Case No: ZC19C00356

IN THE IN THE HIGH COURT OF JUSTICE
FAMILY DIVISION

N/C [2020] EWHC 2502 (Fam)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 29/09/2020

Before:

THE HONOURABLE MR JUSTICE WILLIAMS

Re K - Threshold - Cocaine Ingestion - Failure to give evidence

- -

Between:

A Local Authority **Applicant**

- and -

The Mother
Father 1
Father 2
The Children

Respondents

- and -

The Maternal Grandmother
The Paternal Grandmother

Interveners

Mr William Tyler QC and Mr Tim Parker (instructed by the Local Authority Legal Dept) for the Local Authority
Ms Elizabeth Isaacs QC and Mr Mark Rawcliffe (instructed by Dawson Cornwell) for the Mother

Mr Mark Twomey QC and Ms Siobhan Kelly (instructed by TV Edwards) for Father 1
Ms Trisan Hyatt (instructed by Faradays Solicitors) for Father 2

Mr Cyrus Larizadeh QC and Ms Lucy Cheetham (instructed by Goodman Ray) for the Maternal Grandmother
Ms Tina Cook QC and Ms Joy Brereton (instructed by Powell Spencer and Partners) for the Paternal Grandmother
Mr Darren Howe QC and Ms Sally Stone (instructed by Creighton and Partners) for the Children

Hearing dates: 21, 23, 24, 27-30 April 2020, 1, 4-5, 11-12, 20 May 2020, 19, 24-26, 29-30 June 2020 and 1, 17, 27, 29 and 31 July 2020

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JUDGMENT

I direct that pursuant to FPR 27.9 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

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

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WILLIAMS J :

1. On 6th April 2019, K died in hospital. She was only three years of age when she died. A special post-mortem and toxicology tests indicated that her death was consistent with cocaine ingestion. Her death has led to both a police investigation by the Metropolitan Police and care proceedings commenced by the Local Authority in respect of K's siblings. This judgment addresses whether and if so how the Local Authority have established that the threshold for the making of public law orders is met.

2. The children who are the subject of the application are;

   i) L who is now rising 12,

   ii) M who is now aged five,

   iii) N who is now aged two,

   iv) P who is now aged 7months

Background

3. On 3rd April 2019, K returned home from nursery. Later, she was complaining of a tummy ache and was vomiting on and off throughout the night. The following day, 4th April, she did not go to nursery but was looked after by her paternal grandmother, whilst her mother took her sister to hospital to have a cast removed from her arm. When the mother returned, she noted that K's eyes looked puffy and she appeared sleepy and she took her to the GP. Her GP was concerned about her high heart rate and swollen face, suspecting sepsis. An ambulance was called, and K was taken to hospital. She was noted to be drowsy and poorly perfused, with tachycardia and slightly increased inflammatory markers. It was suspected that she might have sepsis or meningitis and antibiotics and antiviral drugs were given. A blood test grew no pathogens and the inflammatory markers improved. She remained tachycardic and drowsy, with fluctuating responsiveness and at one point, was noted to be fully responsive and sitting up in bed. However, in the early hours of the morning of 6 April, she had a sudden cardiac arrest and despite full CPR over about an hour, she did not recover and died.

4. The paediatric post-mortem investigation took place against the backdrop of a suspicion that K had had sepsis or meningitis. However, Dr Palm was concerned that some of the usual features associated with meningitis or sepsis were not present; there was no evidence from the brain of meningitis or encephalitis. There was no evidence suggestive of any pre-existing congenital or acquired natural illness or other medical condition that could have caused or contributed to her death. There was no evidence to indicate an ongoing overwhelming infection or sepsis. There were no traumatic injuries other than resuscitation related rib fractures. There was evidence of an acute mode of death, likely due to heart failure. The heart muscle showed necrosis. She returned to take hair samples from K.

5. Post-mortem toxicology screening detected the presence of cocaine and benzoylecgonine, a metabolite of cocaine. A urine sample also contained

benzoylecgonine. This discovery led to a Special Post Mortem being undertaken by Dr Cary and Dr Palm. The parents and grandmothers were arrested. Subsequently, hair strand testing of the adults and the children showed the presence of cocaine and its metabolites. The local authority commenced care proceedings and the three children were made subject to interim care orders and placed in foster care. P joined them when she was born, after care proceedings were issued in respect of her by the local authority. Those were ordered to be heard together with these proceedings by my order of 19th December 2019.

6. The case was listed before me for four weeks in order to determine whether the threshold criteria were met. The focus of the expert evidence was principally, albeit not exclusively, on whether K's death was caused by cocaine exposure and the extent of drug use of the parents and grandmothers. The other evidence was principally focused on the issues of drug use and domestic abuse.

7. The Local Authority is represented by Mr Tyler QC and Mr Parker, the mother by Ms Isaacs QC and Mr Rawcliffe, father 1 by Mr Twomey QC and Ms Kelly, the father of the oldest child (father 2) by Ms Hyatt, the paternal grandmother by Ms Cook QC and Ms Brereton, the maternal grandmother by Mr Larizadeh QC and Ms Cheetham and the children by Mr Howe QC and Ms Stone.

These Proceedings

8. The final hearing was listed for 20 days to commence on 21st April 2020. On 13th March 2020, the case was listed for a further case management hearing in advance of the listed final hearing. At that stage, the Local Authority initially advanced an application seeking to adjourn the final hearing on the basis that aspects of the evidence were unlikely to be sufficiently clear or complete so as to enable a final hearing to proceed. However, the adjournment application was not advanced when it became clear that the court would be unable to hear the case until, at worst (and most probably), early 2021 or at best (and unlikely), October 2020. The matter was listed for a final case management hearing on 3 April 2020.

9. Between 13th March and 3rd April, the coronavirus pandemic intervened and so on 3rd April, what had been envisaged as a case management hearing to make final adjustments to the arrangements for the fact -finding hearing, was transformed into a remote hearing which in itself addressed the issue of whether the final hearing, could proceed as a remote hearing. At that hearing, all parties were in agreement that the fact-finding hearing should take place remotely and it appeared that arrangements could be put in place for all of the parties, the legal teams, the witnesses and the court to undertake a fair hearing by remote means.

10. By the time the case commenced on 21st April 2020, the parties' positions had developed. On that day the decision of the President of the Family Division in Re P (A Child) (Remote Hearing) [2020] EWFC 32 was handed down.

11. The hearing to determine the Threshold commenced on 21st April 2020, I heard evidence from the 7 experts. On the 15th May 2020 I adjourned the proceedings to resume in late June. That was to enable the mother to attend in person to give oral evidence; it also allowed father 1 some further time to re-assure himself it would be safe to attend to give oral evidence. I delivered a judgment A Local Authority v The Mother & Ors [2020] EWHC 1233 (Fam) (15 May 2020) which sets out the progress of the hearing up until that point. I shall not repeat it. That was appealed by the mother to the Court of Appeal who dismissed the appeal: C (Children : Covid-19: Representation) [2020] EWCA Civ 734 (10 June 2020).

