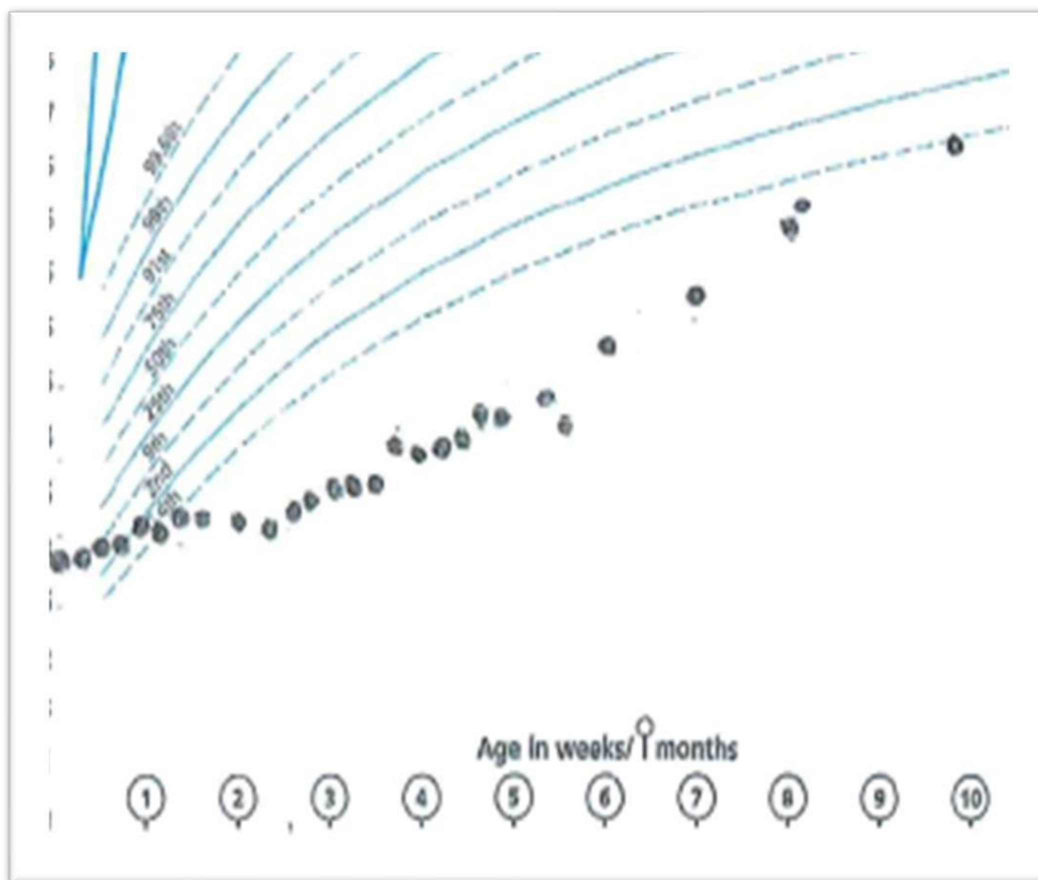

Fig. 1: H's Weight Growth Chart.[1]

This chart as seen in Fig. 1 plots H's weight after the date when he would have been 40 weeks gestation had he not been delivered at 31 weeks. His adjusted age was then zero. The ages shown on the x-axis are in months. The bottom three centile lines are the 0.4th, 2nd, and 9th centiles. A baby whose weight is at the 0.4th centile weighs less than 99.6% of babies of the same (corrected) age. In the period 8 to 20 January 2020, when Dr Halliday advises that the right rib fractures were probably suffered, H's corrected age was approximately 4.5 weeks to 6 weeks. The weight growth chart shows that his weight continued to increase over that period, but very slowly such that at one month he was on the 2nd percentile, and by six weeks he was just below the 0.4th percentile. On 21 January 2020 he was admitted to hospital for insertion of an NG tube for feeding, such was the concern about his failure to gain weight. Soon thereafter he began to lose weight. During the period 5 to 12 February 2020, when Dr Halliday advises that the left rib fractures were suffered, H was two months old and the chart shows that his weight was marginally lower than it had been at six weeks of age and was far below the 0.4th percentile. Dr Cartlidge told the court that the trajectory of H's weight was of growing concern from about the middle of January until he started to gain weight again by between two and three months. Even so he only reached the 0.4th percentile again at between nine and ten months of age (as corrected for prematurity).

[1] Age is corrected for prematurity, therefore the ages on the x-axis are the ages H would have been after 40 weeks gestation (notwithstanding H was born at 31 weeks). One month fell on 8 January 2020.

48. Dr Cartlidge addressed the factors that may have contributed to a reduction in bone mineral density. His evidence was as follows:

    a. Reduced absorption of nutrients. For so long as H was gaining weight Dr Cartlidge would not have been unduly concerned about failure to absorb nutrients sufficient to cause reduced bone density. By 20 January 2020 he would have been "getting concerned" and by the time H was two months old there was evidence of reduction in growth and it was more likely then that his bones were not able to absorb the nutrients required.

    b. Omeprazole. Having regard to the evidence provided to him at the hearing of the prescription history of Omeprazole, H had probably had Omeprazole daily since 17 December 2019, and so for barely a month by the end of the period identified for when the right rib fractures probably occurred. Frankly, although there is a known association between Omeprazole use and fractures, and research tends to show an increased risk if use is for at least 30 days, Dr Cartlidge could not say whether the risk of fractures for an infant would increase with longer use, or whether one month's use would be sufficient to cause reduced bone density. All he could say was that there is an association between Omeprazole use and fractures – research evidence indicates that it increases the occurrence of fractures by 10% to 20%.

    c. Low muscle tone. Dr Cartlidge discounted this as a risk factor for the rib fractures. Given that babies of H's age at the time are not particularly mobile, and the fact that loading on the ribs will occur due to breathing, Dr Cartlidge did not consider that H would have had reduced loading on the ribs compared with other babies of the same age.

    d. Prematurity. Dr Cartlidge was not impressed by the suggestion that prematurity would have contributed to H suffering reduced bone mineral density. He considered that H was provided with adequate nutrients in the period between birth and when he would have been a term baby. His growth in that period was satisfactory suggesting that he received good nutritional input during the period of prematurity.

    e. Tetrasomy 18p. Dr Cartlidge deferred to Dr Saggar and Professor Mughal but cautioned that evidence from the Moreira paper did not demonstrate that Tetrasomy 18p was necessarily a direct cause of bone weakness. It may be that those individuals with Tetrasomy 18p are on long term prescriptions of Omeprazole, and it is that which contributed to their bone weakness. Indeed, the authors of this American paper write that "The premature presentation and severity of low bone density observed in this study strengthen the likelihood of a multifactorial etiology with synergistic effect."

49. Whilst Dr Cartlidge had, along with the other three experts, advised at their joint meeting that it was "likely" that H had reduced bone density at the relevant time, he was reluctant in his oral evidence to say that it was more probable than not. He thought it more probable by February 2020 compared with early to mid January 2020. He told the court that on 8 January 2020 he would struggle to think that H's weight had any impact on bone strength. In the period 5 to 12 February, he would be more confident that the growth failure may have caused a reduction in bone density. He said that he was "not sure" if there would have been reduced bone density (due to poor growth) as of 20th January and he "could not answer with confidence" whether there was reduced bone density by that date. However, he did say that towards the end of Dr Halliday's window for the occurrence of the right rib fractures, i.e. by 20
January 2020, he would be "getting concerned". He said that from about mid to late January 2020 to the beginning to middle of February there would have been "creeping reduction" in bone density due to growth failure. He agreed that the likely mechanism of rib fracturing was bilateral compression through squeezing of the chest but said that H's scoliosis meant that the direction of forces might be "rather different" [N334]. At the beginning of the January window identified by Dr Halliday for the right fractures, any reduction in bone strength must have been "pretty minor" and the force needed to fracture the ribs would have been "unacceptably robust…. it must have been unreasonably robust handling." For the February window, when Dr Halliday has advised the left rib fractures occurred, reduced bone density was more likely, it is more likely the ribs would have been weakened compared with those of other babies of a similar age, and so the force needed to fracture them would be lower. It would still have required force in excess of normal handling. Dr Cartlidge could not draw a neat line on a day in January for when the degree of force needed to fracture H's ribs may have been robust rather than unacceptably robust but his evidence indicated to me that it was at or around mid to late January 2020.

50. Dr Cartlidge, who has extensive experience of handling and examining babies, considered that there was ample evidence that H was an irritable, frequently unsettled baby who cried a great deal. It was possible, in his opinion, that a person who roughly handled him whilst he was crying, and who fractured his ribs, might not realise that they had caused him harm. At the experts' meeting he was asked whether, if H had reduced bone mineral density, a person handling him might be unaware that they had caused injury to him. He responded:

> "I think the answer is yes, they could have been unaware of it. I think that if the child had normal bone density then this person would have known that they'd put an excessive amount of force on the chest but, given that I think we're agreed that there's reduced bone density, I think that somebody who was trying desperately to do something on this child may have squeezed the chest to what they thought was a reasonable amount but in this particular child caused fractures." [N312].

In fact, the consensus at the experts' meeting that it was likely that H had reduced bone density at the relevant times, has subsequently become less firm. Nevertheless, Dr Cartlidge's evidence remains highly pertinent, Professor Mughal expressly agreed with him at the experts' meeting, and Dr Halliday and Dr Saggar appeared to have deferred to Dr Cartlidge on this issue. Dr Halliday's evidence to the court remained that H probably had reduced bone density at the relevant times. From his oral evidence, I understood Dr Cartlidge to believe that the possibility of a handler causing H's rib fractures without realising they had caused him injury arose only from about mid to late January 2020. At an earlier time, he told the court, only unacceptably robust handling would have caused rib fractures. Accordingly, it would follow, the person responsible would, in the words of Dr Saggar, know this as a memorable event. However, after mid to late January 2020 the bones may well have been weaker. No-one knew at the time that H had reduced bone density or reduced bone strength. Dr Cartlidge told the court that if someone experienced in handling babies of that age, whether healthcare professional or parent, handled H in the same way as they had other babies without reduced bone density or strength, then "it might have been too much for H."

51. In relation to the bruising to H's back and feet noted at the time of the CPM, Dr Cartlidge was disadvantaged, as is the Court, by the absence of photographic evidence. There are no photographs of the bruising to the feet and the only photograph of the bruise to the back was taken three days after the medical and shows only a very faint discolouration, the size of its area not being capable of determination. Dr Cartlidge did not disagree that the spinal mark could be consistent with H having lain on his NG tube. By mid February H had lost weight and was falling well below even the 0.4th percentile for weight for his age. He would have had reduced subcutaneous fat, poor nutrition, and may have been more susceptible to bruising. The symmetrical nature of the bruising noted to his feet was consistent with his feet being held firmly on an occasion about 24 to 48 hours prior to the CPM. RR examined H on the morning of 17 February 2020 and did not note any bruising. The absence of bruising around the ribs did not indicate that rib fractures had not been caused by compression. H could have been wearing clothes at the time which would have protected the skin but not the bones, or the bruising might have disappeared by the time anyone examined H's skin over his ribs.

Evidence of C and D

52. C has produced a number of statements, gave evidence at an ABE Police interview, and gave oral evidence at the hearing. An intermediary gave advice as to the manner in which C was to give evidence. The advocates submitted their questions for C in writing to Ms Cook QC who prepared a consolidated list of questions for my approval. At the hearing the questions were put to C by Ms Cook QC alone. At her request, C was able to visit a court room on the day before she gave evidence, although her evidence was given remotely. She met me remotely before the hearing began on the morning when she gave evidence. She gave evidence from her solicitor's office in the presence of her Counsel. An

adult, J, was outside the room to give her support when we took breaks (every 30 minutes or so). The questions were phrased in simple language and Ms Cook QC adapted the questioning sensitively as the questioning progressed. The parents' camera was turned off, as were those of the other advocates, so that the only people C could see on her screen were me and Ms Cook QC.

53. C was a pleasant young woman who gave considered answers to the questions put. I detected no signs of exaggeration nor did I gain any impression that her evidence was motivated by anger or resentment towards her parents. I am sure that she tried to tell the truth. So far as her parents' behaviour towards H is concerned, C told the court that they were excited to have him home in November 2019 and that whenever she saw them with him they were very careful when handling him. They had talked to her about the need to handle H with care and, other than on one occasion when D handled him without the parents being present, witnessed by CC, the parents were always present when she or her siblings handled him. D, F and G only handled him on one or two occasions, under the supervision of the parents, with H lying next to them on a cushion with them on the sofa.

54. C spoke of her father losing his temper from time to time. She came home one day to find the television screen broken. Her mother told her that her father had thrown the door from a cat carrying basket at it. On another occasion C was in the hallway when the father threw shoes from the living room into the hallway. She did not know why he was doing that. Nevertheless, she described both her parents as kind and funny. Very sadly, her father now does not communicate with her and her mother's contact with her, by text alone, is relatively sparse. The problems have arisen from her parents' concerns about her relationship with K, J's son. The relationship started in June 2019. They were at the same school and they were part of a group of friends. In September
2019 D found a photograph on C's mobile phone showing C with a crudely drawn ejaculating penis and testicles superimposed. K had sent the image. D showed this to the parents. C said that it was intended as a joke and was shared with a few other friends in their WhatsApp group. She was neither threatened nor upset by it. Her parents, however, were sufficiently concerned to remove her mobile phone from her, restrict her access to her laptop, and to prohibit her from seeing K or any of her friends other than when at school. C said that she became isolated within the home. She spent most of her time in her room, albeit she continued with certain chores as described below. This continued until a date which C cannot remember in November 2019 when K attended, with a friend, at the family home. He knocked on the back door and C answered. The mother, she says, told K to leave, pulled C back inside and closed the door. C recalls that D took it upon herself to go outside and yell at K and his friends. She returned. The father had been in the living room but came into the kitchen. He was arguing with C but she cannot now recall what he was saying. She remembers that as he was standing next to her he raised his hand and with a closed fist hit her on the head. As she demonstrated this when giving evidence, the blow was to the side of her head, towards the back, over a hard part of the skull. She denied that he prodded her with a finger. However, she said that she

would not describe the blow as a punch. It hurt for a while but she did not suffer any marks or injury.

55. C explained that she did not tell the police about this incident when interviewed, nor did she tell anyone else about it until she spoke up in September 2020, because she did not want any "grief" from her parents. She put it to the back of her mind until she started thinking about it in September 2020 whereupon, a week later, she spoke to J, who advised her to inform CC.

56. After the incident in November 2019 her relationship with her parents did not change – she remained isolated within the home spending most of her time alone in her bedroom. Once H's fractures were diagnosed other adults came to the home to supervise the care of the children. The father left the family home for a while. When it became evident that that arrangement was ending and that E, F and G would be going to foster carers, C decided to leave. She chose a moment when the rest of the family were out of the house, so that they would not try to stop her. She went to stay with J and K, with whom she still lives. Her father has made no contact with her and has blocked her texts and messages. She has had two text exchanges with her mother in 2021. She said that she would like to restore her relationship with her parents, if they want to, in the future – she indicated that the appropriate time might be later in 2021.

57. D was due to give oral evidence and an intermediary's report was obtained, but ultimately her oral evidence was not required. Nevertheless, she has provided a number of statements and communications to the court and was interviewed by the police. I am grateful to D for the care that she has taken to assist the court. She has remained living with her mother and father even after the events of February 2020. She is the only child of the family who has remained in the care of her parents at home. She has been home schooled for long periods after the hate crimes directed at her father by former neighbours and associates led to her being bullied at school. She is now undertaking a course at a local college. She attended a number of medical appointments concerning H with the mother. She was present when H was examined in hospital on 21 January 2020, and in the waiting area of the MRI suite on 23 January 2020. She was an eyewitness to the alleged assault by the father on C in November 2019.