12. Arrangements were made by the parties and the court for a hybrid hearing which permitted the parents and PGM to give evidence before me in person and to enable them to see each other give evidence, with some of the advocates being present and others participating remotely. On 24th June, I heard evidence from the maternal grandmother; it had been intended that the mother would give evidence on the 25th June but, on the 24th June, she took an overdose of (I was told) antidepressants and was admitted to hospital. On the 25th June, the hospital confirmed she was an inpatient and in need of ongoing medical monitoring and assessment by the mental health team, requiring at least a further 24 to 48 hours of inpatient management. As a result, the scheduling of the witnesses was rearranged so that the paternal grandmother gave evidence on 25th June and the father on the 26th and 29th of June. It had been hoped that the mother might have been able to give evidence at some point in the week commencing 29th June but, although she was discharged from hospital, arrangements were being pursued to admit her to a crisis unit and by 1st July, her treating psychiatrist, provided a brief report confirming that, in her opinion, she did not believe the mother then had capacity to instruct her legal team. She said that the mother was experiencing a depressive episode, presenting as low in mood and anxious and was to commence antidepressant medication, as well as accessing counselling. It was therefore, not possible for the mother to give evidence and to complete the case. Given the difficulties that had been experienced in securing clear information as to the mother's medical position, I provided for the instruction of a single joint expert, Dr McEvedy. The case was adjourned to the week commencing 27th July, in the hope that the mother would by then be able to give evidence, either at an attended hearing or at least remotely.

13. Dr McEvedy provided a capacity certificate and a report on 20th July 2020. He assessed the mother on 20th July, and confirmed that, in his opinion, the mother was capable of conducting the proceedings, albeit the mother told him she did not feel able to take part in the proceedings. His opinion was that, whilst participation would be challenging for the mother, she demonstrated capacity and was able to give evidence, albeit any cross examination should be conducted with as much sensitivity as possible. Somewhat to my surprise given what all concerned had been told earlier, he recorded that the mother had taken an overdose of antidepressants with alcohol and cocaine. The mother told him that this had been with suicidal intent. When he saw her, she had not further harmed herself although later that week a further episode of self-harm was recorded by the unit staff. He was unable to offer her a likely diagnosis or diagnoses as he had not had access to her psychiatric or medical records, but noted that from the information he had seen and from her own account, she had a substance misuse disorder as well as whatever illness or personality difficulty which gave rise to her recent crisis.

14. The mother filed a statement on 22nd July in which she said that she did not feel she was in a position to give evidence as she was not in the right frame of mind. She said she was extremely muddled and confused and that her mind had blocked out much of what happened, although this was not consistent with Dr McEvedy's findings. She said in her statement, that she did not foresee her mental health improving in the near future and that she needs help and time to focus on herself. As a result, she said that she was not in a position to care for the children, although was not giving up on them. She said that, as she needed time to help herself, she considered that it was best that the children be placed with her sister. She said in that statement that she knew she had not been fully honest about her past drug use, although I note that she does not refer to having consumed cocaine in relation to the recent admission to the hospital. On 24th July 2020, each of the parties informed the court that, in view of the mother's position, no party sought to compel her to give evidence and that they were prepared to proceed on the basis of her tape-recorded interviews and her statements.

Threshold

15. At the commencement of the case the Threshold Criteria relied upon by the Local Authority contained, in broad terms, the following elements;

    i) That K died as a consequence of cardiac necrosis caused by the deliberate administration or accidental ingestion of cocaine by or whilst in the care of

        a) her mother, the first respondent, and or

        b) her father [father 1], the second respondent, and or

        c) her paternal grandmother, and or

        d) her maternal grandmother

    ii) that one or more of those four individuals alternatively failed to protect her from the administration or accidental ingestion of cocaine

    iii) that the children were exposed to emotional abuse as a result of domestic violence perpetrated by father 1 upon the mother.

16. The parents and the grandmother's responses to the threshold at that stage in summary were

    i) Mother – filed 11th May 2020:

        a) Reserved her position as to whether cocaine ingestion was the cause of K's death or whether her death was consistent with cocaine intoxication.

        b) Accepted her own use of powder cocaine every 4 to 6 weeks during the 12-month period leading up to February 2019 but no use thereafter.

        c) Accepted repeated consumption of cocaine by father 1 on a daily basis.

d) Accepted that K was exposed to and/or ingested cocaine whilst in the care of the mother, father 1 or paternal grandmother.

e) Denied deliberate administration of cocaine to K by herself.

f) Did not accept being knowingly responsible for culpably failing to protect the children from being exposed to drugs.

g) Accepted L was suffering significant emotional harm and that the children were likely to be suffering significant physical and emotional harm by virtue of their exposure to cocaine and domestic abuse in the form of loud arguments and volatility and occasional physical abuse by father 1 to the mother.

h) That she felt unable through fear of violence from father 1 to do more to protect K and the other children. She alleged that she has been consistently subjected to violence and threatened with violence throughout most of the relationship, whenever she tried to confront father 1 about his drug use or asked him to leave.

ii) Father 1

a) Accepted the presence of cocaine in K, that her death was consistent with cocaine intoxication but not that, on the balance of probabilities, cocaine was the cause of K's death.

b) Accepted a limited role in caring for K, in the days and months preceding her death.

c) Accepted his own repeated consumption of cocaine in the 12-month period prior to July 2019. He denied being a dealer.

d) Denied administering cocaine to K or causing her to ingest, or any negligence in his or others care of her. He also denied negligently failing to protect her, his position was the same in relation to the exposure of the other children to cocaine or cannabis.

e) He accepted arguments between himself and the mother (which the children would have witnessed) and that she asked him to leave the property from time to time. He denied physicl abuse.

f) He denied that the children had suffered significant harm by virtue of being exposed to domestic abuse although accepted they may have suffered emotional harm as a result of hearing arguments.

iii) MGM

a) Accepted the presence of cocaine in K's hair and urine and awaited the cardiologist's opinion in relation to cause of death.

b) She denied being involved in the care of K in the days or months preceding her death or playing any role in K being exposed to cocaine, whether deliberately or inadvertently.

c) She denied any role in the exposure of the other children to drugs.

d) She said she was unaware of drug use by the parents.

e) She agreed that the children had been exposed to domestic abuse between father 1 and the mother.

iv) PGM

a) She accepted the presence of cocaine in K's urine and hair but awaited expert evidence in relation to the cause of death.

b) She accepted caring for K in the days and months preceding her death.

c) She accepted that the mother and father 1 had repeatedly consumed cocaine in the 12-month period preceding July 2019.

d) She denied consumption of cocaine herself and attributed her hair strand tests to environmental exposure.

e) She denied any role in K ingesting cocaine.

f) She denied any role in any of the other children being exposed to cocaine.

17. Following the conclusion of the expert evidence, the local authority reviewed the way in which the threshold was put. On Monday, 4th May the Local Authority filed an amended threshold. This contained a very significant change in the nature of the allegations. The Local Authority replaced the allegation that cocaine had been administered, or negligently ingested, with an allegation that cocaine was ingested whilst in the care of and due to the culpable actions or neglect of either the mother, the father or the paternal grandmother. Alternatively, they culpably failed to protect her from the same. Thus, although still an extremely serious allegation with potential criminal ramifications, it was significantly less serious than before. The Local Authority no longer pursued findings in respect of the maternal grandmother; accepting that the hair strand testing and screening of her home were consistent with exposure to drugs from others' actions.

18. The positions of the parties in relation to the amended threshold were that they maintained their positions, save that the mother, father 1 and the paternal grandmother all responded to the effect of the expert evidence and the redrafted threshold. All accepted that K had ingested cocaine at some point, which had caused cardiac necrosis, which led to her death. However, the parties all made clear that the circumstances in which she had come to ingest that cocaine remained very much in issue, together with the very significant issues between the lay parties that had emerged from their witness statements.

The Parties' Submissions

19. Over the course of the three months which this case has taken to reach its conclusion, I have received extensive oral and written submissions from the opening notes in April through to closing submissions on 29nd July. They have included detailed and extensive submissions on the evidence as it originally stood and as it has been refined or developed over the course of the trial. I am extremely grateful for the time that all of the legal teams have dedicated to presenting their clients' cases, whilst also assisting the court. I cannot hope to fully reflect the depth and breadth of those submissions in this judgment. To do so would make what is already a very lengthy judgment nigh on impossible to navigate or digest. Most of the parties' cases revolve around the interpretation of the evidence, which I set out at length later in this judgment and to summarise the evidence the parties rely on would involve extensive duplication. I will address some of the evidential points and submissions in my survey of the evidence and in my analysis, but even those cannot fully incorporate all that has been said or written. I have attempted to focus on what seem to me to be the essential arguments and evidential points, so as to enable the parties to understand why I have come to the conclusions that I have, rather than to deal with each and every point made. The essential elements of the parties' cases, in support of their position in respect of the threshold, I attempt to summarise below.

20. The Local Authority's central arguments are:

    i) The mother's failure to give evidence should not lead the court to attach no weight to the mother's evidence. A more nuanced approach is required given the mother's situation.

    ii) The medical evidence established that K's death was caused by heart failure, arising out of cardiac necrosis, caused by ingestion of cocaine.

    iii) Hair strand testing evidence demonstrates that the mother, father 1 (repeatedly) and paternal grandmother had consumed cocaine, including smoked crack cocaine, in the 12-month period preceding July 2019. The Chemtox samples can be relied upon and the different results from Lextox can be explained, both by the fact that the hair sample was not the same (being separated by some 10 weeks growth) and by the possibility of interference.

    iv) The mother's lies about her own use, means her account cannot be relied upon but her evidence about father 1 being a drug dealer is contrary to her interest.

    v) The totality of the evidence supports the presence, on a regular basis, of drugs in the household of the mother and the paternal grandmother.

    vi) Hair strand testing of the children shows that they were exposed to cocaine. For L, this would be in the mother's household and for M and K, in both the mother and paternal grandmother's households.

    vii) Each of the adults knowingly exposed the children to risks associated with drug exposure and have culpably failed to protect them.

viii) The evidence supports K's exposure as having occurred whilst in the mother's home. The medical evidence is more supportive of her ingesting the cocaine at some point after leaving nursery on 3rd April but cannot rule out exposure during the day on the fourth, when in the care of the paternal grandmother and father 1. The symptoms of illness that she demonstrated on the third and fourth prior to being taken to the GP, are non-specific and do not pin down the timing of her exposure. None of the accounts of the adults explain how she came to ingest the cocaine that killed her. It is therefore difficult to identify how it occurred and perhaps does not matter precisely how. It is not a tragic accident, but a highly culpable event. Both the mother and father 1 culpably failed to bring their use of cocaine to the attention of the hospital. Had they done so, tests might have been carried out which could have prevented her death

ix) The mother's evidence can be relied on in relation to father 1's drug dealing. His history in terms of his antecedents and his evidence are consistent with him being a drug dealer. The other evidence from L and the covert recordings supports this interpretation.

x) There was a level of domestic abuse in the parents' relationship, but not to the extent that the mother now maintains where she says she was unable to address father 1's frequent drug use and the consequent exposure of K to it. Her account has developed over time, with no reference to domestic abuse in her first interview. The other evidence from the maternal grandmother and L do not support a high level of violence, but rather a deteriorating relationship linked to father 1's growing alcohol and drug use, but not one which prevented the mother from protecting the children. The absence of evidence from any other source undermines the mother's account.

21. The mother's central arguments are:

i) She does not now seek the return of the children to her care but accepts that a full psychiatric assessment of her will be required.

ii) The court should take into account her evidence and the reason for her failure to give evidence and the circumstances in which her evidence was given.

iii) The timing of K's ingestion of the cocaine which led to her death is difficult to determine, save that it occurred prior to her attendance at the GP on the fourth. The evidence, in particular the phone records, convincingly show that father 1 was present in the home on the evening of the third and overnight into the fourth. The court should not rule out the possibility that it was ingested during the period when K was in the care of father 1 and paternal grandmother. The lack of detail in their accounts and, in particular, their behaviour later that day is highly suspicious. Their failure to seek medical attention for K, when they said they considered her to be very unwell, does not withstand proper scrutiny. The paternal grandmother's failure to return the mother's calls that evening is not properly explained; nor is the father's failure to attend hospital. Did they know something, which was why they behaved as they did?

iv) The mother's behaviour in immediately taking K to the doctors is inconsistent with an individual who was concerned that a child had consumed illegal drugs.

The evidence does not support the mother being aware of K having ingested cocaine

v) The Local Authority must prove that the Chemtox reports, which show an increasing and high usage in respect of the mother's drug use, are more persuasive than the Lextox reports, which show a declining usage. The later Lextox reports are consistent with the earlier Lextox reports. The results provided by Chemtox, after the conclusion of the evidence are unsatisfactory and the court should rely on the better evidence of the Lextox reports. The Local Authority must prove that the mother interfered with her hair if the court is to prefer the Chemtox report. They cannot do that and it is improper to infer or speculate as to how the mother might have acquired the knowledge of how to influence a drugs test. By July 2019, when the directions hearing took place, she was unaware that a further drug test might occur, she undertook not to interfere with her hair and the opportunity to do so between the direction and the taking of the sample was limited. Her evidence should be accepted on this.

vi) In respect of the mother's account of father 1's drug use, she has nothing to gain from this, her evidence has evolved but the court can still rely on it. Father 1 is dishonest, he denied drug use during an earlier assessment and was subsequently found to be using drugs.

vii) The two youngest children's hair samples show the presence of crack cocaine which L's does not. L did not visit the paternal grandmother's save on one occasion. It is more likely that the children were exposed to crack cocaine at the paternal grandmother's home.

viii) The evidence supports the conclusion that father 1 subjected the mother to serious and significant domestic abuse which prevented her from leaving the relationship or doing more to protect the children from exposure to his drug use. The chronology supports him having a violent aspect; he has been violent to previous partners, to his brother, to property, has convictions, his mother told another Local Authority that he had a violent character and the mother reported abuse to the paternal grandmother and his abusive behaviour is also evidenced by L and by the maternal grandmother who saw physical damage to the property.