58. D speaks very positively of her parents and their care for all the children. Her evidence is uniformly supportive of their position in relation to all the issues on which she can give evidence. She corroborates the mother's evidence about hospital appointments and her father's evidence about the MRI scan. She corroborates her father's account of the alleged assault on C.

59. Both C and D are in very difficult, albeit very different, situations when giving evidence in this case. They have each approached the task of providing evidence with the seriousness it demanded. Both should know that I am satisfied that they have each done their best to assist me. They have taken differing positions in relation to the alleged assault on C, and I have reached a decision, as explained

later in this judgment, about the facts of that incident. I have found that I can rely on the account of one of them about that alleged assault, but it does not follow that I think the other is lying. C and D have each tried to give honest evidence and I am thankful to them both.

Evidence of the Parents

60. The mother gave oral evidence in a calm, measured and thoughtful manner. She answered questions directly and was not at all evasive. She was courteous throughout. Her affection for her children was clear to see. She told the court more than once that she did not enjoy confrontation and she was amiable but not unassertive in her evidence. She had what appeared to be a minor panic attack after being pressed on one point during cross-examination about her confusion concerning two visits to assess H at home, but otherwise she was composed.

61. The mother addressed in detail many of the particular allegations concerning the presentation of her younger daughters when at school, the failure to supply EpiPens to E's school, the failure to ensure E always had Piedro boots, the missed medical and dental appointments, and the allegations against the father of striking C, breaking the television set and having angry outbursts, and the parents' failure to see H very often when he was in the NICU. As a generality it was striking that the mother played down the seriousness of every single allegation. She did not accept the merit of any of them. The EpiPens were not really required because E had only suffered rashes in response to eating tuna fish, she had never had breathing difficulties, and the GP did not seem to think that EpiPens were necessary – it was the nursery and then the school that insisted. E would have such strong growth spurts and the supply times for Piedro boots were so long, that the boots would not last more than a month or two or were even too small on delivery. Any missed medical or dental appointments were the fault of travel problems, administrative problems on the part of the others or because all had agreed that the appointments were no longer necessary. The NICU nurses had not recorded all of her attendances to see H when he was an in-patient – she would pop in with some expressed milk and briefly see him: she could not go to see him more often because she had a cold. Some of these explanations had merit, but it was noticeable that the mother gave very little ground at all and did not acknowledge that she had some responsibility for these various concerns. She tended to gloss over what have been serious problems such as her husband's mental health, D's problems with schooling, C's relationship with her father which has been nonexistent for the last year, E's need for multiple therapies, and the stress of having to care for a very premature baby with a chromosomal disorder and significant feeding problems. Notwithstanding all the difficulties and problems over recent years, the mother seemed anxious to give the impression that all was well at home. Those professionals who reported otherwise had misinterpreted information or, in the case of AA, had never liked the family.

62. In contrast to her exoneration of the father and herself in relation to all the allegations, the mother has herself raised concerns about the way H was handled on several different occasions by a number of different healthcare professionals in January and February 2020. At one point in her written evidence, she appeared to allege that a doctor at the hospital had taken notes from H's file and put them in a wastepaper basket. In her oral evidence she clarified that she had only seen that the doctor had taken some notes from the file, and she saw some paper in the basket, but she could not say that he had disposed of any of H's notes. It was suggested to the mother by Ms Heaton QC for the Local Authority that by criticising these healthcare professionals she was attempting to deflect attention from what had happened at home when she and the father were caring for H. Her response was to explain that she, like everyone else, wanted to know what had caused H's injuries and that she had been anxious to give the court as much evidence as she could about what had happened to H during the period when he sustained his rib fractures and bruising. It would be unsurprising that a parent who genuinely had no idea of how their baby had suffered rib fractures, would try to think of every conceivable occasion when something untoward may have happened. On the other hand, the mother was unable to think of even one event at home, not involving healthcare professionals, that was worthy of mention. There was not even a single occasion she could recall when H was picked up late at night a little more roughly than normal, for example. She was unable to assist the court as to any incident, however trivial, that might have to be considered as a possible cause of H's injuries, and that occurred when he was in the care of his parents.

63. The mother denied that the father had slapped E across the face whilst she was having a panic attack. She denied having told AA that that had occurred. What she had told AA was that E had become distressed about a stray cat that C had brought into the house. It was about to attack E and the father had pushed E out of harm's way. She had not seen this happen but that is what the father told her, and she relayed that to AA who has misunderstood the account. She denied having told C, as C has reported to the court, that the father had broken the television in the family home when throwing something at it in anger. It was E who had flung the door to the cat carrier behind her in her eagerness to handle a new kitten, accidentally breaking the television screen in the process. She said that she had been in the kitchen in November 2019 when K had come to the house. She had closed the door to K, reaching past C to do so. D had gone outside to remonstrate with K for being there and had then returned inside. E was upset because she was scared of K and did not like him being outside the house with his friends. The father came into the kitchen and reproached C. He tapped her twice on the side of her head telling her to think about what she was doing to the family. He had not struck her with a closed fist as she alleged.

64. The mother told the court that she has had "conversation" by text, not orally, with C since she left home. She produced a schedule of text communications – there have been several but they covered a period of about one year. I sensed deep regret about C leaving home and the lack of direct contact between them

over the past 14 months or so, but also loyalty to the father, who has refused to communicate with C.

65. The father gave oral evidence that lasted one afternoon and the whole of the following morning. There was a marked contrast in his demeanour on each day. On the first, he was generally calm and open. He was emotional when discussing the onset of his mental health difficulties following L's stillbirth, but that reflected his loss and deep sadness. On the second day, whilst he remained courteous, he was defensive and angry. He made several claims that social workers and healthcare professionals had lied and even that there was a conspiracy against him and his family. His evidence revealed that he had fallen out or had come to distrust a long list of people: former neighbours, his family, his father-in -law, CC, AA, healthcare professionals who were lying about handling H, Dr Halliday who had changed her evidence about the timing of the fractures to cover for the hospital, E's school, his eldest daughter, C, her boyfriend, and his mother. His attitude was exemplified by his evidence in relation to the alleged assaults by him on E and C. His accounts differ from those relied upon by the Local Authority but he chose to say that AA, and C were deliberately lying to penalise him, rather than to accept that there could be a genuine misunderstanding or difference of perspective.

66. The first concerned AA's evidence that on a home visit on 6 July 2018 the mother had reported that the father had slapped E around the face because she was having a panic attack/meltdown. AA said that this was discussed with the mother who was informed that it was not appropriate. A note made of a report on 6 July 2018 by AA [C6] records that the mother "had disclosed slapping E's face as she was having a panic attack. HV was undertaken, no mark seen on E…" Clearly not much was made of this at the time because the father was not even spoken to. The mother told the court that C had brought a stray cat home that was very similar to the family cat. The father had been trying to get the cat out of the house. E was confused because she thought he was being mean to the family pet. The cat appeared to be about to pounce on E so the father pushed E away making contact with E's neck and the side of her face. He sustained bites and scratches from the cat and attended hospital. There is a hospital record at [J175] confirming that attendance and injuries from cat bites and scratches, which was on 5 June 2018. AA's visit on 6 July 2018 was the next visit to the family after 5 June 2018. The mother's case is that AA misunderstood what she was being told. The father, in contrast, told the court that AA had taken against the family from the outset, held a grudge against the parents and had done so against other families. It was because of that ill-will towards him, he suggested, that she had deliberately reported this incident in a false way to harm him.

67. The second concerned the allegation by C that the father had hit her on her head with a closed fist. The father's case, supported by the mother and D, is that he tapped C on her head with an outstretched finger whilst saying "Just think what you are doing to the family" or words to that effect. He was emphasising that she should think about her actions. C's account is set out above. She has not alleged any other assaults on her by her father. By the end of his oral evidence

the father's account was strikingly similar to C's account, differing only in that having raised a closed fist, the father said he had stuck out a finger and tapped C with it, whereas C said that the fist remained closed and he struck her with it using the side of his hand. The father said that C had "cowered" as he raised his fist, something with which Ms Sapstead for C confirmed that C agreed. The father might have said that C was mistaken about whether he struck her with the fist or finger, because she was standing to his side and would not have seen what struck her. However, he chose to allege that C had concocted her account out of malice, because she could not get her own way with him and the mother. She had been aided and abetted in this by J and by CC.

68. The father's evidence on those two incidents exemplified a general attitude that he demonstrated on the second day of his oral evidence, namely anger with many people who he feels are against him. The way in which he has cut off communication with C for over a year since she left home, appears to be his way of punishing her for, as he views it, letting him down and disturbing the safe haven that the family represents. Likewise, social workers or health visitors who are not supportive of him and the mother have ulterior motives and are not to be trusted. He will break off communication with them – he has done so with CC for example. He became outspoken about a "conspiracy" involving the healthcare professionals, social workers and even the expert witness Dr Halliday, who were gunning for him. In contrast, the mother and D, and to a lesser extent the younger girls, are still very much on his side. They are his support and he thinks the world of them.

69. I was conscious that the father suffers from diabetes (he says he is now diagnosed as a Type 1 diabetic although the most recent medical records available to me, from July 2020, continue to refer to him as having Type II diabetes). I am aware that he had some problems with feeling faint at the end of his first day of giving oral evidence, and he told the court that he sometimes becomes irritable and forgetful if his blood sugar levels are not properly controlled. Not only is he diabetic, but he has hypotension, a history of back pain, hip pain limiting his walking distance, and he has a suprapubic catheter due to urinary retention which he puts down to the drugs he has had in the past for his diabetes. Even so, we took breaks during his evidence and he assured me he was feeling fit to continue between those breaks. The clear impression I had was that his change in mood on the second day and his increasing expressions of anger were not connected with his physical problems but were features of his mental health condition. The father suffered a significant breakdown in October 2010 when he was seen in the emergency department with acute memory loss, having fits (which were probably pseudo-seizures), staring into space, and not speaking. It was evident that this was connected with the stillbirth of his daughter a year earlier [J234]. He was started on medication and was referred for psychiatric care. On 21 September 2011 his medical records note a diagnosis of post traumatic stress disorder with prominent anxiety and moderate depression and pseudodementia. When seen by YY, Consultant Psychiatrist on 29 August 2019 the diagnosis was depression with psychotic symptoms. YY wrote,

> "[The father] appears to be still severely depressed with low mood, lack of interest, poor motivation and anhedonia. His appetite is very poor and he said he has lost a couple of stone over a 3 month period. His sleep is severely disturbed by vivid dreams and frequent awakenings during the night, He finds it difficult to leave his house… He still reports having paranoid thoughts when outside and auditory hallucinations in the form of commanding voices asking him to harm or kill himself…. He says he has been feeling the same way for the last 2 years…"

70. The father's mental health has gradually improved but it is far from resolved. He continues to take medication for anxiety and to help him sleep. He is vulnerable to suffering setbacks when under pressure. He did so when subjected to hostility from neighbours in 2018. On 21 February 2020 days after H's CPM, and with his other children undergoing medical examinations for the purpose of safeguarding, an ambulance had to be called because the father had become non-communicative, acutely depressed and was hyperventilating. He was described by the paramedics to be "very distressed sat on bed sobbing repeating, "I didn't do anything" scratching his head." He told the court that he believed that his children were being examined to check whether he had sexually abused them, a belief that he appears to have retained. That belief may be connected with the groundless abuse from previous neighbours directed at the father but it may also demonstrate a degree of paranoia – a feature of his depression previously noted by a psychiatrist - because sexual abuse has never been suspected or hinted at in this case.

71. The father spoke movingly on the first day of his evidence about how the loss of L had been devastating to him. He had worked for the Post Office for 22 years, from the age of 19. He loved the job but after his breakdown he could no longer work. He felt ashamed for not being able to work. He would have been lost but for the love and support of the mother. He was saved by her and by his children. The mother described how the father saw the family as providing him with his safe place. The family is socially isolated and the father views the family as a cocoon, protecting him from an often hostile outside world. He distrusts those who threaten to disturb that cocoon.

72. Like the mother, the father was unable to assist the court as to any incident of robust or over-zealous handling of H whilst he was cared for at home, or any manner of handling H which in retrospect might have accounted for fractures to possibly weakened ribs. The father showed the court some of H's clothing from the relevant time. His knitted top was tiny – it was shorter than the length of the father's hand. He assured the court that at all times when he was in the care of the mother and father, H was handled "like glass".

73. The father denied breaking the screen of the television at the family home. He said E had done the damage accidentally when throwing to one side the door to a cat basket in her eagerness to be the first child to handle the new kitten. He denied throwing other objects around the house. He said that he had thrown shoes into the hallway when tidying the living room. He denied failing to engage

with social care workers. He said that those who found him uncommunicative had taken against him. He had tried to communicate with CC for example, but she had manifested her distaste for him as an unemployed man from the outset and would not talk to him.

Evidence from Healthcare Professionals

Neonatal Team and Health Visitors

74. The witnesses from whom I heard oral evidence were FF and EE, neonatal nurses, and AA and GG, health visitors. I also received written evidence from QQ, paediatric nursing student, and ZZ, a student health visitor.

75. FF has been a qualified nurse for over 30 years. Her role involves supporting families when a baby is discharged from the neonatal unit. She coordinates the care and support needed after the child goes home, working alongside health visitors. She was involved with H and his family from 18 November 2019 until the date of the CPM on 18 February 2020. She visited the family at home on four occasions and saw H on the NICU on four occasions. She attended the consultation with DD, Consultant Paediatrician, on 13 January 2020. In addition, she had telephone and text contact with the mother. She had no concerns at all about the way H was handled by DD. She saw H at home in the company of QQ, nursing student, on 13 February 2020. She told the court that QQ did not handle H. FF also confirmed that she did not carry equipment for measuring babies, but she would record H's weight on each visit. She said that on 18 February 2020 she was shown H's feet by a nurse but she did not see a bruise, only what she would describe as a "shadow" or a "discolouration" which she thought may have been from previous treatments. FF said that during her involvement with the family she had no concerns about either parent or their treatment of and affection for H. They would get in touch with her if they had any concerns and would respond when she tried to get in touch with them. They accepted advice and engaged with her throughout.

76. EE has been a children's nurse for nine years. She too works with the families of babies discharged from the neonatal unit. She visited H at the family home twice. She described her attendances at the family home on 7 and 10 February 2020 when she handled H with care because of his prematurity. She found the parents always to handle H appropriately. They appeared to her to be experienced parents who dealt with H in a loving manner.

77. AA worked with the family from May 2018 to December 2018, seeing the family about once every two months as part of the Early Help scheme. Her focus of concern was on E. The parents were emotionally warm towards E but her school had reported that they did not have EpiPens for her at school and that special footwear she needed was not being worn at school. In addition, E was not registered at a local GP. I have referred to the EpiPen and Piedro boots issues earlier in this judgment.

78. AA accepted that the family members were all registered with a GP closer to their previous home, but she was concerned that they would not visit the GP there because it was close to the area where they had experienced considerable neighbour hostility. In fact, although the GP records do show one or two attendances at the surgery in the period May to December 2018, for example G attended the GP surgery before going to A&E after a minor head injury on 21 August 2018, there were a large number of non-attendances. AA told the court of one visit to the family home when the mother was very slow to intervene when two of the young children were playing with black bin liners, one of them having a liner wrapped around their neck. She felt that generally the mother was overwhelmed having to care for the father as well as her five daughters, one of whom had Sotos Syndrome which demanded a great deal of intervention from healthcare professionals. She considered that there was a great deal of "disguised compliance" by which she meant that the mother would readily agree to take action, for example to obtain EpiPens to give to the school, but be slow to act. The family's housing was unsuitably small and a priority of the Early Help support had been to achieve a move to a larger home. AA considered that the parents were supported to move but did not complete the housing application promptly. A house move was eventually achieved in early 2019. Notwithstanding the difficulties, AA did accept that the parents engaged with her and there were some improvements in the state of the home during the few months she worked with them. AA said that the mother once told her that D hit E daily, something the mother denies having said and on which the Local Authority has not relied. AA said that the mother had told her on 6 July 2018 that the father had slapped E across her face when E was having a panic attack about a cat that had been brought into the house. She had not spoken to the father about this incident.