22. Father 1's central arguments are:

i) The evidence supports the conclusion that K ingested cocaine at the mother's home, whilst under her care and control; that it was her cocaine (she being a significant consumer) probably kept in her bedroom drawer and at all times under her control. It explains why she lied and lied again as to her true levels of drug use and why she has made serious allegations against father 1.

ii) Father 1 has suffered the loss of his daughter and his children. The court should not lose sight of the emotional impact on him and the effect it may have had on his recall.

iii) Father 1 has not sought to compel the mother to give evidence and does not invite the court to draw inferences against her, but rather to urge the court not

to rely on her evidence, against him. The mother clearly could have given evidence even though she is unwell. The court therefore should give little, if any, weight to her written evidence which has not been challenged by cross examination, in respect of which there are many inconsistencies which are now unexplained and where to ensure fairness for father 1, who has been rigorously cross-examined, caution should be applied to the mother's evidence.

iv) The court should bear in mind that she would have been cross-examined on, amongst others, the following points: why she initially gave accounts on 6th April and shortly thereafter which pointed to father 1 being absent and playing no significant role in childcare; why she spoke well of him in initial accounts; why she only makes allegations against father 1 after her first interview and after she has taken legal advice; why she only mentions father 1's role in drugs during her interviews in July after she has been arrested for murder; why she made no reports of domestic abuse to any health professionals, to police or any other authority; how the maternal grandmother was never aware of it; why she made no drugs allegations against father 1 when it was initially disclosed that K had cocaine in her system; how her account can be relied on when she repeatedly misled the court as to her own drug consumption; what she may have said to L to influence her account.

v) Father 1 gave evidence and his evidence should be relied on. He should be given credit for attending and giving evidence remotely, whilst still unwell. His evidence has been rigorously challenged and it is hardly possible to fairly compare his evidence with the mother's.

vi) The evidence does not support father 1 living at the property or spending considerable time there, particularly as a primary carer. Her initial accounts are most likely to be accurate: the account given to DC Lockstone is a reliable account and does not place father 1 as living in the property, or being present in the property at the time cocaine was probably ingested. Her later accounts which draw him into the household have not been tested. He is unlikely, therefore, to have left cocaine at the property which K consumed. As the principal occupant, the cocaine was more likely to be the mother's. Father 1 has been frank about his drug use, whereas the mother has not been. This should lead the court to conclude it is more likely the mother who was the source of the cocaine. The mother's developing case of seeking to attribute blame to father 1 is an attempt to distance herself and to seek an excuse for her behaviour

vii) The mother's early accounts depicted a positive relationship between herself and father 1; they portrayed him as a good father. The mother's account of domestic abuse is largely reliant on her own evidence. What is described by the grandmothers is not abuse of a sort that should concern this court: Re A (A Child), Re (Rev 1) [2015] EWFC 11. What the mother said to the maternal grandmother, the absence of any complaint to police in the early interviews and the nature of the cross examination of father 1 all suggest the mother's account of domestic abuse is fabricated.

viii) The evidence as to father 1 being a drug dealer is principally based on the mother's evidence; the absence of any of the paraphernalia or any other signs

of drug dealing is significant. Father 1 is not found with drugs, there are no accounts, no large sums of cash, no text messages indicating deals or anything else. The police intelligence put him as a courier of cannabis which would not be consistent with dealing and cutting cocaine. L's untested account is unreliable and it seems there were discussions before the ABE interview and she was led into saying significant parts of what is relied on to show father 1 as a drug dealer.

23. Father 2's case is to support the Local Authority's analysis.

24. The paternal grandmother's essential arguments are:

i) Considerable reliance is placed on the expert evidence as to the significance of K's symptoms in terms of timing the ingestion of the cocaine.

ii) The weight of the evidence relating to the timing of the ingestion of cocaine, points away from the three-hour window when the paternal grandmother was caring for K between about 1.20 and 4.30 on the fourth. She is not therefore culpable for K's death. Even if the court concludes she is a drug user (which is denied) and her house is used for drug consumption, it does not make her culpable for K's death.

iii) K's symptoms of a tummy ache, vomiting, a high temperature, puffy eyes are not non-specific, when one knows that she died of cardiac necrosis caused by cocaine ingestion. All of them are said by the medical experts to be consistent with cocaine ingestion and oedema arising from deteriorating heart function. Both Dr Hawcutt and Prof Bu'Lock considered the clinical picture supported the ingestion of cocaine at some point after K left nursery and prior to the grandmother's arrival on the fourth.

iv) The scientific and medical evidence together, pointed to her consuming the cocaine between two and three days prior to her death. In particular the detection of BZE in urine, but its absence from blood on the 5th, was consistent with consumption on 3rd April, when she was taken ill in the evening.

v) The evidence does not support there being a significant deterioration in her condition between the mother leaving to take L to the hospital and her return. The mother said when the grandmother arrived that she would take K to the doctors later that day.

vi) Her account of the day of the fourth can be relied upon. She is a caring granny who would have taken K to hospital had she been aware of an incident which put K at risk.

vii) The drug testing results from Chemtox are not consistent with Lextox. The paternal grandmother is clear that she did not use cocaine and the court should rely on her account. She is also clear that she did nothing to interfere with her hair. There is nothing to show that she was aware that one could cheat a drugs test. The drugs tests and the drug mapping support the conclusion that the lodger and the father were both heavy users in her household and this explains her Lextox hair strand test results which Dr Cirimele accepts are consistent

with exposure rather than consumption. She was unaware of the extent of their drug usage in her house. The historic evidence is hearsay and double hearsay which does not support any recent link between the paternal grandmother and drugs. Evidence dating back to 2002 is of little or no probative value now, particularly when it is hearsay or double hearsay. The covert recordings do not suggest she knew anything about K ingesting cocaine.

viii) She is the only person who willingly gave evidence and she should be given credit in terms of her credibility for this.

25. The maternal grandmother's submissions focused on the evidence she gave and about her which pointed to her innocent exposure to cocaine and her relatively limited involvement in the mother's household at the relevant time. The effect of the scientific evidence relating to drugs led to the Local Authority accepting that the maternal grandmother played no role in K's ingestion of cocaine and thus she ceased to have intervener status.

26. The Guardian's central arguments are:

i) A more nuanced response to the mother's failure to give evidence is required and the authorities support this. One cannot simply give no weight to her evidence.

ii) The evidence establishes that the mother and father 1 had periods of high conflict in their relationship. However, the evidence of a seriously abusive relationship is questionable. She did not report any domestic abuse to her GP, or to her health visitor and her allegations arose only in her interview with the police on 16th July 2019. Much of her earlier evidence, for instance about the dog biting father 1, could have gone further and made allegations but did not. The maternal grandmother knew nothing of it, albeit she was aware of a toxic relationship between the two. Is the evidence sufficient to establish the mother's case that she was so fearful of father 1 that she was unable to leave him, unable to prevent him storing cocaine at her home and unable, by reason of fear, to protect the children from his behaviour? The children did suffer significant emotional harm as a result of exposure to conflict in the relationship but the court should be cautious about making findings to the extent the mother alleges.

iii) The evidence supports the conclusion that father 1 sold cocaine; L's interview; the mother's evidence of his activities; his previous convictions; the evidence of the covert recording in particular his admission of ownership of the paper wraps. The court can also conclude that the paternal grandmother knew of father 1's dealings; there is no other interpretation for the covert recording conversations. She condoned the mother and father 1's use of drugs by caring for the children so they could consume. She was relaxed about discussing drugs with her son. The evidence of her familiarity with drugs and ease around them should inform the court's assessment of the hair strand testing. The Chemtox results can be relied upon and the court should note that these hair strand samples were taken when the parties had almost no notice of samples being taken due to the police interest in cocaine having been involved in K's death. The drug mapping which found traces of cocaine all over the paternal

grandmother's home supports a picture in its entirety which supports the Chemtox results being accurate.

iv) The court should also conclude that the Chemtox results for the mother were accurate for the same reasons. Her evidence of her own drug use and that of father 1 has been inconsistent and variable and cannot be relied on save that it accepts cocaine use. This also includes crack cocaine which was found in mother's hair, the grandmothers', the father's, the lodger's, Q's and M's.

v) Medical evidence as to the timing of the ingestion was not clear. Prof Bu'Lock's evidence did not clearly indicate any particular timing and nor was it conclusive as to K's symptoms during the day of the fourth. The evidence of father 1 and paternal grandmother as to the fourth and their responses in the evening of the fourth should be rejected. However, what the consequence of that is, uncertain. All that can be said for sure is that K came into contact with the cocaine at the mother's home. The court should not go further than saying that K ingested the cocaine at some point between teatime on 3 April and the mother's return home at about 4:30 PM.

vi) Father 1's evidence as to his activities on the night of the 3rd/4th was wholly unreliable, but the evidence is not sufficiently clear for the court to conclude that K came upon the cocaine at some point overnight on 3rd April and before the arrival of the paternal grandmother at 11 am

vii) The evidence supports a conclusion that it was father 1's activities that resulted in cocaine being in the house.

viii) The evidence demonstrates that the mother sought to protect father 1 in the early days of the police investigation. She was not forthcoming with evidence about his activities until July 2019. She failed to protect the children during her relationship with father 1 if her account of the extent of domestic abuse is rejected and she protected him thereafter. The paternal grandmother also failed to protect the children if she was aware of the extent of father 1's drug dealing and the use of cocaine by the parents.

The Law

The burden and standard of proof

27. In order to make a care or any public law order the Local Authority must prove that the situation justifies the intervention of the State. This means that the Local Authority must establish the statutory threshold set out in s.31(2) Children Act 1989.

> *(2) A court may only make a care order or supervision order if it is satisfied –*
>
> *(a)that the child concerned is suffering, or is likely to suffer, significant harm; and*
>
> *(b)that the harm, or likelihood of harm, is attributable to –*

> *(i)the care given to the child, or likely to be given to him if the order were not made, not being what it would be reasonable to expect a parent to give to him; or*
> *(ii)the child's being beyond parental control.*

28. In respect of the task of determining whether the 'facts' have been proven, the following points must be born in mind, as referred to in the guidance given by Baker J in *Re L and M (Children)* [2013] EWHC 1569 (Fam) confirmed by the President of the Family Division in In the Matter of X (Children) (No 3) [2015] EWHC 3651 at paragraphs 20 – 24. See also the judgment of Lord Justice Aikens in Re J and *Re A (A Child)* (No 2) [2011] EWCA Civ 12, [2011] 1 FCR 141, para 26

29. The burden of proof is on the Local Authority. It is for the Local Authority to satisfy the court, on the balance of probabilities, that it has made out its case in relation to disputed facts. The parents have to prove nothing and the court must be careful to ensure that it does not reverse the burden of proof. As Mostyn J said in [Lancashire v R 2013] EWHC 3064 (Fam), there is no pseudo-burden upon a parent to come up with alternative explanations [paragraph 8(vi)].

30. The standard to which the Local Authority must satisfy the court is the simple balance of probabilities. The inherent probability or improbability of an event remains a matter to be taken into account when weighing probabilities and deciding whether, on balance, the event occurred [Re B (Care Proceedings: Standard of Proof) [2008] UKHL 35 at paragraph 15]. Within this context, there is no room for a finding by the court that something might have happened. The court may decide that it did or that it did not [Re B at paragraph 2]. If a matter is not proved to have happened I approach the case on the basis that it did not happen

31. Findings of fact must be based on evidence, and the inferences that can properly be drawn from the evidence, and not on speculation or suspicion. The decision about whether the facts in issue have been proved to the requisite standard must be based on all of the available evidence and should have regard to the wide context of social, emotional, ethical and moral factors [A County Council v A Mother, A Father and X, Y and Z [2005] EWHC 31 (Fam)].

32. The court is not limited to considering the expert evidence alone. Rather, it must take account of a wide range of matters which include the expert evidence but also include, for example, its assessment of the credibility of the witnesses and the inferences that can properly be drawn from the evidence. The court must take into account all the evidence and furthermore consider each piece of evidence in the context of all the other evidence. The court invariably surveys a wide canvas. A judge in these difficult cases must have regard to the relevance of each piece of evidence to other evidence and to exercise an overview of the totality of the evidence in order to come to a conclusion.

33. Thus, the opinions of medical experts need to be considered in the context of all of the other evidence. Appropriate attention must be paid to the opinion of medical experts, those opinions need to be considered in the context of all the other evidence. It is important to remember that the roles of the court and the expert are distinct and it is the court that is in the position to weigh up the expert evidence against its findings on the other evidence. It is the judge who makes the final decision. Cases involving

allegations of this nature often involve a multi-disciplinary analysis of the medical information conducted by a group of specialists, each bringing their own expertise to bear on the problem. The court must be careful to ensure that each expert keeps within the bounds of their own expertise and defers, where appropriate, to the expertise of others. When considering the medical evidence in cases where there is a disputed aetiology giving rise to significant harm, the court must bear in mind, to the extent appropriate in each case, the possibility of the unknown cause [R v Henderson and Butler and Others [2010] EWCA Crim 126 and Re R (Care Proceedings: Causation) [2011] EWHC 1715 (Fam)]. Today's medical certainty may be discarded by the next generation of experts. Scientific research may throw a light into corners that are at present dark. "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."