79. GG qualified as a health visitor in 1982. She worked with the family for several months before H was born. After his birth and discharge home she visited the family home on five occasions, on three of which she stripped and weighed H and saw that his skin was healthy. The mother was always open and co-operative with her and they had a good professional relationship. The father always participated in visits and would discuss things with her. ZZ accompanied her on a visit to the family home on 2 December 2019 but did not handle H. GG experienced for herself the difficulties H had with feeding, and she gave advice to the parents. She was watchful for any problems of attachment between H and the parents but recorded that she observed warmth and affection from both towards H. She had no anxieties about their parenting. Upon learning of the CPM and the discovery of injuries, her experience led her to consider that, as she put it, "the impact of physical aggression is likely to be higher given H's prematurity and condition which make him more vulnerable." GG saw the family during the relevant period as much as any other healthcare professional during the relevant period and she gained a good impression of how the parents were caring for H.

Radiology

80. I heard oral evidence from MM and AAA, Radiographers, BBB Superintendent Radiographer, JJ, Consultant Radiographer, and NN, Assistant Practitioner. I also heard from CCC, Nurse Practitioner, who was involved in an attempt to perform an MRI head scan on H on 23 January 2020. I also received written evidence from PP, Consultant Radiologist.

81. MM is a registered diagnostic radiographer who was in charge of the attempted MRI head scan of H on 23 January 2020. She confirmed the layout of the MRI suite by reference to photographs at [N491 to N501]. There is a reception area with a waiting area to the side of a reception desk. Double doors, which she said are kept closed lead through to a large L-shaped preparation area. Upon entry from reception there are three changing rooms to the right after which the room opens to the right hand side. The MRI scanner used for H is at the far end. The door to the scanner is thick and soundproof. There is a chair opposite that door within the preparation area, about 3 to 4 m from the scan room door. To the right of the chair are double doors to an anaesthetic area and then a door to the control room for the scanner. MM was asked to give an account of the attempt to scan H as early as 3 March 2020 after his rib fractures had been identified and the mother had raised concerns about his handling during the scan process. MM recalled that a nurse escort brought H to the preparation area with the mother. MM was assisted by NN. The Radiologist had been keen to obtain the scan and so MM spent quite a long time with H trying to obtain reasonable images. She understood (wrongly as it transpires) that he had not been sedated and that the so-called "feed and wrap" technique was to be used, meaning that the baby would be fed and then swaddled in order to calm him. He would have arrived at the MRI suite already swaddled. MM does not believe that she handled H, but the mother, the escort nurse, and possibly NN would have done so. The nurse wanted to observe H's breathing so his chest was laid bare. She recalls that H was very unsettled and was moving his arms and legs. The mother did not enter the MRI room, but sat on the chair in the preparation area opposite the door to the room. The nurse escort entered the scanner room and stayed there with H. Once he appeared to be settled MM left the scanner room and entered the control room. H was held in position using wedges and, due his continued movements, a sandbag was used over his pelvis. The weight within the bag is distributed to the outer edges so that only the thin covering material lies over the pelvis, with the weighted parts lying to each side of the baby. No weights were placed on his chest. H continued to wriggle and no clear images could be obtained. The attempt to perform the MRI scan was abandoned with a plan to perform one under general anaesthetic at a later date.

82. NN had little independent memory of the attempted MRI scan except that a sandbag had been used over the pelvis, a technique she had not seen used before. She said that the MRI scanner is noisy when in operation and that the door is in any event kept closed at such times. CCC remembered taking H down from the ward to the MRI suite. She had had some difficulty locating H and his mother at the time when sedation had been due to be given, so it was given late. He was transferred in a cot with the assistance of one porter. She remembered obtaining

a soother or dummy from one or other of H's parents when she was in the MRI suite. The parents are adamant that CCC was not the nurse who brought H to the MRI suite that day.

83. JJ has been a Consultant Radiologist since 2000 and specialises in paediatric radiology. She conducted the ultrasound scan on 21 January 2020 but had little independent memory of the investigation. The purpose of the scan was to view the muscle that allows the stomach to empty. There was no need to place the probe over the chest. After the fractures were discovered she and a colleague, PP, reviewed the images from the Barium Meal performed on 27 January 2020. She confirmed their view that in retrospect lower right rib fractures are discernible as "faint ill defined opacities projected over the ribs". In her written statement she wrote that the "feeling" was that it was "possible" that there were one or two fractures on the views. Asked whether there may have been an artefact rather than genuine fractures she said that "we have gone back over it again and again … I think [the fractures] probably are there. There is an element of doubt but I think they are there."

84. BBB has been a radiographer since 1987 and was a superintendent radiographer when she performed x-rays of H on 17 February 2020. She remembered the occasion because she had a long chat with the mother about some recent flooding. AAA, a much more junior radiographer came to BBB for assistance because she was finding it difficult to keep H still for an x-ray and he had a scoliosis. AAA had relied on the mother to keep H still whilst she took x-rays and she had tried to use a sandbag over H's pelvis but to no avail. BBB entered the room and introduced herself to the mother. She assisted by holding H's pelvis still. She did not hold H by the ankles or feet because that would not have helped keep his pelvis still, which is what was required for good images to be captured. BBB said that no-one had spoken to her about how H might have developed bruising to both feet as identified at the CPM the following day. AAA gave corroborative evidence and told the court that she had placed the sandbag over the upper thighs with the weighty parts lying to each side, not over the pelvis or legs, let alone the chest. To the best of her knowledge neither she nor BBB touched H's ankles or feet.

Examinations and Procedures at Hospital

85. The following healthcare professionals who were involved in examinations of H at hospital gave oral evidence: DD, Consultant Paediatrician, HH, Consultant Hand and Plastic Surgeon, II, Consultant Trauma and Orthopaedic Surgeon, TT, Paediatric Registrar, and DDD, Registered Nurse. Written evidence was received from KK, Consultant Paediatrician, RR, Consultant Clinical Geneticist, EEE, Paediatric Consultant, FFF, Paediatric Registrar, GGG, Consultant Paediatrician, HHH, Consultant Paediatrician, III, Paediatric Registrar, LL, Specialty Trainee in Paediatrics, JJJ, GP Trainee Doctor; from LLL, Staff, MMM, Lead Nurse for Paediatrics, NNN, Staff Nurse, PPP, Nursing Associate, all on duty when H was on Z Ward; and from

AAC, Healthcare Assistant in the Hand Clinic, QQQ, RRR, and SSS, Occupational Therapists, TTT, Clinical Specialist Physiotherapist, VVV, Safeguarding Lead, and WWW. Paediatric Dietician.

86. DD continues to be involved in H's management and care, as he has been from his time on the NICU. He examined him on 13 January 2020 in the company of FF and the mother. He denied the mother's allegation that he held H around the waist to examine him, saying that H would not have had sufficient control of his neck and head to allow him to do that. In her later oral evidence, the mother's description of how DD held H was not, in my view, materially different from his own. FF expressed no concerns about how DD handled H at this consultation. DD could not recall being told about H having suffered any seizures. He was concerned about his feeding and so proposed admission for fitting a nasogastric tube if there was no improvement. He heard H giving a high pitched cry. He did not note scoliosis. He had not previously dealt with a baby or child with Tetrasomy 18p and was reliant on the geneticists for advice as to that condition. He agreed that when he saw H on 13 January 2020 he was concerned about his growth failure.

87. HH examined H on 15 January 2020. Her focus was on his hands, but she asked II to attend because of concerns raised about H's spine. He examined H in her presence. He lifted H's clothes to look at his spine and considered it obvious that he had a scoliosis that required specialist referral. Neither Consultant recalls H being unduly distressed, although he may have cried as is common for babies being examined, and each told me that the consultation had been unremarkable. II explained that he showed the mother how to stretch H's legs, by holding his feet and flexing at the ankles. He denied that in performing those exercises pressure would be applied by the hands to the outer aspects of the feet (where bruising was noted on 18 February 2020).

88. H was admitted to the Z Ward on 21 January 2020 and an NG tube was inserted by nurse DDD. There is only a short note about this process but Dr Cartlidge raised some concern that the procedure of insertion might involve some restraint. DDD has been a nurse since 2005. She has no independent memory of the NG tube insertion on H but spoke to her usual practice and to the brief note that was made. She performs hundreds of NG insertions every year. The shortest available tube was used, it was a 6fNG tube, 50cm in length. A colleague would have been present to assist. They would swaddle the baby and then try to keep it still. DDD described how her colleague would place their forearms on either side of the baby's torso and cup the baby's lower face with their hands. DDD would gently place a finger on the stomach whilst measuring the length of tube that needed to be inserted. No pressure would be applied. The tube would be passed down to the correct number and then aspirate obtained by a syringe. The aspirate was tested for acidity using pH paper, double checked by the colleague. It was recorded that aspirate was achieved and the acidity was within normal limits. The process usually takes about one minute. There is no record of any difficulties encountered during the insertion on 21 January 2020. DDD said that if she had been concerned about her colleague being too heavy handed when

holding the baby, she would have stopped the procedure. She would have noted the incident and reported her colleague. Virtually all babies find the insertion distressing but if a baby becomes unusually distressed she would stop the insertion, comfort the baby and then re-attempt the insertion.

89. On 22 January 2020 during a ward round which appears to have involved some students, the Moro test (also known as the drop test or the startle test) was performed on H. There remains some uncertainty as to the identity of the doctor who demonstrated the test to the students, but the descriptions of this test within the witness evidence do not indicate that compression was applied to H's chest when performing it.

90. I heard oral evidence from TT, Paediatric Registrar, who conducted the CPM on 18 February 2020. Also present were the mother and UU, Social Worker. VV, Locum Consultant Paediatrician, attended for part of the medical. It has not been possible to trace VV. TT had three years prior experience in performing CPMs. The report is at [E2 to E6]. The examination began at 3pm. The mother had been asked to bring H to the hospital that morning and had been told by nurses on arrival about bruising to H's feet. DD had then told her that x-rays the day before had revealed two rib fractures. She was noted to have appeared shocked by this news. The CPM procedure was explained to the mother. When she was asked about how H had been before his admission on 18 February 2020, the mother mentioned that she and the father had noted a change two weeks earlier soon after the MRI scan (in fact the scan was over three weeks earlier, on 23 January 2020). The mother had noticed that on the evening after the scan, and for a few days thereafter, H had been uncomfortable when being sat up for winding. When asked about bruising to the feet, the mother stated that she had not noticed any bruising but that H had been restrained with force the previous day when having his x-ray. She said that a lady had held his feet and pulled them to straighten them and that H was crying. She had almost asked the lady to stop but was told that the restraint was normal for such procedures. The mother discussed H's feeding problems and vomiting.

91. On examination it was noted that H was not mobile or rolling. He had a nasogastric tube in situ. I have already noted the findings on examination and the explanations offered earlier in this judgment. Of importance to the examining team was that the mother only mentioned her account of H being handled by the mother of another child patient on Z Ward once VV attended and asked further questions. The recorded conclusions include the following:

> "H has unexplained rib fractures of this 8th, 9th and 10th ribs. The story given suggests that Mum attributes the bruises to restraint used for H's MRI during his last admission at the end of January."

In fact, the mother had raised the possibility that H had suffered some injury during the MRI scan which was on 23 January 2020. She attributed the bruising to the feet to the x-ray on 17 February 2020, and the back bruise to pressure

from the NG tube. The mother's response to the revelation of rib fractures was considered to be unsatisfactory:

> "Her story has some inconsistencies particularly with regard to the other lady on the ward during his last admission. She had also told other members of staff that H had had weights placed on him during the MRI scan and then had said during the CPM that she was not in the room at the time."

There is no dispute that the mother had been outside the MRI scan room at the time and had been told, accurately, that a sandbag had been used as a weight. The ultimate conclusion of the CPM report is as set out at paragraph 29 above. The first sentence of those conclusions might be read as a general statement about posterior rib fractures but other evidence shows that it was concluded that H's posterior rib fractures were non-accidental. In TT's hand-written notes she recorded, "on the balance of probability a non accidental injury is more likely than accidental injury." [H174].

92. TT told me that she had been "holding the bleep" and was requested to perform the CPM. She had not met the family before. TT stated that any bruising of a non-mobile baby is "very concerning" and "highly suggestive of a non-accidental injury in the absence of a history of accidental trauma". She said that she has seen a lot of children who had undergone x-rays and have never seen a child injured in this way (with bruising to the feet). She accepted that she had not made any subsequent enquiries of those who performed the x-rays on 17 February 2020 about how H had been handled on that occasion. Her concern about the mother's account about the mother of another child handling H was that the mother had not raised this with staff on the ward at the time. She said that in considering the explanations for injury given by the mother she took into account not only the story given but also the mother's demeanour.

93. I have noted the hand-written record that on the balance of probabilities a "non accidental injury is more likely than accidental injury." The conclusion that H had sustained non-accidental injuries appears to have been communicated to the social work team. CC, Social Worker, states at paragraph 12 of her witness statement of 23 February 2020 that "H's rib fractures are described by medics as being a non accidental injury." [C20]. She also wrote that,

> "When the Paediatrician attended the strategy meeting held on 21.02.2020 he was asked how the injury could have been caused to H. He explained that the injury had more than likely been caused by holding H with both hands, thumb at the front, fingers at the back and squeezing and shaking him at the same time."

In fact, TT (female) says that it was she who attended that strategy meeting "as the paediatrician who conducted [H's] CPM". So, it must have been she who gave the account recorded by CC. At paragraph 13 of her first statement CC also says,

> "Within the CP medical report Dr TT (Paediatrician) had had a discussion with the Geneticist to establish whether the fractures were related to his syndrome. The outcome was that "although some children with his medical condition do have low bone density and a tendency to fracture, this should not be the case in H." The radiologists have reported that H's bones appear to have normal bone density."

That quotation is not in the Medical Protection Report, nor does TT refer to it in her statement [C439]. However, at [H95] within H's medical records, TT recorded that she had spoken to a XXX, clinical geneticist who had spoken to RR who had discussed with DD and "stated that he did not feel that this child should fracture as a result of his genetic condition." Although the printed information that the mother recalls RR had given to her on 17 February 2020 about Tetrasomy 18p states that it is associated with the risk of fractures, RR states that he told DD that "I was not aware of bone fragility or fractures being a feature of either Tetrasomy 18p or 16p12.2." [C460]. As a result of the CPM and the information given at the strategy meeting on 21 February 2021, CC proceeded on the basis that,

> "H has suffered what has been described as a non accidental injury whilst in the care of his parents and as a result cannot return to their care until further assessments have been completed." [para. 17 C21].

Evidence from Social Workers

94. CC has been a Social Worker since September 2015 and has a Post Graduate degree in Social Work. She is a Registered Children's Social Worker within Derby City Council. She has made a number of statements for the court's assistance and gave oral evidence. She has worked with the family since February 2019 when the case was allocated to her to complete an assessment. The family had been receiving support from the Early Help scheme and, as a result of CC's assessment, each child became the subject of a Child in Need plan until, following the discovery of H's fractures, E, F, G and H became looked after children. H had been placed on a Child in Need plan before his birth. CC visited the family, as was her usual practice, about once every three weeks. Throughout her involvement CC found the mother to have been reasonably engaged, albeit this deteriorated somewhat after the youngest four children were placed with foster carers. The mother confided in CC in mid 2019 that she was struggling and felt overwhelmed. She was of course pregnant at the time, had five children to care for, one of whom has additional needs, and was caring for her husband.

95. CC was aware of the father's history of mental health problems in a general sense but she did not have access to his medical records and she did not receive any information about his mental health directly from the father because he

would not engage with her to the extent that he would leave the room upon her arrival. On one visit the father used D to relay messages back and forth to CC whilst he was in another part of the house. She called a halt to that. After H's fractures were identified and the father left the family home, the maternal grandfather moved in to provide supervision. He told CC that the children appeared to be frightened of provoking a reaction from their father. The mother and father have made it clear that the maternal grandfather had and still has a very poor relationship with the father and that his opinions about the father are unreliable.