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

35. When seeking to identify the perpetrators of non-accidental injuries, the test of whether a particular person is in the pool of possible perpetrators is the balance of probabilities [Re S-B (Children) [2009] UKSC 17]. It is always desirable, where possible, for the perpetrator of non-accidental injury to be identified both in the public interest and in the interest of the child. Where it is impossible for a judge to find on the balance of probabilities, for example that parent A rather than parent B caused the injury, neither can be excluded from the pool and the judge should not strain to do so [Re D (Children) [2009] 2 FLR 668 and Re S-B (Children)]. Where a perpetrator cannot be identified, the court should seek to identify the pool of possible perpetrators on the basis of the real possibility test, namely that if the evidence is not such as to establish responsibility on the balance of probabilities, it should nevertheless be such as to establish whether there is a real possibility that a particular person was involved. When looking at how best to protect child and provide for his future, the judge will have to consider the strength of that possibility as part of the overall circumstances of the case [Re S-B (Children) at paragraph 43]. Finally, when seeking to identify the perpetrators of non-accidental injuries the test of whether a particular person is in the pool of possible perpetrators is whether there is a likelihood or a real possibility that he or she was the perpetrator. In order to make a finding that a particular person was the perpetrator of non-accidental injury the court must be satisfied on a balance of probabilities. It is always desirable, where possible, for the perpetrator of non-accidental injury to be identified both in the public interest and in the interest of the child, although where it is impossible for a judge to find on the balance of probabilities, for example that Parent A rather than Parent B caused the injury, then neither can be excluded from the pool and the judge should not strain to do so

Lies/Withholding Information

36. It is common 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 at all times that a witness may lie for many reasons, such as shame, misplaced loyalty, panic, fear, and distress. The fact that a witness has lied about some matters does not mean that he or she has

lied about everything [R v Lucas [1981] QB 720]. It is important to note that, in line with the principles outlined in R v Lucas, it is essential that the court weighs any lies told by a person against any evidence that points away from them having been responsible for harm to a child [H v City and Council of Swansea and Others [2011] EWCA Civ 195].

37. The Family Court should also take care to ensure that it does not rely upon the conclusion that an individual has lied on a material issue as direct proof of guilt but should rather adopt the approach of the Criminal Court, namely that a lie is capable of amounting to corroboration if it is (a) deliberate, (b) relates to a material issue, and (c) is motivated by a realisation of guilt and a fear of the truth [Re H-C (Children) [2016] EWCA Civ 136 at paragraphs 97-100].

38. In Lancashire County Council v The Children [2014] EWFC 3 (Fam), at paragraph 9 of his judgment and having directed himself on the relevant law, Jackson J (as he then was) said:

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

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

40. Although the general approach is that any fact which needs to be proved by the evidence of witnesses is generally to be proved by their oral evidence (r22.2(1)(a) FPR 2010) facts may also be proved by hearsay evidence. The effect of Children Act 1989 s.96(3), Children (Admissibility of Hearsay Evidence) Order 1993 is to make all evidence given in connection with the welfare of a child admissible notwithstanding

its hearsay nature. This would commonly include Local Authority case records or social work chronologies which are very often hearsay, often second- or third-hand hearsay but also extends to witness statements. The court should give it the weight it considers appropriate: Re W (Fact Finding: Hearsay Evidence) [2014] 2 FLR 703 and where hearsay goes to a central issue the court may well require the maker of the hearsay statement to attend to give oral evidence.

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

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

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

(1) In certain circumstances a court may be entitled to draw adverse inferences from the absence or silence of a witness who might be expected to have material evidence to give on an issue in an action.

(2) If a court is willing to draw such inferences they may go to strengthen the evidence adduced on that issue by the other party or to weaken the evidence, if any, adduced by the party who might reasonably have been expected to call the witness.

(3) There must, however, have been some evidence, however weak, adduced by the former on the matter in question before the court is entitled to draw the desired inference: in other words, there must be a case to answer on that issue.

(4) If the reason for the witness's absence or silence satisfies the court then no such adverse inference may be drawn. If, on the other hand, there is some credible explanation given, even if it is not wholly satisfactory, the potentially detrimental effect of his/her absence or silence may be reduced or nullified.

43. I consider that the approach outlined by Brooke LJ more fully reflects the proper approach. These are inquisitorial proceedings rather than adversarial, where the welfare of the children is at stake and where the authorities on fact-finding require the court to survey all the evidence and to avoid compartmentalisation. The legislative framework allows for the admission of hearsay evidence. The approach to lies in *Lucas* requires a more measured approach. At one end of the spectrum, there will no doubt be cases where the court is satisfied that a person has deliberately refused to come to court to support their written statement and where there is no excuse or explanation. In that scenario, the court might take a bright line approach and refuse to place any weight on any of their evidence and draw inferences against them that any allegations are true. In other cases, the court will need to consider the circumstances

of their failure to give evidence, any explanations offered or which present themselves and the evidence itself and the issues it goes to. Where there is compelling evidence explaining an inability to attend full weight might be given and no inferences drawn. In between will be cases where the court might determine it is appropriate to rely on and give weight (even full weight) to some evidence but not to other evidence and to draw some but not necessarily all possible inferences.

Drug Testing

44. In Re-H (hair strand testing) [2017] EWFC 64 Mr Justice Peter Jackson (as he then was) considered the relevance of hair strand testing. He reviewed the previous cases at paragraph 26 and set out 12 propositions which were agreed between the expert witnesses in that case. Many, perhaps all are reflected in the evidence given in this case by Dr Cirimele and Professor Forrest. I note that those 12 propositions relate to adults.

"[40] *In my view, the variability of findings from hair strand testing does not call into question the underlying science, but underlines the need to treat numerical data with proper caution. The extraction of chemicals from a solid matrix such as human hair is inevitably accompanied by margins of variability. No doubt our understanding will increase with developments in science but, as matters stand, the evidence in this case satisfies me that these testing organisations approach their task conscientiously. Also, as previous decisions remind us, a test result is only part of the evidence. A very high result may amount to compelling evidence, but in the lower range numerical information must be set alongside evidence of other kinds. Once this is appreciated, the significance of variability between one low figure and another falls into perspective.*

I must say something about the reporting of test results as being within the high/medium/low range. In fairness to the testing organisations, this practice has developed at the request of clients wishing to understand the results more easily. The danger is that the report is too easily taken to be conclusive proof of high/medium/low use, when in fact the actual level of use may be lower or higher than the description. You cannot read back from the result to the suspected use. Two people can consume the same amount of cocaine and give quite different test results. Two people can give the same test result and have consumed quite different amounts of cocaine. This is the consequence of physiology: there are variables in relation to hair colour, race, hair condition (bleaching and straightening damages hair), pregnancy and body size. Then there are the variables inherent in the testing process. Dr McKinnon explained that there is therefore only a broad correlation between the test results and the conclusions that can be drawn about likely use and that it should be recognised that in some cases (of which this is in his opinion, one) there will be scope for reasonable disagreement between experts.

[47] Having considered the evidence in this case, I arrive at the same conclusion as Hayden J in Re R, where (at paragraph 50) he preferred "a real engagement with the actual findings" to "a strong insistence on a 'clear line' principle of interpretation". I accept the evidence of the witnesses for the testing companies that when one analyses thousands of tests, patterns can emerge that help when drawing conclusions. It would be artificial to require valid data to be struck from the record because it falls below a cut-off level when it may be significant in the context of other

findings. That would elevate useful guidelines into iron rules and, as Dr McKinnon says, increase the number of false negative reports. What can, however, be said is that considerable caution must be used when taking into account results that fall below the cut-off level.

The Evidence

45. The documentary evidence is contained within the electronic bundles provided via the case lines system. It amounts to something in excess of 8000 pages. It was rendered more accessible both by the electronic system itself but also by the provision of;

    i) a detailed chronology.

    ii) a schedule of matters agreed and not agreed between the medical experts.

    iii) a schedule of drug testing results.

46. Oral evidence was heard from;

    i) Dr Cirimele

    ii) Professor Forrest

    iii) Dr Hawcutt

    iv) Dr Ashworth

    v) Dr Cary

    vi) Dr Palm

    vii) Prof Bu'Lock

    viii) The paternal grandmother

    ix) The maternal grandmother

    x) Father 1

47. The Chronology at Appendix A is derived in large part from that prepared by Ms Stone and supplemented by the summary of blood/urine tests prepared by Ms Cook and Ms Brereton and the telephone triangulation logs. It sets out those parts of the evidence which I consider it necessary to record to set the detailed context for this judgment. It cannot of course rehearse all of the evidence that I have heard or consider to be relevant to my findings.

48. In assessing the credibility of the parties, I have regard to the consistency of their evidence with previous accounts they have given, how internally consistent it is and its consistency with other evidence and known facts. I take into account whether any witness has any motive to give evidence which is other than truthful. I also have regard to their presentation in giving their oral evidence as well as the content of what they said. Of course, I also take account of the fact that the mother declined to give evidence.

The Medical Evidence

49. A meeting of the experts in the case was held on 7 April 2020. The meeting was chaired by the solicitor for the children, Ms Dutt. It was attended by

i) Dr Michael Ashworth – Consultant Paediatric Pathologist and Special Cardiac Lead at GOSH

ii) Dr Nat Cary – Consultant Forensic Pathologist

iii) Professor Robert Forrest – Forensic Toxicologist

iv) Dr Dan Hawcutt – Consultant General Paediatrician and Senior Lecturer in Paediatric Clinical Pharmacology

v) Dr Lina Palm – Consultant Paediatric Pathologist

The minutes of the meeting appear at E308. A schedule of points agreed and not agreed was drawn up following the meeting. It addresses a number of specific questions.

50. That schedule is as follows

i) ***What is the relevance of the hair-root testing results?***

Agreement:

a) Drugs will only enter the hair root via the blood supply so is evidence of ingestion rather than contamination.

b) Drugs found in the hair root is evidence of ingestion in the days before the sample taken (1 to 5 days or so) but not possible to be more prescriptive about a timescale.

c) Cocaine found in the hair root represents drugs circulating in the blood and not contamination described by Dr Cirimele by sweat from other individuals or other bodily fluids.

d) If someone had taken an acute overdose of cocaine, Professor Forrest agrees with Dr Cirimele that one would expect to find more cocaine or metabolites in the hair root analysis.

e) As no cocaine or benzoylecgonine was found in fluid extruding from the thawed liver that suggests that a few days have elapsed and the concentration at the time of the acute illness was not particularly high.

ii) ***What aspects of K's final illness, collapse and death are:***

- *compatible with having been caused by cocaine ingestion, or*
- *incompatible with or an unlikely consequence of cocaine ingestion?*

Agreement:

a) *Cocaine exposure caused injury to the heart (evolving ischaemic necrosis in the left ventricle and the heart septum both mainly on the endocardium but also within the deeper zones of the myocardium and multifocal contractions and necrosis, local myocyte damage associated with acute inflammation and mononuclear cells which are not that acute).*

b) *No evidence of increased scarring to indicate a longstanding process (as would expect to see in cocaine induced cardiomyopathy).*

c) *The findings are not explained as a consequence of resuscitation as K was in a collapsed state for 1 hour before she was declared deceased and these changes to the heart would not appear in that time.*

d) *The myocardial necrosis is the cause of the collapse as that set in place a heart rhythm disturbance.*

e) *The clinical presentation and pathological findings are consistent with cocaine ingestion.*

f) *If K had ingested a toxic amount of cocaine, more than a minimal amount of cocaine two or three days before, it is entirely possible that there would have been some detectable in the liver but not necessarily so.*

Disagreement?

Although, when looking at the totality of the evidence Dr Hawcutt agrees, on the balance of probabilities, that cocaine ingestion caused the heart damage that led to death, he expresses the opinion that there is nothing in the clinical picture that is unique to cocaine intoxication but there is also nothing that points to sepsis.

Dr Palm also said, "the post mortem findings in themselves are really nonspecific, the pathology is there but their interpretation is not straightforward, and I have no clear course to explain what happened to K and I have no alternative diagnosis to offer either".

iii) ***Are there any known diseases, illnesses or other conditions which could adequately explain K's final illness and death? In particular, (a) has sepsis***

been ruled out, and (b) is resuscitation a possible cause of the necrosis? In relation to any other possible cause, please indicate factors which will assist in assessing its likelihood.

Agreement

iv) *No infection identified in life or since death that provides an explanation.*

v) *Resuscitation not a likely cause of the necrosis*

vi) *No inflammatory focus or of myocarditis (inflammation of the heart that can be seen after viral infections).*

vii) *No other possible cause for the necrosis has been identified.*

Disagreement

Dr Ashworth of the view that the necrosis "could conceivably be the result of hypotensive episodes or something profound like that but isn't necessarily specific for cocaine and there were no other features, there was no chronic change, no fibrosis. I wasn't particularly impressed with the inflammatory reaction and so on. So, I think its damage and it is of more than a few hours duration, probably not much more than a day or so, but other than that I'm not sure that I can be more specific than that".

1. *Do the other experts agree with Dr Hawcutt's opinion:*
   '[…] I am therefore of the opinion that, on balance of probabilities, the most likely series of events is that K ingested cocaine in the day or so before the bloods were taken […].' [E264, p.10 of 32, para. 1.14]

Agreement

Yes, subject to the following qualifications:

(a) The levels found are not a cocaine overdose just sufficient to intoxicate.

(b) Children may be much more sensitive to the negative effects of cocaine.

(c) Benzoylecgonine is a major metabolite of cocaine, is detectable for longer in urine than serum after ingestion of cocaine. You are more likely to detect cocaine or benzoylecgonine in urine than you are in a simultaneous blood sample. The benzoylecgonine finding without cocaine in urine probably reflects ingestion sometime in the 48 hours or so before the sample was taken and that would fit in with the negative result for benzoylecgonine or cocaine in the serum sample collected at 14:18 hours on the 5th of April.