96. CC noted that C had told her that when she was living at the family home she would often bathe the younger children. In the mornings she would make their breakfasts before getting her parents up. She would do the shopping with her father. Since leaving home she has had very little contact with the mother and none with the father. CC regretted this and advised that it was very upsetting to C.

97. On 9 January 2020 CC attended the home and was aware that D had been holding H without her parents being present. However, CC made it clear that, from what she saw, D handled H appropriately and the Local Authority does not allege that D had hurt H on any occasion. D was allocated a new social worker in May 2020 because she refused to speak to CC. When asked about AA's evidence that the mother had told her that D hit E daily, CC said that she had never observed anything inappropriate herself. The issue of D's education and home schooling had been referred to BB as Elective Home Education Family Visitor, who was to monitor the education taking place. D was home educated from March 2018 to January 2019 and then from May 2019 to the present.

98. CC said that E has been presumed to have an allergy to tuna fish after developing a rash having consumed some, but she has a forthcoming allergy test to confirm. CC was concerned that whilst E's school was asking the mother for EpiPens to be provided, the mother was slow to respond, such that there were weeks when E's school did not have an in-date EpiPen for her. Similarly, E had been noted by her school to be without her Piedro boots which she needed to support her lower limbs. The medical records confirmed a number of cancelled or missed medical appointments for E, and she was noted to present at school with dirty clothes, smelling of urine and with belongings smelling of urine. So did F. Both were noted to have head lice and greasy hair. CC said that these problems mattered for the children, having an impact on their self-esteem and their peer relationships.

99. CC told the court that since being placed with foster carers, E, F and G have had no issues with their presentation, head lice, or wetting themselves and smelling of urine. G had had some speech problems but those have improved markedly so that her speech is now fully comprehensible. I have received written evidence from foster carers which is mostly about things said by E which are not relevant to the findings I am invited to make. Nevertheless, the evidence is that the three youngest girls have been fit and well since their placement began. The parents

continue to have contact with them and with H, albeit much of the contact during the lockdown period of the pandemic has been by video.

100. When questioned about the support given to the parents during the period when the Child in Need plans were in place, the clear impression given to the court was that this was primarily led by the parents. If the parents did not identify or agree a need for support, then none would be given. Accordingly, the provision of EpiPens, for example, remained the entire responsibility of the parents. If the parents did not disclose a problem with finances, then no financial support would be given. When asked by Ms Burnell QC for the father what practical and signposting support she had given to the family when the Child in Need plans were put in place, CC said that she had put the family in touch with BB for advice but that in other respects, “they did not want support regarding parenting.”

101. UU is a registered Social Worker who met the family for the first and only time on 18 February 2020. She was present at the CPM and she visited the family home that evening. Although present at the medical she did not see the bruises and she did not enter into any discussions with the mother about the alleged inconsistencies in her accounts to the doctors. She confirmed that the mother was very distressed. She took responsibility for explaining to the mother that the view taken was that the injuries were non-accidental, because no-one else had done so. She has experience of previous, similar medicals, and told the court that she was not surprised by the mother being inconsistent because in her experience in such a situation “parents are often overwhelmed by the news they receive and try to process the information they are given and think of circumstances in which the injuries may have occurred.” On attending at the family home, she found that the parents were very open and, she thought, honest with her considering they had not previously met her. She spoke to the children. She saw nothing to cause her concern. The children sought out the parents, the mother in particular, for emotional warmth and the parents reciprocated. However, she did not speak to each child separately.

102. YYY is a Social Worker and member of the Children’s Permanence Team within Derby City Council’s Peoples’ Services. She has worked for the Local Authority for over twenty years. She made Child in Need visits to the family home on 19 February, 24 February, 4 March, and 12 March 2020. Two of the visits were unannounced. She did not speak to the children separately but saw them in the presence of each other and their parents. H was in hospital during this period. C left home shortly after her last visit but she had not been aware that anything like that was about to happen. She had no concerns about the family. The home was clean and tidy and the girls’ presentation caused her no concerns. She saw affection between the parents when she visited in March (after the father had returned to the home).

103. ZZZ told the court that between 17 November 2020 and 21 January 2021 she had fifteen sessions with the family in preparation of her parenting assessment, and three further sessions for a follow up assessment. She got to

know the family very well and developed a good relationship with both parents. They were honest and open with her, she observed a loving relationship between the parents, good parenting on contact with the children, and positive sibling relationships. The home was clean and tidy. She reached positive conclusions in all aspects of her parenting assessment, which was completed on 28 January 2021. Regrettably ZZZ spoke of "all the children" whilst excluding C. She explained that she had not been asked to carry out an assessment in relation to the parenting of C and that she had not spoken with C at any point. This seems to me to be an omission not least because a full parenting assessment surely requires some consideration of the experience of parenting of the oldest child in the family. She knew nothing of
the circumstances of C leaving the family home or C's allegation of assault by the father. It was similarly surprising that ZZZ was not aware of concerns about matters other than H's fractures, such as poor attendance at school or non-attendances at a number of medical appointments. It is difficult to make an adequate assessment of parenting capacity in this case without taking into account those aspects of the case. Nevertheless, I take into account the positive assessment made.

Submissions

104. I received written and oral submissions from the parties. For the Local Authority it was submitted that the expert evidence was that H's weight was only becoming a concern from about the 2 to 2.5 months mark on the growth chart and so his bone mineral density was unlikely to have been affected by poor growth until after the end of the first fracture window. The healthcare professionals had all given reliable evidence as to their handling of H and there is no evidence of any occasion when H could have sustained rib fractures when being handled by them. The mother had given incredible evidence about healthcarers including an allegation that a doctor had put some of H's records in the wastepaper basket. She had been inconsistent and not credible. The father had responded to difficult questions by attacking healthcare and other professionals with unsubstantiated, serious allegations. He was exposed as a man with a short temper. The mother had not reported H's alleged seizure on 13 January 2020 to FF or DD, and

> "an event during that night, when the mother was tired and frustrated as a result of the feeding difficulties and as a consequence of which in a momentary loss of control she squeezed H's ribs would explain the right posterior rib fractures…. The feeding issues evidently continued into the next fracture window according to the mother's reports to GG. Once again she could have, due to the same frustration, tiredness and momentary loss of control, caused the left posterior rib fractures…. The feeding problems would have been the same for the father. Given that it is known he … can lose his temper and snap, it is possible that he has become frustrated with the feeding

> process and reacted by squeezing his chest thereby causing the fractures."

The Local Authority submits that the court is unlikely to be able to identify as between the mother and the father who is the perpetrator of H's injuries.

105. For the mother and the father, it is submitted that there are many "unknowns" in this case including the timing of the fractures, the effect of Tetrasomy 18p, a very rare condition, the extent of reduced bone mineral density, when such reduced density occurred, the degree of force required to have caused H's fractures, and the effect of his scoliosis on the mechanism required to cause his fractures. The parents were caring and experienced. If robust handling was sufficient to cause H's injuries then their failure to provide an explanation for the fractures when in their care is not surprising.
The fact that H sustained rib fractures on two separate occasions tends to show that he probably did have a vulnerability to fracture. The Local Authority has failed to prove its case that one or both of the parents caused H's rib fractures non-accidentally. The Local Authority would not have issued these proceedings on the basis of the other matters alleged had it not been for the rib fractures.

106. I received helpful submissions on behalf of C and D directed to their involvement in the case. Ms Cook QC and Mr Johal for the Guardian adopted a neutral stance in relation to the findings of fact whilst pointing out that

> "it is beyond doubt that there were stresses in this busy household. However, the witnesses who saw them with H and their care of him, said it was nothing but very good … Some of the evidence of the parents was slightly incongruent, for example the father asserting that the Health visitor had made some things up. They have clearly got things wrong in trying to remember or establish how H could have been injured. Great care will be needed to decide if they are genuinely mistaken or whether they are deliberately trying to mislead the court and deflect from themselves. However, they find themselves in what must be a terrifying position and have been separated from the children for a very long time. A lot is at stake for them."

Allegations of the Father's Assaults on C and E, and of Parental Neglect

107. I turn now to the evaluation of the evidence and the findings that I make. The Local Authority makes the allegations and has the burden of proving them. The court applies the civil standard of proof, on the balance of probabilities. The evidence in relation to all the allegations is, I accept, interrelated. It is not suggested that if the father is found to have struck C he is more likely to have caused H's fractured ribs, or that if one or other parent deliberately fractured H's ribs they were more likely to have neglected their daughters' nits, but credibility is an issue that should be considered in the light of all the evidence. Furthermore, the parents' characters and family dynamics provide the context within which the allegations need to be considered. Whilst all the evidence has

to be considered, the court has to start somewhere, and it is useful to start by considering the allegations of assault made against the father, and those of neglect made against both parents. I shall then consider the Child Protection Medical, the allegations regarding H's bruises, and finally the evidence and findings in relation to H's rib fractures.

108. The evidence establishes that E's school wished to have three in-date EpiPens available for E at all times, whereas E's GP only provided 2 EpiPens for E in July 2018, and 2 in June 2019. Providing both to the school would have meant that no EpiPen was available when E was out of school. The result was that for two months or so in 2018, and for about four to five months before January 2020, E's school did not have any in-date EpiPens for her. She did not suffer any harm because she did not suffer any allergic reactions. Indeed, I have no evidence that she has ever needed to use an EpiPen, nor that any allergy has been confirmed. No assistance appears to have been given to the family to obtain EpiPens and there is reference in the documents to a national shortage in 2019.

109. The evidence also establishes that E was without Piedro boots for a period of some weeks in 2018, but that the mother was actively seeking boots for her. I could not find any references in the school's CPOMS (Child Protection Online Management System) records in 2019 and 2020 but CC says that the school raised the issue at a network meeting which must have been after her first involvement with the family in February 2019. The father also said during his oral evidence that E had been without Piedro boots for a year before she was put into foster care whereupon, he complained, suddenly they were made available to her. This does indicate that E was without Piedro boots for a substantial period of time. I can find no evidence that the periods without Piedro boots have been detrimental to E's physical health or development.

110. There is evidence of the three youngest girls having nits and an unkept appearance on occasions at school. E also had a continence problem which I understand to be associated with her Sotos Syndrome, and which may well have resulted in her smelling of urine on occasion when attending school. She shared a bedroom with F and that may account for why F was noted to have smelled of urine too. There were domestic animals in the house and they may have resulted in urine contaminating the girls' belongings. The parents took a long time to get on top of the girls' nit problem in late 2019. I accept these problems existed and that the school has accurately recorded them. They were not constant and there is no evidence that they have been detrimental to the girls' emotional or physical development or wellbeing.

111. Careful analysis of the chronology of events shows that there were some sixteen missed medical appointments for the younger three girls in the three years to February 2020. There were also many attendances. In addition, there is evidence of delay in dealing with E's dental problems (which may have been due to her Sotos Syndrome) which may have been due to missed dental appointments.

112. The father appears not to have played an active role in dealing with practical matters such as medical appointments for the children, EpiPens, Piedro boots, and the like. This was because he was quite badly affected by his mental health problems. He is generally not very good at dealing with people outside the immediate family. The evidence shows that the mother was not very efficient at dealing with these matters but she had a great deal to contend with – five daughters, one of whom had significant additional needs, her pregnancy in 2019 and then a premature baby born by Caesarean section at 31 weeks with Tetrasomy 18p and feeding difficulties who was in the NICU for several weeks, her own anxiety, significant neighbour hostility, moving house, and her husband's own mental health issues. E required considerable input from therapists of various kinds and there were a large number of appointments to juggle. D was having problems with bullying at school and was then home-schooled. The evidence clearly shows that the house was often untidy, the younger girls sometimes unkempt, and that the household was hectic and disorganised. However, the Local Authority was involved and in regular contact with the family, and it was content to manage the situation under Child in Need plans until H's fractures were identified.

113. Notwithstanding these difficulties, the balance of the evidence suggests that there was warm affection between the parents, and between the parents and the children. It is very unfortunate that the father decided that he would not engage with CC and that his engagement with AA was limited, because virtually all other professionals including social workers, neonatal nurses and health visitors, have spoken of good engagement by the parents, openness in accepting advice and discussing problems, and affection within the family. Generally, those who worked with the family after H was discharged home from the NICU in November 2019 had no concerns about how he and the other children were being cared for by the parents.

114. My findings are that E had missed medical appointments including with the Community Paediatrician and the Orthopaedic team. I am not satisfied on the balance of probabilities that she missed dental appointments. Further, I find that E was without Piedro boots which she needed to assist her gait and balance for long periods in 2018 and 2019. I find that despite its repeated requests E's school was without an in-date EpiPen between August 2019 and January 2020 but I am not satisfied that the absence of an EpiPen at school gave rise to a risk that she would go into anaphylactic shock. I am satisfied that E and F have presented at school with head lice on numerous occasions, that F's bag smelled of urine on one occasion on attendance at school, and that she and E smelled of urine and were unkept and unclean, with dirty clothes on attendance at school on several occasions. I am also satisfied that the father has failed to engage with social care, in particular he has been almost wholly uncommunicative with the allocated social worker, CC.

115. Against this background there are two specific allegations of assault by the father on children – slapping E's face in 2018 and hitting C with a closed

fist in November 2019 – and allegations that he has thrown objects and broken the television set in anger.

116. There was very little evidence to support the allegation that the children have been exposed to domestic abuse by the father shouting and throwing objects. The one specific incident witnessed by C, involving the father throwing shoes into the hallway, is consistent, as he told the court, with him clearing shoes from the living area. I accept that the father has raised his voice at the children at times which is unsurprising in a busy household. I dismiss the allegation that he has perpetrated domestic abuse by shouting and throwing objects. The evidence that the father broke the television in the living room by throwing an object against it is hearsay – it comes from C who says she was told by the mother that that is what had happened. The mother and father say that E threw a cat basket door behind her in her eagerness to handle a newly arrived kitten, and accidentally broke the television screen. There is no other evidence of the father breaking things in anger. C may well have misunderstood what she had been told. I accept the parents' evidence and dismiss the allegation that the father broke the television in anger.

117. The allegation that the father slapped E is also based on what the mother is said to have told AA. The parents say that AA misunderstood the account given by the mother and that the father had pushed E away to protect her from a stray cat. C confirmed that she and E had brought a stray cat back to the house and once the cat was inside it "freaked out" and E began to panic. She did not see her father hit E. There is therefore no evidence from anyone who witnessed this alleged assault, and no contemporaneous corroborative evidence. The medical records show that the father sustained injuries from a stray cat in June 2018. Having considered all the evidence I am not persuaded that on the balance of probabilities the father slapped E across the face in the summer of 2018. I accept his evidence that he pushed E away to protect her from the cat.

118. There is much in common between C's evidence as to the alleged assault by the father on her in November 2019 and the evidence of the mother, father and D about the same incident. I have described their evidence above. The father accepted in his oral evidence that he had raised his arm with a closed fist and that C had cowered but says that he then stretched out his index finger and tapped C twice on the head to emphasise the need for her to think about the consequences of her actions. He had not mentioned raising a fist or C cowering in his written evidence. The mother and D corroborated his written account but neither referred to his new evidence of raising a fist or of C cowering. I found C to be a little immature for her age, but a careful and honest witness. She impressed me with her lack of resentment towards her parents even though they have had so little communication with her. She did not elaborate or exaggerate. She volunteered that the father had not punched her and that she was not in a great deal of pain. I understand why she did not raise the incident with other adults for a number of months until she was more settled in her new home in September 2020. The father was clearly angry with C at the time of this incident. C was adamant that what she felt was his closed fist strike her on the side of her

head, not a finger tapping her. I find that she is telling the court the truth and that the father did strike her twice with a closed fist. He did not tap her with a finger. He knows he did not do so. He has not been entirely consistent in his evidence about this incident.

119. I cannot accept the evidence of the mother and D on this particular issue. The situation at the time was very fraught. D was shouting at C, the father was remonstrating at C, and the mother eventually told everyone to be quiet. I do not believe that mother or D were watching carefully as the father suddenly raised his hand and then made contact with C's head. However, I am sure that the father will have talked about this incident many times with both the mother and D. They are both very loyal to him and want to believe his version of events. They were upset with C's conduct. They side with the father. I do not believe that D has lied to the court – in my judgment she has come to believe that the father just tapped C with his finger. As for the mother, in my view she did not see how the father struck C but has decided, consciously, to support the father on this issue. Both she and D corroborated a written account that the father then changed at court. I reject their evidence about how the father hit C. On the balance of probabilities, I find that the father hit C twice to the head with a closed fist, using the side of his hand, not as a punch, in the kitchen of the family home in November 2019. He did so as a gesture of "knocking" sense into C's head, as he saw it. He did not cause her any physical injury beyond short-lived pain.

The Child Protection Medical

120. The mother learned about rib fractures and bruising for the first time on 18 February 2020. A short time later she was being asked to give explanations of the injuries at the CPM. The evidence of how a parent responds when informed of serious injuries to their baby is of importance. It was noted that "Mum denied harming her child … and seemed genuinely upset…" but the view taken was that her account was inconsistent. There can be no criticism of the conclusion reached by TT and VV that H's right rib fractures (the left rib fractures had not yet been diagnosed) were unexplained. Furthermore, the bruising was of obvious concern given that H was an immobile four month old baby. However, I would make the following observations about the CPM process and conclusions:

a It is not ideal that the consultant, VV, only arrived part way through the medical. Criticism is made of the mother for giving inconsistent accounts on the basis that she raised matters for the first time when speaking to VV, but he had not been present until after the examination and may well have asked different questions in a different way from TT.

b If the mother genuinely did not know how the fractures had been caused then, given the limited time she had known that fractures had been discovered, it is unsurprising that she began to think of occasions that had caused her concern or when the fractures might have been caused

and that she might raise matters about which she had not previously complained, such as the unknown mother of another child picking up H on 26 January 2020. I respect the fact that TT was present with the mother at the time, whereas I only have the record of their discussion, but the mother's responses to the news of the fractures do not seem to me to be obviously inconsistent.

c No photographs of the bruising were taken at the examination on 18 February 2020. This has been a hinderance to the expert witnesses and to the court when assessing the nature, cause, and ageing of the bruising.

d The mother gave a possible explanation of bruising to H's feet having been caused during the x-ray the previous day, but at the time no-one spoke to the healthcare professionals who performed the x-rays to determine whether the explanation was plausible.

e When the CPM was performed, H was known to be significantly underweight - well below the 0.4th centile for his age corrected for prematurity - but the potential for H being malnourished, having very little sub-cutaneous fat, and being more prone to bruising as a consequence, does not appear to have been considered. Clearly, the benefit of expertise now before the court was not available at the time, but H's weight was known to be extremely low and some note of caution might have been recorded about the need to consider his weight and nutritional status when assessing the possible causes of bruising.

f A detailed document about Tetrasomy 18p which the mother recalls was provided to her only the day before and which appears in H's medical records noted, "There has been some evidence suggesting people (including children) with Tetrasomy 18p have decreased bone mineral density, meaning that they may be more susceptible to bone fractures." [H290]. The mother may be wrong about the information sheet that was given to her on that date, and other information sheets within the records do not link Tetrasomy 18p to fractures. It appears that RR informed TT, via another geneticist, XXX, that "he did not feel that this child should fracture as a result of his genetic condition." Given that H was known to have a very rare condition, it would have been preferable to have had direct and properly considered input from RR about any possible susceptibility to bone fractures. There may have been no further investigations to be performed – Professor Mughal has advised the court that Dual-energy x-ray absorptiometry (DXA) is available at major teaching hospitals but its suitability for use in H's case at the time is far from clear – but again a note of caution might have been recorded that formal advice should be sought about whether H's ribs might have been more susceptible to fracture due to his very rare chromosomal condition. No such caution was expressed.

g When the outcome of the CPM was communicated to CC and the social care team, they were given the firm impression that the fractures had been non-accidental. Indeed, a description of H having been squeezed and shaken was apparently given to them. No-one has suggested since then that there was evidence that H had been shaken. It does not appear that any doubts or caveats were communicated to the social care team. For the reasons set out above, there were reasons to express a degree of caution.

121. I appreciate that those conducting the CPM had no prior involvement with H or the family, were called to perform the assessment at short notice, and did not have the benefit of expert research and opinion. The unexplained rib fractures and the appearance of bruises in such a young baby were of significant concern. Nevertheless, for the reasons given, a firm view was adopted that H had suffered non-accidental injury whereas there were reasons to exercise more caution.

Evaluation of Evidence and Findings: Bruising

122. As already noted, no photographs were taken of the bruising to H's feet. The bruises were noted to be symmetrical which is strongly suggestive of them having been caused simultaneously by someone holding his feet, one in each hand. There was also a red mark on the left foot which would be consistent with the same mechanism. FF saw H's feet but she considered the marks to be discolouration rather than bruises. Dr Cartlidge advised that the most he could say was that they had probably been caused in the previous 48 hours before the afternoon of 18 February when they were recorded at the CPM. The previous day H had undergone an x-ray and BBB had been called to assist by AAA because of difficulties keeping H still. Whilst both radiographers and the mother denied holding H's feet to keep him still it is perfectly possible that one of them may have done so. All accounts are that H was a wriggly baby who was liable to raise his legs in the air when lying on his back. This had caused particular difficulty during the attempted MRI scan on 23 January 2020. It would have been necessary to keep his legs out of the way of the x-ray of his spine. When the bruises were caused, H was significantly underweight. Table 1 above shows that he weighed less on 17 February 2020 than he had done a month earlier and only 0.3 kgs more than he had done two months earlier. Fig 1 shows that he was falling well below the 0.4^{th} centile for weight. Dr Cartlidge told the court that by on or around 17 February 2020 H would have had much less sub-cutaneous fat than other babies of the same age. His nutritional status would probably have been depleted. Therefore, he could have been more prone to suffering bruising.

123. Having regard to all the evidence, I find that on the balance of probabilities H's legs were held straight during the x-ray process on 17 February 2020, by his feet being grasped, and that given his low weight and likely

nutritional status at the time, marks were caused to his feet which were found and recorded at the CPM on 18 February 2020. I am satisfied that the marks to his feet was caused inadvertently during the x-ray on 17 February 2020. It could have been either the mother or one of the radiographers who held his feet to try to allow for x-ray images of his spine to be taken. I do not criticise any of them. H was vulnerable to bruising and one of the marks was described as a "faint blue bruise". FF did not think they were bruises at all when she saw them. Nor did the mother.

124. The yellow/green bruise to H's back was not photographed on 18 February 2020 but was photographed two or three days later. It is difficult to discern bruising on the photograph provided but I accept that it was present at the CPM. It was thought then to be consistent with H having lain on the plastic port affixed to the end of his NG tube. The mother told the court that the tube had been cut short as a result. Although evidence was given that the shortest NG tube available had been used, the medical records suggest otherwise. I accept DDD's evidence that on 21 January 2020 she inserted a 50cm tube but the record at [H412] indicates that on 29 January 2020, after H had dislodged the tube, it was replaced with a 75 cm tube. 28 cm was "NEX" which is the internal measurement from nose to ear to xiphoid, and the external measurement was 47cm. The total length was therefore 75cm. There is some evidence that the tube was re-inserted on 31 January 2020 but there are no records of the length of tube used. There is no evidence therefore that the 75 cm length of tube was changed prior to the CPM. On 19 February 2020, a day after the CPM, the NG tube was replaced and the notes at [H96] indicate that the NEX measurement was 27 cm and the external measurement was 23 cm, so the tube length was 50cm. Thus, at the time when the bruise to the spine was caused H had 47cm of NG tube external to his body. This was certainly long enough to have allowed for the port attached to the end of the external piece of tube to become lodged beneath him as he slept.

125. I am satisfied that on the balance of probabilities the bruise to his back was caused by him lying on the port at the end of his NG tube. The Local Authority criticises the parents for allowing this to happen but it might be said that a 75 cm tube should not have been used, and the parents were still relatively inexperienced in using an NG tube. I do not regard the fact that they may have allowed the tube to slip beneath H's back while he slept to be evidence of inadequate parenting or neglect on their part.

126. In reaching these findings I recognise that I have found that both parents have given untruthful evidence to the court about the father's assault on C. However, I am sure that neither of them have lied or withheld evidence from the court about H's bruises.

Rib Fractures

127. No-one has been seen deliberately causing harm to H. No-one has witnessed either parent, or indeed C or D, roughly squeezing or handling H in a way that might have caused rib fractures. Although the parents have questioned how H was handled by healthcare professionals on a number of different attendances, all the professionals who have given evidence have maintained that they handled H appropriately at all times. In short, the court has not received any evidence of an event which it is accepted by all parties might have caused H's rib fractures. Accordingly, the court has to examine the evidence available to determine whether conclusions can be made as to when and in what circumstances the fractures have occurred. I shall begin with consideration of the evidence as to bone weakness, the timing of the fractures, and the mechanism of injury. This will help to identify the possible times and circumstances in which the rib fractures may have been sustained. I shall then consider whether the evidence allows the court to find that the fractures were caused non-accidentally. Ultimately, the determination of whether H's ribs were fractured as a result of non-accidental infliction of force has to be decided on the basis of all of the evidence, applying the civil standard of proof. That determination is a binary determination as Lord Hoffman described in *Re B* (above) but it can only be made after consideration of all the evidence, including evidence that something is possible rather than probable. For example, expert evidence might indicate that it is unlikely but possible that the left ribs were fractured on a certain date, but once that evidence is considered alongside other evidence, the court might ultimately conclude that it is more likely than not that the fractures were sustained on that date. Therefore, when considering elements of the evidence it is important to keep an open mind in respect of all realistic possibilities until all the evidence has been evaluated.

The Timing of H's Rib Fractures

128. There is no dispute that H suffered the rib fractures as identified by the radiologists at the Royal Derby Hospital, at the Nottingham University Hospitals NHS Trust, and by Dr Halliday. The radiological evidence indicates that H probably sustained his right rib fractures on a single occasion between 8 and 20 January 2020, and his left rib fractures on a separate, single occasion between 5 and 12 February 2020. That was the evidence of Dr Halliday and it is consistent with the evidence of the Consultant Radiologists who examined the images in 2020. The other three expert witnesses defer to Dr Halliday on this issue and her opinion remained firm under cross-examination. Nevertheless, she made it clear that it was possible that the respective rib fractures were sustained outside the periods she had identified. The fact that Dr Halliday originally advised that the period for the right rib fractures was to 27 January 2020 and that she later changed that to 20 January 2020 serves to emphasise that the dating of such fractures is not a precise science and that there remains a possibility of the fractures occurring after 20 January 2020. Furthermore, Dr Halliday had stressed in her written evidence that the quality of the Barium Meal images – which were not obtained to examine H's ribs – was poor. It follows that timing the right rib fractures on the basis of those images should be treated with caution.

129. With that caution in mind, I allow for the possibility that the rib fractures were sustained a few days either side of the windows identified by Dr Halliday. There are limits to the leeway to be given: Dr Halliday indicated that it is very unlikely that the right rib fracture shown on that imaging had been caused only a day or so before the image was taken (on 27 January 2020). Therefore, I conclude that it is realistically possible that the right rib fractures were sustained between 4 and 24 January 2020, and the left rib fractures between 1 and 16 February 2020. Although Dr Halliday did not altogether discount the possibility of all the rib fractures being sustained on a single occasion, that appears to be a highly unlikely scenario given the different healing stages for the right and left ribs consistently shown on the radiology, and I discount it as a realistic possibility.

Reduced Bone Mineral Density

130. The weight of the expert medical evidence was that when H sustained his rib fractures, he may well have had weaker bones than other babies of the same age due to a combination of his Tetrasomy 18p, failure to thrive and weight loss, use of Omeprazole, reduced loading due to poor muscle tone, and prematurity, but the extent of such weakening cannot be determined. The relevant evidence, including a number of caveats, was as follows:

a. Bone strength is determined by bone mineral density, bone size and shape, and the presence of micro-damage. In H's case, if there was bone weakness it was due to reduced bone mineral density.

b. The Moreira paper (above) suggests an increased risk of reduced bone mineral density for individuals affected by Tetrasomy 18p. This accords with the written information given to the mother by RR on 17 February 2020 that there was a known association between Tetrasomy 18p and fractures. However, the Moreira paper does not allow for an assessment of the extent of decreased bone density. It covered a small group of individuals from a wide age range, none of whom were as young as H, and did not identify when they sustained fractures or which bones were fractured. The paper's authors were not able to identify whether there was an increased risk of fracture due to Tetrasomy 18p itself, or due to factors associated with the condition such as reduced growth or use of Omeprazole.

c. Ingestion of Omeprazole, in particular for over 30 days, is associated with increased risk of fracture. That is well-known for adult users, and research evidence is emerging of a similar risk for children. The increased risk may be as high as 10% to 20%. However, the evidence of H's ingestion of Omeprazole is not very firm and he had been administered Omeprazole for barely a month, at most, by the time his right rib fractures were probably caused, and less than two months by the time his left rib fractures were probably caused. On the other hand,

it is not known whether the effect of Omeprazole on bone strength in young infants is dose-related.

d. H's growth rate fell in January 2020 and was of concern from about mid January 2020. Later, in February 2020 he started to suffer weight loss at about the time when the left-sided fractures were probably sustained. His weight growth was at or above 0.4th centile until at around 6 weeks of age (corrected for prematurity) and then fell well below the 0.4th centile. So, the marked fall in weight growth was from about 20 January 2020 onwards. All experts agreed, as did DD, his treating paediatrician, that he was failing to grow as he should and was failing to thrive in January and February. His feeding difficulties, associated with Tetrasomy 18p, were the cause of his failure to thrive. Such were the concerns that he required hospital admission for insertion of an NG tube on 21 January 2020. Even so his growth rate slowed further, falling to very worrying levels. Whilst minerals in his blood were found to be at normal levels, Dr Cartlidge explained that bones act as a mineral reservoir and that, when in need, the body in effect re-deploys minerals from the bones to the rest of the body. Hence, normal blood results do not constitute good evidence of normal bone minerality. Poor nutrition due to H's failure adequately to feed, will have been a significant risk factor for reduced bone mineral density. This was not sufficient to show on radiological imaging at the time, and subsequent radiology has not shown any growth arrest lines.
However, there was a consensus amongst the experts that for a premature baby of H's age in January and in particular in February 2020, his growth rate became alarmingly poor and would have been a significant risk factor for reduced bone mineral density.

e. Dr Cartlidge did not agree that prematurity would have been a risk factor for bone weakness but I have included prematurity as a fourth factor because I was impressed by the cogent reasoning of Professor Mughal that the loss of nine weeks gestation in utero deprived H of the transfer of nutrients important for bone development across the placenta. Dr Halliday also supported the case that H's prematurity will have been a risk factor. Further, I was struck by the fact that GG, a very experienced Health Visitor also thought that H was more vulnerable to injury because of his prematurity. However, it should be noted that there was no unanimity on that issue amongst the expert witnesses.

f. Dr Cartlidge did not agree with Professor Mughal that poor muscle tone will have affected loading to the ribs and thereby possibly contributed to bone weakness. Even so, I include it in the list of possible contributory factors on the expert evidence of Professor Mughal who had considerable experience of the effects of poor muscle tone on the bone strength of disabled infants.

g. Although there was no radiological evidence of reduced bone density, the expert evidence was that this did not mean that reduced bone density could be excluded. Nevertheless, H did not have radiologically confirmed metabolic bone disease of prematurity or osteopenia, conditions that are sometimes detected following unexpected rib fractures in infants.

h. The academic and research evidence in support of each factor contributing to reduced bone density is far from conclusive and such evidence as there is suggests an overlap in effect of the factors identified.

i. The contributing factors were more likely to have resulted in reduced bone density, if at all, in the later part of the relevant periods under consideration, than in the earlier part, i.e., in February 2020 rather than in early January 2020. However, it cannot be assumed that H's bone density deteriorated, if at all, in a linear progression.

131. It is important to bear in mind all the caveats and to stress that the expert medical evidence was that there are many unknowns in this case in relation to bone weakness. The evidence does not allow for any assessment of the extent of bone weakness at the relevant times. Nevertheless, the experts came very close to maintaining the agreement they had reached at their joint meeting that on the balance of probabilities H's bones were weakened due to reduced bone mineral density when he sustained his fractures. Dr Halliday maintained her position but when pushed during their oral evidence, the two main proponents of that theory - Professor Mughal and Dr Cartlidge – were unable to say that it was more probable than not that H's bone density was reduced. Nevertheless, the experts were all agreed that there was a real possibility that his bone density was reduced but that the extent to which it was reduced could not be determined. There can be no precise conclusions as to when H's bones may have been weakened, if at all, but the weight of the evidence was that they were more likely to weaker from about 20 January 2020 than before that date, and even more likely to be weaker, or to be weaker still, in February 2020.

132. The evidence was that H's scoliosis was not a risk factor for weakening his ribs, but it may have affected how he was handled and the mechanism of forces required to inflict fractures. Dr Cartlidge in particular considered that H's marked scoliosis should be taken into account as a further factor that might have affected his handling and thereby his vulnerability to rib fractures. The fact that H did not suffer other broken bones after the rib fractures were discovered is probably due to a combination of factors. It being known that he had sustained the fractures, it was natural that he would be handled with even more care than usual. Further, as his nutrition and growth improved from about five to six months of age, corrected for prematurity, his bone mineral density is likely to have improved. It is right to note that he remained on Omeprazole but Professor Mughal advised the court that it is not possible to know to what extent the adverse effects of Omeprazole on infants' bone density are dose related.

The Mechanism and Force Required to Cause H's Rib Fractures

133. There was no dispute amongst the medical experts that H's fractures were, on each occasion, caused by bilateral compression of his ribs. His ribs were squeezed from both sides with sufficient force to cause posterior fractures due to leverage of each fractured rib over the adjacent spinous process. Again, this was Dr Halliday's evidence and there was no disagreement amongst the other experts. H's ribs were not fractured by a blow or by a fall. His scoliosis did not weaken the ribs or alter his anatomy such that a mechanism other than bilateral compression was liable to cause posterior rib fractures of the kind shown on his x-rays.

134. It is possible that the same person caused the right and left rib fractures and that they did so in the same way on each occasion. It is also possible that although bilateral compression was the common mechanism of fracture, the circumstances in which the right and left rib fractures were caused were different or they were inflicted by different people on each occasion. That might be thought to be too much of a coincidence but if H's ribs were weakened for the reasons discussed below, then it must be regarded as a possibility. Indeed, Counsel for the mother submitted that the fact that H sustained rib fractures on two separate occasions suggests that his ribs were indeed susceptible to fracture – two different individuals could have unwittingly caused his rib fractures by each handling him in what they thought was a normal manner. The expert evidence was that the most likely way in which bilateral compressive force would be applied to the ribs of a baby of H's age is by adult human hands squeezing the ribs but in my judgment the fact that that occurred twice does not establish either that it was the same adult on both occasions or that it was by a different adult on each occasion.

135. The four experts used different expressions, with different emphasis, to describe the degree of force that would have been required to cause H's rib fractures in the event that he did have reduced bone density. Dr Halliday remained convinced that the force required would have been in excess of normal or even firm handling. Dr Saggar said he would be surprised if the fractures could have occurred without obvious explanation of a memorable force. However, Dr Cartlidge, who has more experience of handling babies of H's age than the other experts, advised that robust handling could have caused H's fractures if he had reduced bone mineral density, and that from about mid to late January 2020 – which I would take to be from about 20 January 2020 – a person handling H robustly whilst he was already distressed and crying might have caused the rib fractures without being aware of what they had done. Professor Mughal expressly agreed with him at the joint experts' meeting and Dr Saggar and Dr Halliday appear to have deferred to Dr Cartlidge at the meeting on this issue.

136. I remind myself of H's prematurity. Although he was about four to five months old at the time when the fractures probably occurred, he had been born nine weeks prematurely. His corrected age was therefore about two to three months. Because of his small size – being that of a 2-3 month old baby who was not gaining weight

as he should - a person handling him with reasonable care would tend to handle him as though he were two to three months old, not four to five months old.

Evidence as to How H was Handled During the Relevant Periods

137. Keeping in mind the possible timing and mechanism of rib fracturing, I shall evaluate the evidence as to how H was handled during what are the relevant periods. As already noted, there is no direct evidence of any person deliberately inflicting the rib fractures. Between 4 and 24 January 2020 inclusive, H was at home, cared for by his parents. On 7 January 2020, H attended an outpatient appointment with an occupational therapist, AAB, and was seen by FF in the NICU when he was weighed. He was examined at DD's clinic on 13 January 2020 in the presence of FF and the mother, and at HH's outpatient clinic on 15 January 2020 when II also examined him. AAC, a healthcare assistant was present, as was the mother. He was visited at home by FF on 16 January 2020. On 21 January 2020 H was admitted to the Z Ward at the Royal Derby Hospital and was seen on the NICU before his admission. He underwent ultrasound examination of his abdomen and pelvis on 21 January 2020, insertion of the NG tube on the same day, and the failed MRI scan on 23 January 2020. He was examined by doctors and physiotherapists on the ward on a number of occasions including when the Moro test was performed on him.

138. Between 1 and 16 February 2020, H was cared for by his family at home. There were home visits on 7 and 10 February 2020 by EE and on 13 February 2020 by FF (accompanied by QQ, student nurse).

139. I can find no evidence of any handling or incident involving healthcare professionals including EE and FF when visiting H at home in January and February 2020 that would come close to having caused rib fractures. Their handling was, I am quite satisfied, careful and without the application of force. The mother was present on each occasion and the father was present at most visits. Neither raised any concerns at the time about the way H was handled. Indeed, the father said in his evidence that H was always handled with care by health visitors and nurses on home visits. The nurses and health visitors were all experienced in dealing with premature babies in the community. I found their evidence to be straightforward and honest. The parents both accepted in oral evidence that they had been mistaken when in their statements they had said that H was stretched out for his length to be measured on 13 February 2020 by student nurse QQ in the presence of FF. That had in fact occurred on 2 December 2019, they said, by ZZ, student, in the presence of GG. H's length was measured and recorded that day but GG did not accept the parents' account. However, that is irrelevant because the possibility of H suffering rib fractures on 2 December 2019 can be discounted. Likewise, there is no evidence that H suffered any distress when seen by the occupational therapist on 7 January 2020 or when weighed at hospital by FF that day. In any event at that time considerable force would have been required to fracture his ribs, and there has been no suggestion that force was used capable of inflicting fractures on that date.

140. The parents have raised concerns about H's handling by healthcare professionals at consultations or as an in-patient on various specific occasions between 4 and 24 January 2020 inclusive. They refer to the out-patient consultations on 13 and 15 January 2020, the performance of Moro tests on H on 22 January 2020, and the failed MRI on 23 January 2020. Dr Cartlidge also raised the possibility that the insertion of the NG tube which was performed on 21 January 2020 could have involved some robust handling. There is no evidence and no suggestion that there was non-accidental infliction of force by healthcare professionals at out-patient appointments or whilst H was an inpatient in January 2020. As to the accidental or inadvertent infliction of force, the evidence does not disclose any handling or incident at the consultations on 13 or 15 January 2020 that could possibly have caused rib fractures. All the evidence is of unremarkable examinations on those days which did not involve bilateral compression to the chest. Likewise, whilst the Moro tests might have been alarming to the parents, the mechanism of handling as they and the medical witnesses described did not involve chest compression and I discount those tests as a possible cause of rib fractures. The insertion of the NG tube and the failed MRI scan require more consideration.

141. The nasogastric tube insertion on 21 January 2020 was performed by DDD with assistance from an unknown colleague. I was impressed by DDD as an experienced nurse who has conducted hundreds of such insertions and who was trying her best to give an account of how the procedure is performed. She could not remember anything about the specific insertion on 21 January 2020 which is unsurprising but suggests that there were no unusual features. When describing how her colleague would probably have held H during the procedure, which probably lasted about one minute, she did describe a hold which would have involved some mild pressure being applied bilaterally to the sides of H's ribs but not with any force applied to the front and back of the chest. It is possible that greater pressure than normal was applied if, as was his wont, H was wriggling during the procedure and it is clear from the evidence that almost all babies find this procedure to be very distressing. However, there is no evidence that any kind of bilateral compression was applied to the front and back of the ribs, as could be applied when a baby is held around the chest by adult hands. Neither parent was present when this procedure was performed and there is no evidence that H was subjected to forces liable to have caused posterior rib fractures.

142. It is clear that H was crying and upset during much of the failed MRI scan process. I accept the father and D's evidence that at some point the doors were open from the waiting area to the preparation area and they could hear H screaming. The mother too recalls how distressed he was. H had arrived in the MRI suite already swaddled. There is a dispute about the identity of the nurse who escorted him from the ward to the suite but in my view nothing turns on it. CCC cannot remember much about her involvement in the MRI process itself in any event. The evidence shows that the sedation was given later than planned and in something of a rush. H was swaddled by someone (unknown) before being taken down to the scanner suite. AAD thought the swaddling had been done in place of a sedative, to keep him calm and still. The sedative was ineffective in keeping him calm. There was a misunderstanding at the time about whether he had been sedated or not. The whole

process of attempting to keep him still for the MRI scan lasted about twenty minutes. The object was to keep him still in the scanner for a sufficient length of time that clear images could be obtained. He would not keep still, even when a sandbag was placed to prevent him lifting his pelvis. The parents cast doubt about the plausibility of AAD's account that H's legs were over his head. Her evidence suggests to me that he was moving about a great deal such that his head could not be scanned within the scanner. This may well have included his legs being raised and getting in the way. It was considered important to obtain the head scan images and so repeated attempts were made, but it proved to be impossible. Two radiographers as well as the nurse escort were involved. It was a struggle to keep him calm and still. A sandbag was used to weigh him down. I am satisfied that it was not placed on his chest, but it is striking that NN had never before seen a sandbag used in these circumstances, which indicates just how difficult it was to keep him in one position. I am quite satisfied that he must have been handled on numerous occasions throughout the twenty minutes, that he was very distressed, that he was handled so as to keep him in a certain fixed position so that images could be taken, and that a degree of force will have been used. The mother was positioned outside the room and could not see what was happening inside the scanner room itself, but she gained a clear, and I am satisfied, reliable impression that the staff were finding it difficult. I am satisfied that none of the healthcare professionals believed they were using excessive force but I am also persuaded that H may well have been picked up and held in position by being held around his chest during the 20 minutes or so he was in the scanner room. The parents clearly recall H being unsettled after the attempted scan and apparently finding it uncomfortable to be in a sitting position. The occasion was one that struck the parents as of concern at the time and it certainly stayed in the mind of the mother because she mentioned it soon after the presence of rib fractures was first revealed to her on 18 February 2020. The date of the MRI scan falls a little outside the period in which Dr Halliday has advised the right rib fractures were probably sustained, but for the reasons already set out it remains a possibility that the right ribs were fractured as late as 23 January 2020. Furthermore, it is more likely that H's ribs were weakened due to the combination of factors already discussed, including worsening growth and nutrition, by 23 January 2020 than earlier in that month.

143. Accordingly, I cannot discount the possibility that bilateral compression was applied to H's ribs with a greater degree of force than would be expected from normal handling on 23 January 2020 or during preparation for the attempted MRI head scan. It is possible that on that occasion H was "overzealously swaddled" or was held with two hands around his chest too robustly as he was placed and kept in position in the MRI scanner room. H was struggling at the time of the scan and he was evidently distressed during and after it. The parents did not witness exactly what was going on in the MRI room but they clearly remembered H's distress and his discomfort afterwards.

144. When told about the rib fractures on 18 February 2020, the mother also recalled the incident involving the mother of another child, who had picked up H without permission when he was on Z Ward on 26 January 2020. There is no contemporaneous record of this incident, but there was no indication at the time that

any harm had been caused. The incident had stayed in the mother's mind not because she feared at the time that H had come to harm, but because the other mother's behaviour had been so odd. There is no corroboration for the mother's account but she did mention it at the CPM on 18 February 2020, and she gave a detailed account of it in her first statement dated 10 March 2020. She explained to the court that when the incident happened she had just been told that she could take H home. She was excited by that news and did not think to trouble the nurses about the incident. She did not think at the time that H had come to any harm. I do not accept that the mother has simply fabricated this incident. However, there is no evidence that the unknown woman held H around the chest with her hands, let alone that she squeezed H tightly or otherwise applied excessive bilateral compression to his ribs. There is no evidence that she caused harm to H deliberately and it would be extremely speculative to suggest that she did so. There is no evidence that H was distressed at the time when she held him or immediately afterwards. Furthermore, the timing of the incident falls outside the period I have allowed for when the right rib fractures may have been sustained. I disregard this incident as a possible cause of H's right rib fractures.

145. Aside from the specific occasions discussed, there is no evidence that H's general handling by healthcare professionals whilst he was an in-patient was rough or that it involved undue bilateral compression of his ribs. The parents did spend time with H when he was an in-patient in January 2020 but there is no suggestion that they handled him roughly when in hospital. H was on a ward with hospital staff and other patients and parents around. No concerns were raised about the parents and there is no evidence to suggest that either parent deliberately or inadvertently caused H to sustain his rib fractures whilst he was an in-patient.

Accidental or Non-Accidental

146. The evidence as to the timing of the fractures, the susceptibility to bone fractures due to Tetrasomy 18p, poor weight gain and the other factors already discussed, the mechanism by which damage was caused, and the way in which H was handled by healthcare professionals, leads me to the following conclusions which form the context within which I shall consider whether, on the balance of probabilities, H's rib fractures were inflicted non-accidentally:

a. It is probable that H sustained his right rib fractures in a single event, and his left rib fractures in a different, single event.

b. H's right rib fractures were probably sustained on a single occasion between 8 and 20 January 2020.

c. H's left rib fractures were probably sustained on a single occasion between 5 and 12 February 2020

d. Nevertheless, there is a realistic possibility that H sustained his right rib fractures as early as 4 January 2020 and as late as 24 January 2020, and his left rib fractures as early as 1 February 2020 and as late as 16 February 2020.

e. The rib fractures on each occasion were caused by the application of bilateral compression to H's chest, probably by adult human hands.

f. H's scoliosis was marked for his age. It would not have contributed to weakening of his bones but it may have meant that the mechanics of forces applied to his ribs when handled were slightly different from those that would have been applied without his scoliosis - it may have led to forces being applied atypically when he was being held in two hands. Nevertheless, the mechanism of fracture was bilateral compression of the chest.

g. There is a real risk that from 20 January 2020 to 16 February 2020 H had weakened ribs due to a combination of factors including Tetrasomy 18p and poor weight gain followed by weight loss, such that it is possible that during that period robust handling, applying bilateral compression to his chest with more force than would be regarded as normal for a baby of his corrected age (two to three months) could have caused his right rib and then his left rib fractures. I am satisfied that it is possible that whoever was handling H at the time

   of the fractures during that period might not have been aware that they had caused him significant injury. This has occurred with other vulnerable babies within a hospital setting within the experience of Professor Mughal and Dr Cartlidge.

h. The possibility of H having reduced bone density, and therefore weaker bones than would be expected for a baby of his age, was low prior to 20 January 2020 but it was increasing up to that date and continued to increase afterwards. His Tetrasomy 18p was a constant factor but his growth rate deteriorated over the period. Accordingly, the possibility that rib fractures were caused by the inadvertent application of excessive force was low before 20 January 2020 but increased with every day after 20 January 2020.

i. If H's ribs were fractured when he had normal bone density then the likelihood is that they were fractured by the non-accidental application of bilateral compression to his chest.

j. The expert evidence does not allow for precision as to the dating of the fractures or the extent of reduced bone density, if any during January and February 2020 but, balancing the expert evidence about the dating of the fractures with the expert evidence about the possibility of reduced bone density, I conclude that, even allowing a generous margin, there is no realistic possibility that H's right rib fractures could have been caused accidentally or inadvertently prior to 15 January 2020 or after 24 January 2020. Before 15 January 2020, his bone mineral density was very probably sufficient such that only unacceptable, non-accidental infliction of force could have caused the

fractures. The risk of reduced bone mineral density was higher by 24 January 2020 but the right fractures are very unlikely to have been caused after that date because radiological images would not have shown the right fib fracture seen on the Barium Meal image on 27 January 2020 or the degree of healing later shown on the x-ray on 17 February 2020.

k. Hence, the expert medical evidence establishes that,

   i) If the right rib fractures were caused before 15 January 2020 they were very probably caused by the non-accidental infliction of force.
   ii) It is possible that the right rib fractures could have been caused deliberately or inadvertently between 15 and 24 January 2020.

l. I apply the same approach to the left rib fractures. They must have been sustained before they were identified by the skeletal survey on 19 February 2020. Dr Halliday thought they were at least one week old on that date. Allowing for a generous margin for the dating of the fractures, I conclude that it is possible that H's left rib fractures were caused between 1 February and 16 February 2020. By 1 February 2020 the possibility of reduced bone mineral density, and therefore of the possibility of the inadvertent application of force causing rib fractures, was greater than it had been in mid to late January, and the possibility of reduced bone mineral density continued to increase from 1 to 16 February 2020.

m. Hence, the expert medical evidence establishes that it is possible that the left fractures could have been caused deliberately or inadvertently between 1 and 16 February 2020.

n. I accept Dr Cartlidge's opinion evidence, agreed by Professor Mughal, that from mid to late January 2020, which I take to be from on or about 20 January 2020, someone handling H whilst he was already distressed, might have fractured his ribs without knowing what they had done, albeit by the use of force greater than would be normal when handling a baby of H's corrected age. The event might not therefore have been a memorable event for the person handling H or any person witnessing the handling of H. This became more likely by the time H's left rib fractures were sustained. For the vast majority of babies this would not be so, but in H's case he may well have had reduced bone density for the reasons given above. On the basis of the expert evidence, from 15 until 20 January 2020 H's ribs could have been fractured inadvertently but the event would have been memorable. The handler would know that they had done something harmful to H. Thus, when it became known in mid February 2020 that H had suffered right rib fractures three to six weeks earlier, any person who had caused the fractures even inadvertently through rough handling from 15 until 20 January 2020 would have remembered the event and would have known that they might have been responsible. Before 15 January 2020 the force required would have been unacceptable and so it would be very likely that the fractures would have been non-accidental.

o. There is no evidence of any incident or handling involving H whilst he was being visited at home by healthcare professionals, or at out-patient appointments, or when being handled generally on the ward as an inpatient, in January or February 2020 that could conceivably have caused H's rib fractures. Nor, is there any evidence of deliberate infliction of injury by any healthcare professionals.

p. The only event in hospital that I find could have resulted in H sustaining rib fractures accidentally, was the attempted MRI scan on 23 January 2020.

147. The evidence of and about the parents is crucial to the determination of whether the fractures or bruises were caused by them non-accidentally or by the inadvertent application of excessive bilateral compressive force to H's ribs. The following evidence about the parents is important:

a. They have cared for five babies at home before they cared for H. None of them suffered any injuries that have been thought to be nonaccidental whilst in their care.

b. C, who has no reason to be partial to her parents given their current strained relationships, told the court that she had never seen the parents handle H with anything but care.

c. The parents were visited by health visitors, social workers and neonatal nurses fairly frequently in the periods under consideration. None of them had any concerns about the way the parents handled H or about their relationship with him or the other children. I count six home visits or out-patient attendances between 1 and 21 January when H was admitted to hospital, and a further five between leaving hospital on 29 January 2020 and 18 February 2020, the day of the CPM.

d. In January and February 2020, until H was made the subject of an interim care order, the parents engaged fully with medical and social care professionals. They did not cancel appointments or block access. To the contrary, they asked questions, sought to be fully involved in H's care, and took H to all appointments as requested. They were keen for him to be treated in hospital. They were anxious about his inability to take on feeds and his repeated vomiting after feeds.

e. The parenting assessment, albeit performed months after the events in question, was very positive about the mother and father's parenting capacity.

148. In assessing the parents' evidence I bear in mind that they each had to give their evidence in the charged atmosphere of the courtroom in a case which will determine whether their children will be returned to their care. Great

caution has to be exercised before inferring anything from their demeanour when giving evidence. I rely not on how they appeared, but on their written and oral evidence, and how that sits alongside all the other evidence in the case. The mother's evidence showed her to be a caring mother, sensitive to her children's needs, but someone who glossed over the extent to which the family has had very real difficulties with which she and the father have struggled. She has had to manage six children, including E who had particular needs and required a great deal of therapeutic intervention, and H who was a baby with significant feeding problems who was failing to thrive, and to deal with a husband who was suffering mental and physical health problems. She had given birth to H by emergency Caesarean section when he was only 31 weeks gestation. She had to deal with multiple practical issues and was being scrutinised by social care whenever she failed to deal with one or more of those issues. Added to that, she was clearly concerned about C who, aged 15, was apparently having sexual relations with a boy whom the mother and father considered to be unsuitable due to his sexualised messaging to their daughter. The mother's apparent composure, even cheerfulness, when giving evidence seemed to me to belie the difficulties she must have encountered at the time. The extent of the mother's burdens became even more apparent to me after I had heard the father give evidence. The mother has had to be constantly watchful to guard against him losing control of his diabetes and his mental health. She acts as a correction against his anger, and sometimes even his paranoia, about other people outside the family. Nevertheless, during the key period of January and February 2020 the father had stepped up and was helping to feed and change H during the day, and to look after the other children. The health visitors and neonatal nurses had no concerns about the mother's attachment to H, her relationship with the father, or the parents' relationships with the children. The evidence suggests that the house was tidier than it had been for some time and that the parents were coping well in a difficult situation. If anything, they were coping better than they had done in the previous two to three years.

149. The Local Authority suggests that the strains on the mother caused her to "snap" and to injure H by the non-accidental infliction of bilateral compression to his ribs. They have focused on an incident on 13 January 2020 when the mother says she witnessed H having a seizure in the middle of the night. Why, asks the Local Authority, did she not immediately wake up her husband? Why did she not inform DD about the incident when she saw him with H later that day? The mother says that she went to H and soothed him. Then she woke her husband who sleeps heavily at night due to his medication. She says that she mentioned the apparent seizure to FF before they both went in to see DD and FF told her to film H if he had another episode, otherwise the doctor could do nothing about it. FF confirmed that the mother had told her about an apparent seizure but she could not recall the date.

150. The expert evidence shows that it is possible that H suffered his right rib fractures on 13 January 2020. If so, for the reasons set out above, they were probably inflicted non-accidentally. However, I am satisfied that the mother

told the truth to the court about witnessing H having an apparent seizure that night, and having mentioned it to FF. Seizures are a known possible consequence of Tetrasomy 18p. I do not find the mother's evidence about that episode and how she dealt with the suspected seizure to be suspicious or incredible. Indeed, I accept her evidence on that issue. I reject the suggestion that on 13 January 2020 the mother deliberately or even accidentally caused H's rib fractures and that she has used the story of a suspected seizure to cover up her actions.

151. The mother had ample opportunity to squeeze H hard to his ribs had she chosen to do so in anger, exhaustion, or otherwise. However, I find her to be a caring mother, experienced in coping with the demands of babies, who was being monitored by various agencies at the time, whose handling of H and ability to cope with his particular demands had been of no concern to those professionals, and who was not showing any signs of the anxiety that had afflicted her in the past. In January and the first half of February 2020, despite the multiple demands on her, the mother appears to have been mentally strong. The father was doing a lot at the time to help the mother and the children and was working well with FF and GG. There is no evidence at all that the mother has snapped or acted violently towards any of her other children in the past. The mother had a lot to contend with but the evidence suggests that she was coping relatively well at the relevant time. It is unsurprising that on one occasion she reported feeling overwhelmed, but that is not a solid basis on which to build the suggestion propounded by the Local Authority, that she snapped on 13 January 2020 or on any other occasion and caused H's right rib fractures, before snapping once more in February 2020 and doing the same to his left ribs.

152. Had the mother snapped and inflicted non-accidental force on H sufficient to break his ribs in January and/or February 2020, had she known that the father had done the same, or had she been aware of an event when she was too rough with H and knew that she may have hurt him, then I would have expected her to be much less open with healthcare professionals than she was. The mother was keen for H to be admitted for insertion of an NG tube, she readily attended all medical appointments involving H. She was open and collaborative with the numerous professionals involved at that time. She did not appear to be hiding anything. I have already commented on some concerns I have about the CPM. The view that the mother's explanations were inconsistent and therefore suspicious was, I believe, unfair to her. UU wisely told the court that in her experience parents in the situation in which the mother found herself, will often desperately search their memories for any incident that might have caused injury to their child. The mother may have raised new concerns about H's handling by others as the CPM progressed but that is not suspicious or an indication that she was covering up an act of harm against H. It was recorded in the CPM report that the mother had seemed genuinely shocked when informed of H's fractures. UU visited the family on the evening of the CPM and the parents were open and, she thought, honest with her.

153. I have to take into account my finding that the mother's evidence about the father's assault on C was not truthful. I do not believe that she did see the father tap C with his finger but she has been willing to say that she did to support him. Furthermore, I am concerned that both parents have allowed D to become a partial witness in this case and in relation to the assault on C in particular. I am sure that D has tried to tell the truth to the court, but I am concerned that her view of the truth has been influenced by conversations with the parents over the past year. I do not conclude that they have coached her, but rather that she has been influenced by their own strong views about this case. Has the mother lied or withheld the truth about other matters in order to cover up either her own responsibility or her husband's responsibility for fracturing H's ribs? I have given this matter anxious consideration. The mother is very loyal to her husband. She has cared for him for many years since his breakdown following the stillbirth of L. She has supported him even when his behaviour has been challenging. They form a close unit. Her misguided support for her husband in relation to the assault on C arises from a conflict between the parents and C. They feel terribly let down by her because they believe she was having underage sex with K even after their warnings to her not to do so, and because she then left them, choosing to live with another family of whom the parents strongly disapprove, and did so at a time when she knew that her younger sisters were about to be taken away to be placed with foster carers. No doubt C felt isolated within the family. The parents ought to realise that as parents they have the responsibility now to reach out to C. Whilst the parents' lack of communication with C now is sad, hurtful to her, and very regrettable, it arises from their feeling very hurt by C's actions. C was not injured by the father, and the incident was of a different order from any deliberate assaults or rough handling that would have been known to have possibly caused H his fractured ribs. The Lucas direction is very pertinent to this case. The mother has not told the truth to the court about the assault on C in order to protect the father from the allegation against him in respect of that incident, but I do not believe that she has lied to the court in order to protect herself of the father from allegations that they fractured H's ribs.

154. I saw for myself how the father's mental health problems can cause him to be angry, even paranoid, about other people outside the family. Very sadly this has affected his relationship with C, especially since she left home in March last year, since he apparently now views her as an outsider. He has acted in anger previously – his medical records include several reported examples of angry outbursts and aggressive verbal behaviour towards the mother. He has become embroiled in a number of confrontations with others and he was fined for an offence of racially aggravated public disorder in September 2013 following an altercation with neighbours in Surrey. However, those incidents all occurred after his mental breakdown and whilst he was severely unwell with depression and PTSD. What struck me about the father was that whilst he was angry and resentful about many people outside his immediate family, and now apparently regards C as falling within that group, he cares deeply and protectively about those within the immediate family – the mother, D, E, F, G, and H. He spoke with genuine tenderness about H and how small and precious

he was. He showed me H's tiny clothes and he demonstrated how gently he used to pick him up and hold him. Like the mother, the father will have had opportunities when alone with H to squeeze his ribs in anger, frustration or exhaustion, but the mother was always at home, not very far away, as was D who was not in school at the time. He also knew that the next visit from a health visitor, neonatal nurse or social worker was never far away. The father was not at the CPM and so his reaction to being told of the injuries to H was not seen or recorded. However, UU saw him that evening and found him, like the mother, to be open and, she believed, honest about what had happened. Whilst the father has not engaged with CC and, on his own account, had a difficult relationship with AA, he has engaged with other professionals and there is no record of him being dishonest in his dealings with them.

155. I have found that the father has lied about the assault on C. I have to consider whether he has also lied or withheld information from the court about deliberate assaults on H, or handling of H he knows was too rough, in which he caused the fractured ribs. The father became very defensive in his oral evidence. He revealed a view of the world in which many people outside the immediate family unit were set against him and would even perjure themselves to pin blame on him or the mother for H's injuries. I reject his view, but it raises the question whether it betrays his own willingness to lie to support his side in what he sees as a battle against opposing forces. On balance I do not believe that the father has lied to cover up a deliberate assault on H either by himself or anyone else. The father's assault on C was unacceptable but it did not cause her injury, it was not a punch, and it was at the lower end of the scale of physical assault on a child. I am sure that he acted as he did towards C because he saw her as responsible for having brought K to the house, invading his place of sanctuary and disturbing the family that he relied upon to protect him from the outside world. Even so, he did not cause C serious harm. Any deliberate infliction of injury to H would be of a different order. The father demonstrated very tender and protective feelings towards H during his oral evidence which I took to be genuine. H was part of the immediate family and so within the ring of people whom the father viewed as being part of his safety zone. The father was anxious to care for and cherish H. He engaged with healthcare professionals in an open way to do his best for H. Part of the father's resentment against professionals in this case stems from his conviction that having given loving care to H, he and the mother have not deserved to be treated as they have been. His resentment did not appear to be concocted for effect; it was genuine. His anger arises from frustration at not being believed, rather than being a shield to cover up what he knows has done to H. I am satisfied that the father has not deliberately inflicted injury on H or handled him so roughly that he knew he may have caused the fractures, and he has not lied to cover up his actions. Likewise, I am satisfied that he is not covering up evidence about the mother having harmed H.

156. Having weighed all the evidence I am satisfied that neither parent has lied to this court to cover up the deliberate infliction of bilateral compression to H's ribs. I am satisfied that on the balance of probability neither parent deliberately

inflicted bilateral compression to H's ribs so as to fracture them. I therefore dismiss the Local Authority's central allegations that H's rib fractures were non-accidental injuries and that they were inflicted on H by his mother and/or his father. The possibility of any other member of the family or visitor causing deliberate injury to H's ribs, whilst he was in the family home, without either parent being aware, is not alleged – there is not evidence of such interactions with H and the possibility can be discounted. Similarly, I am satisfied that neither parent has lied to the court about a memorable incident in which they handled H too roughly or saw him being handled too roughly by the other, which they know or suspect might have caused his rib fractures.

157. The possibility remains of H being handled with excessive force for a baby of his (corrected) age, and his ribs being fractured inadvertently without the handler realising that they had caused him injury. On my earlier findings the right ribs could only have been inadvertently fractured without the handler realising they had caused harm between 20 January and 24 January 2020. The left ribs could have been fractured in such circumstances at any time between 1 February and 16 February 2020. During those periods H was at home in the care of his parents on 20 January 2020 and on 21 January 2020 until his admission to hospital, and then throughout the relevant period in February 2020. H did not feed well and often vomited his feed, requiring his clothes to be changed. This happened several times a day during January and February 2020. He could become distressed at those times and I have heard that he was a wriggly baby. It is certainly conceivable that on more than one occasion, when trying to change H's clothes, clean him up, and console him, he was "over-zealously cuddled" as Professor Mughal has put it, or "robustly handled" to use Dr Cartlidge's expression. The parents each repeatedly denied any occasion on which they had been anything other than very gentle in their handling of H, perhaps out of concern that they would be unfairly judged. I am concerned that they were gilding the lily in that respect, desirous as they were to impress the court that they had not harmed their son, but I am satisfied that they were not deliberately covering up incidents when either of them knows that they handled H too roughly. I am satisfied that if the fractures occurred when H was at home, they were caused without there having been a memorable incident. It is likely they were caused when one or other parent handled H with too much force at a time when he was particularly distressed, as I heard occurred quite frequently.

158. The attempted MRI scan also occurred within the period in which H could have sustained his right rib fractures without the handler realising that they had caused him harm. I am satisfied that he was distressed during that procedure, and that it is possible that he was handled robustly for the reasons already discussed. There are no other incidents or interventions involving other healthcare professionals handling H which I include as realistic possibilities for when H sustained his right or left rib fractures.

Findings of Fact

159. I have already made findings in respect of the allegations of neglect, assaults on C and E, abuse, and the bruising to H. Those conclusions are confirmed in the schedule appended to this judgment. Drawing all the evidence together and stepping back to ensure that the conclusions I reach on the allegations concerning H's fractures are coherent, plausible and consistent with the evidence, I have now to consider what findings about the cause of H's rib fractures I can make applying the civil standard of proof on the balance of probabilities. I have to ensure that I have weighed the expert evidence alongside all the other evidence in the case. What the experts believe was only possible, might be found to be probable if the evidence as a whole drives the court to that conclusion. I remind myself that the question for me to determine is not whether a particular explanation of H's rib fractures is more probable than another explanation, but whether it is more probable than not. In applying that test, I make the following findings in relation to whether H's rib fractures were accidental or non-accidental:

It is more probable than not that,

a. H sustained his right posterior rib fractures in a single event, and his left posterior rib fractures in a different, single event. On each occasion the ribs were fractured by human hands applying bilateral compression to H's chest.

b. H's right and left rib fractures were caused accidentally. I am not satisfied on the balance of probabilities that either parent deliberately inflicted the rib fractures. There is no suggestion and no evidence that any other person deliberately caused the fractures. I am satisfied on the basis of all the evidence that at the time his rib fractures were sustained it is more probable than not that H's bones were weaker than those of a baby of the same age, corrected for prematurity, due to a combination of factors including his Tetrasomy 18p and his deteriorating growth rate leading to reduced bone mineral density.

c. The right rib fractures were caused inadvertently on a single occasion between 20 and 23 January 2020 inclusive. Whilst Dr Halliday advised that the right rib fractures probably occurred in a period up to 20 January 2020, and therefore not on 21 or 23 January 2020, the evidence taken as a whole persuades me the rib fractures were caused inadvertently by one or other of H's parents when caring for him at home on 20 or 21 January (prior to his admission to hospital) or by healthcare professionals handling H during the attempted MRI scan on 23 January 2020.

d. The left rib fractures were caused inadvertently on a single occasion when H was at home in the care of his parents between 1 and 16 February 2020 but not when he was being handled by healthcare professionals on their visits to the family home during that period.

e. At the times when the fractures were caused H was handled more robustly or zealously than would be considered normal for a baby of his (corrected) age but he was already distressed when being handled, his bones were susceptible to fracture, and the handler did not realise that they had caused him harm.

f. The parents have not lied or covered up their knowledge of a deliberate or accidental infliction of force that caused H's rib fractures.

160. I cannot determine, on the balance of probabilities, whether the right rib fractures were caused by H's handling at home or during the attempted MRI scan on 23 January 2020. In either event, there is no criticism of the handler who caused the rib fractures. They were not to know that, due to a combination of factors, H was susceptible to rib fracture. They would not have known what they had done.

161. The Local Authority seeks findings that H suffered physical and emotional harm and was at risk of suffering further harm in the joint care of the mother and father. On my findings H did suffer left rib fractures in the joint care of the mother and father but that was not due to any deficiency in their care of him as parents. Nor did it, or the possibility that the parents caused the right rib fractures in January, give rise to any risk of future significant harm.

162. The Local Authority alleges that C, D, E, F and G suffered significant harm and are at risk of suffering significant harm in the care of the mother and father. That allegation is not proved.

a. The findings in respect of H's injuries do not give rise to any concerns of risk of significant harm to the other children.

b. The allegations of neglect predominantly concern E and F. The allegations are established to the extent set out in this judgment and the schedule appended to this judgment, but the children did not suffer significant harm as a result. There is no evidence of any harm coming to E as a result of the absence of an in-date EpiPen at her school, or her lack of Piedro boots. The other concerns regarding appearance and smell were occasional and there is no evidence that they caused emotional or other harm to the children. At the relevant time for consideration of the threshold under s.31 of the Children Act 1989, there was, I am satisfied, no risk that E, F or the other children were at risk of significant harm due to matters such as missed appointments or personal presentation at school.

c. Whilst I have found that the father struck C with a closed fist in November 2019, she did not sustain injury save for short-lived pain, and this was an isolated incident of physical force. I am not satisfied that it caused her significant harm or that she was or is at risk of suffering

significant harm in the future, or that the incident gives rise to a risk of significant harm to her siblings.

d. There is no evidence that D or G have suffered or are at risk of suffering from significant harm through neglect, assault or otherwise.

163. H and his sisters D, F, and G have been in foster care for over a year. I have made some observations about the Child Protection Medical but I make no criticism of the Local Authority's actions in seeking interim care orders nor of the making of those orders. H's fractures were significant injuries, they appeared, as I have found to be the case, to have been sustained on more than one occasion. The medical opinions offered at the time were given in clear terms. The parents could not account for the fractures. It is only after detailed expert evidence has been obtained that a clearer picture of the possibility of reduced bone density and therefore of vulnerability to rib fracture at the relevant time, has been established. Even after detailed exploration of the issues by the eminent experts in this case, there remain many unknown factors and there are disagreements amongst the experts on certain issues. At their meeting the experts openly expressed doubts about what the medical evidence established in this case. All the evidence suggests that the four youngest children have been very well cared for by their foster carers but for over a year this family has been driven apart by the events I have had to consider in this judgment. I very much hope that they will be supported during what may be a difficult process of reunification and healing, and that the process includes C who will need and want her parents back in her life at some point in the future, just as they will need and want her. I urge both parents to accept help, to rebuild trust, and to work with the social care team and healthcare professionals in the future.

164. Ms Heaton QC and Ms Southcote-Want have represented the Local Authority with conspicuous fairness and have very properly taken time to reflect with the Local Authority on the evidence as the hearing progressed. They withdrew certain allegations appropriately and they advanced a case that was sustainable on the evidence. I am grateful to the Trust for so efficiently discharging the significant burden on it of arranging for evidence to be given by so many of its employees. I thank all the advocates and solicitors for their preparation and presentation of this case. I wish the family well.

Appendix One

Schedule of Findings Sought and Findings Made

Background

At the date of Judgment (11 June 2021) H is aged 20 months. C is aged 17 years. D is aged 15 years. E is aged 10 years. F is aged 6 years. G is aged 4 years. The children lived with, and were in the joint care of, the mother and the father at all material times.

On 17 February 2020 H was seen by a geneticist at Royal Derby Hospital who requested an X-ray to assess H's scoliosis. On 18 February 2020 the parents were asked to take H to the Royal Derby Hospital for review and a CPM was undertaken.

Findings Sought by the Local Authority	**Findings Made by the Court**
Upon examination the following injuries were found: (i) Fractures of the posterior aspects of the right 8th, 9th and 10th ribs and; (ii) Fractures of the posterior aspects of the left 8th, 9th, 10th and 11th ribs; (iii) 1.5 x 0.5 rectangular bruise to the outer aspect of the left foot; (iv) A small red mark just above the bruise ((iii)) to the anterior aspect of the left foot; (v) 1 x 0.5cm faint blue rectangular bruise to the outer aspect of the right foot.	Findings made as alleged

The injuries to H were inflicted injuries: they were not accidental injuries.	Not proved. On the balance of probabilities the injuries were accidental

The rib fractures were caused by compression from both the back and front of the chest. H was held between adult hands and squeezed with a high level of force	The rib fractures were caused by bilateral compression to the back and front of the chest. H was held and squeezed with a level of force greater than would be normal when handling a baby of his age (corrected for prematurity)
Significant forces were applied to H's chest, such forces lie considerably outside the normal or rough handling of a child	The forces applied to H's chest were greater than would be normal when handling a baby of his age (corrected for prematurity) but were consistent with over-zealous or robust handling
The rib injuries sustained by H were inflicted upon him by applications of force on at least two separate occasions	The rib injuries sustained by H were inflicted on him by applications of force on two occasions. The right fractures were caused on a single occasion and the left rib fractures were caused on a separate, single occasion
The injuries to H's feet were caused by the application of force, such force lies outside the normal handling of a child	The injuries to H's feet were caused by the application of force which was within normal handling of a child during an x-ray procedure on 17 February 2020.
H's right side rib fractures were between 3-6 weeks old on the radiographs of 19 February 2020. The rib fractures occurred between 8 January 2020 and 20 January 2020	H's right rib fractures probably occurred on 20, 21 or 23 January 2020
H's left side rib fractures were between 7-14 days old on the radiographs of 19 February 2020. The rib fractures occurred between 5 February 2020 and 12 February 2020	H's left rib fractures probably occurred between 5 and 12 February 2020 and possibly as early as 1 February 2020 and as late as 16 February 2020
The injuries were inflicted upon H by the mother and/or the father	The right rib fractures were caused inadvertently whilst H was at home under the care of his parents on 20 or 21 January 2020, or in hospital under the care of healthcare professionals during an attempted MRI head scan on 23 January 2020. The left rib fractures were

	caused inadvertently whilst H was at home under the care of his parents between 1 and 16 February 2020.
H sustained a 1.5 cm x 1 cm irregular bruise to the right side of his lower spine as a result of being left lying on his nasogastric tube for an inappropriately long period of time	H sustained a 1.5 x 1 cm irregular bruise to the right side of his lower spine as a result of his lying on a port attached to his nasogastric tube for a sufficient time to cause the bruise.
On an unknown date in November 2019 C's boyfriend attended at the family home. Upon seeing that C's boyfriend was at the address, the mother pulled C back into the house. An argument took place between C and her parents, during which each parent shouted at C. C became upset and was crying. The father hit C to the head, above the ear, twice, with a closed fist and using the side of his hand, causing her immediate pain. The mother was present in the room when this incident took place. Neither parent reported the incident to social care or the Police. Neither parent sought medical attention for C. C was caused emotional distress as a result of this incident	On an unknown date in November 2019 C's boyfriend attended at the family home. Upon seeing that C's boyfriend was at the address, the mother closed the door to keep him out and C inside the house. An argument took place involving C, D and the parents during which the father hit C to the head, above the ear, twice, with a closed fist and using the side of his hand, causing her immediate pain but no injury. The mother was present in the room when this incident took place. Neither parent reported the incident to social care or the Police but the incident was not sufficiently serious that they ought to have reported it. C did not require medical attention and did not suffer emotional or psychological harm as a result of the incident.
On an unknown date the father slapped E around the face	This allegation is not proved
The children have been exposed to domestic abuse perpetrated by the father. In particular by the father shouting and throwing objects	This allegation is not proved
On a date unknown the father broke the television at the family home in anger	This allegation is not proved
The parents have failed to consistently meet E's health needs. By way of example:- (a) E has missed medical appointments including with the	The parents have attempted to meet E's health needs but (a) E has missed a number of medical appointments including with the Community Paediatrician and the Orthopaedic team

Community Paediatrician, the Orthopaedic team and the dentist (b) The parents failed to ensure E consistently wore her Piedro boots to school, which were necessary to assist E with her balance (c) Since June 2019 E required an EpiPen which was not provided to school until January 2020; leaving E at risk should she go into anaphylactic shock	(b) The parents failed to ensure that E was consistently provided with Piedro boots necessary to assist her with her balance (c) Between August 2019 and January 2020 the parents failed to provide E's school with an indate EpiPen, but it is not proved that she would have been at risk of going into anaphylactic shock and thus at risk should that happen
The presentation of E and F has been inadequate. By way of example:- (a) E and F have attended at school with head lice on numerous occasions (b) E and F have presented as unkempt, unclean and smelling of urine (c) School has observed that F's belongings often smell of urine (d) The children's clothes have been obviously dirty	The presentation of E and F has sometimes been inadequate. By way of example:- (a) E and F have attended at school with head lice on numerous occasions (b) E and F have on occasions presented as unkempt, unclean and smelling of urine (c) School has observed that F's belongings smelt of urine on one occasion (d) The children's clothes have been obviously dirty on occasions
The father has failed to engage with social care	The father has failed to engage with some aspects of social care, specifically with CC. This is predominantly due to his mental health condition.
H has suffered physical and emotional harm and was at risk of suffering further harm in the joint care of the mother and father	H suffered physical harm, namely rib fractures, when in the joint care of the mother and father but was not at risk of suffering further harm in their joint care.
C, D, E, F and G suffered significant harm and are at risk of suffering significant harm in the care of the mother and father	The Local Authority has not proved this allegation

The Local authority relies on the aforesaid facts in satisfaction of the	The criteria are not met. In relation to H, the significant harm he suffered in the care of his parents, namely rib fractures,
criteria set out in section 31(2) Children Act 1989	was not attributable to their care not being what it would be reasonable to expect a parent to give to him. The findings of fact do not satisfy the criterion of significant harm in relation to the other children.

Appendix Two

Anonymised Persons

Anonymisation	Description of Person
C	Eldest daughter of the mother and father
D	Their second daughter
E	Their third daughter
F	Their fourth daughter
G	Their fifth daughter
H	Their son
J	C's boyfriend's mother
K	C's boyfriend's
L	The stillborn daughter of the mother and father
AA	Health Visitor
BB	Home Schooling Officer
CC	Allocated Social Worker
DD	Paediatric Consultant
EE	Neonatal Intensive Care Family Care Co-ordinator
FF	Neonatal Intensive Care Unit Lead Family Care Co-ordinator
GG	Health Visitor
HH	Consultant Hand and Plastic Surgeon
II	Consultant in Trauma and Orthopaedics
JJ	Consultant Radiologist
KK	Consultant Paediatrician
LL	Specialty Trainee in Paediatrics
MM	CT/MRI Radiographer
NN	Assistant Practitioner, Radiography
PP	Consultant Radiologist
QQ	Nursing Student
RR	Consultant Clinical Geneticist
TT	Paediatric Registrar
UU	Social Worker
VV	Locum Consultant Paediatrician
WW	Consultant Radiologist, Nottingham
XX	Prescribing Doctor
YY	Consultant Psychiatrist
ZZ	Student Health Visitor
AAA	Radiographer
BBB	Superintendent Radiographer
CCC	Staff Nurse

DDD	Nurse
EEE	Consultant Paediatrician
FFF	Paediatric Registrar
GGG	Consultant Paediatrician
HHH	Consultant Paediatrician
III	Paediatric Registrar
JJJ	GP trainee Doctor (hospital)
LLL	Staff Nurse
MMM	Lead Nurse, Paediatrics
NNN	Staff Nurse
PPP	Nursing Associate
QQQ	Occupational Therapist
RRR	Occupational Therapist
SSS	Occupational Therapist
TTT	Clinical Specialist Physiotherapist
VVV	Trust Safeguarding Lead
WWW	Paediatric Dietician
XXX	Geneticist
YYY	Social Worker
ZZZ	Parenting Assessment Practitioner
AAB	Occupational Therapist
AAC	Healthcare Assistant, Hand Clinic