(d) Normally speaking, the presence of BE without cocaine in urine would probably suggest ingestion in the '48 hours or so' or 'day or so' before the sample was collected. This would also fit with the negative result for BE and cocaine in the serum sample. (Prof. Forrest, 9H)

(e) However, urine production was probably decreased, which might make interpretation of test results more complicated and might increase the duration during which there would be a positive urine sample after ingestion. (Dr Hawcutt, 10D)

(f) The urine sample represents, on the balance of probability, the ingestion of cocaine a day or so before the urine sample was taken.

(g) The absence of cocaine in the fluids from the thawed liver is suggestive of there not having been a massive or large overdose of cocaine, but is consistent with there having been a small overdose or ingestion of cocaine. (Prof Forrest at 15G-H, correcting Dr Cary at 15D, Dr Cary agreeing at 16A)

(h) Cocaine can be fairly ephemeral, and if K had ingested a toxic amount of cocaine, more than a minimal amount of cocaine two or three days before it is entirely possible that there would have been some detectable in the liver but not necessarily so. [Professor Forrest 15G]

2. If ingestion of cocaine were the primary cause of or a contributory factor to K's death, what, if anything can be deduced in relation to the quantity of cocaine ingested and the timing of this?

Agreement

See above

3. What is the possible relevance of the other drugs (Diphenhydramine, Amitriptyline, Fluoxetine and Lido) detected in K's hair-strand testing?

Agreement (no disagreement with the views expressed by Professor Forrest)

(a) Cannot draw any conclusions from Amitriptyline or the Fluoxetine due to ease of contamination.

(b) Diphenhydramine is unusual to find in a child's hair and may have been given to K as a sedative.

(c) Lidocaine concentrations are not high so unlikely to have made any contribution to the mechanism of K's death and might be as a result of contamination

L, M and N

4. Is there any possible explanation for the hair-strand testing results of L, M and N other than exposure to or ingestion of cocaine?

Agreement (as between Professor Forrest and Dr Hawcutt)

(a) Unlikely to be contamination after hair samples taken as the washings were re-analysed.

(b) Unlikely to be laboratory error.

(c) Likely to be exposure to or ingestion of cocaine.

5. In relation to these hair-strand testing results, is it possible to distinguish between exposure and ingestion? What factors militate for and against each method?

Answer

Professor Forrest explains why distinguishing between exposure and ingestion is difficult but does not answer the question [see pages 19 and 20 of transcript].

In an email on 14 April 2020, Professor Forrest said that the hair of a child living in an environment contaminated with drugs (smoked or in powder form) may be directly contaminated. A child may also ingest drugs through drugs being on hands which have touched drug contaminated surfaces and which are then placed in that child's mouth. Normal care of a child by an adult whose hands are contaminated with drugs may result in drugs entering the child's body.

6. What are the possible and likely consequences to children of the ages of L, K and N of chronic exposure to cocaine and cannabis in quantities and over periods equivalent to those which led to the hair-strand testing results.

(Responses given by Professor Forrest and Dr Hawcutt at the experts' meeting did not answer the question)

(a) No clinical evidence that any exposure the children had has caused harm that has reached the threshold for medical attention.

(b) A child can live in a household where there are adults smoking cannabis and using cocaine and suffer no apparent specific physical ill-effects.

In an email on 14 April 2020, Dr Forrest said he considers this question is best answered by a practitioner (including a paediatrician) with experience of families where children are cared for in an environment where drugs are being used. The consequences to children of exposure to drugs depend on a number of factors, not just the toxicology.

51. The results from the adults' drugs testing carried out from the hair samples taken by the police in May (analysed by Chemtox), those taken in August (analysed by Lextox) and those taken from the mother in June 2020 (analysed by Lextox) have been compiled by the parties in an agreed table. I do not intend to set out the readings in this judgment but rely on that agreed schedule as representing the results obtained.

52. Vincent Cirimele is a forensic toxicologist of considerable expertise. He is the scientific director of Chemtox SAS who are based in Strasbourg France. He was instructed by the Metropolitan Police to analyse hair samples for the presence of drugs. He provided a number of statements to the police:

i) 12th of September 2019

ii) 10th December 2019

iii) 11th of December 2019

He also provided 2 expert reports dated 20 March 2020. He has subsequently provided further answers to questions raised after his evidence was completed along with print-outs or copies of notes of the actual results obtained.

53. Some of the points of general application he made are:

i) Cocaine is the parent drug and metabolites of it include;

a) Norcocaine; a metabolite.

b) Cocaethylene; this is created when cocaine is metabolised with alcohol.

c) Benzoylecgonine (BZE); this is a metabolite but can also be produced outside the body.

d) AEME; this is a product of crack cocaine and is created by its burning and ingestion and metabolisation in the liver. It is unique to crack cocaine.

ii) You cannot tell from the levels detected what the amount consumed was or how frequently it was consumed as the test result is a mean. One can say whether the results are consistent with exposure to (contamination) or use of the drug and whether the use was occasional/rare, regular or heavy.

iii) When drugs are present around the household or in the environment i.e. due to poor housekeeping, on surfaces, direct contact with the powder, smoke, et cetera they can get onto the outside of the hair strand. However, this sort of external contamination is generally removed during the decontamination procedures used prior to the analysis of the hair sample. Drugs which are smoked can also be passively inhaled or drugs can be ingested accidentally if left around the household or on surfaces.

iv) Children have a low body mass and as such the dose required to attain the same concentration in a child will be less than that in an adult.

v) Children's hair is more porous and thinner than adult hair and so is more susceptible to absorbing drugs which are present in the environment. Their hair is thus more likely than adult hair to show the presence of drugs which are derived from their environment. Because of the porosity of the hair environmental contamination from drugs is more likely to permeate and remain in the hair. Results from testing the 'wash' of the hair of children rarely produces evidence of drugs.

vi) Adult hair can be contaminated by external exposure and then the results from the wash will have more significance and the values for the parent drug and metabolites will have more significance in indicating consumption or contamination.

vii) Comparisons between individual's hair samples are also difficult to draw. The growth rate of adult hair varies considerably both between individuals but also within an individual. Thus a 12-cm segment of hair from one individual may represent an entirely different period of time from a 12 cm segment of hair from another individual. If their hair growth were at the extreme ends of the ranges with one growing hair very quickly and the other growing hair very slowly a 12 cm strand might represent a difference between 17 months to 8.5

months and thus (applying an average growth rate of 1cm per month) comparing what applying an average growth rate of 1 cm per month might appear to represent the same time period for two individuals might in fact be very different time periods indeed.

viii) Environmental contamination can come in many forms. It may of course come, in the case of cocaine, from the presence of powdered cocaine itself which the child may touch and transfer to its hair. Dr Cirimele also included, within his description of environmental contamination, a child ingesting cocaine powder by touching powder which was present on a surface, including toys and then putting their hands in their mouth. However, cocaine and its metabolites would also be present in the environment from the sweat or urine of an adult who had consumed drugs. Sweat or urine could be transferred from the hands or body of an adult onto the hair of a child. Environmental contamination could also come from crack cocaine being smoked with the smoke landing on the child's hair. Direct ingestion could also take place by the child breathing cocaine smoke. Smoke particles or their residue could remain after smoking had ceased which could be responsible for contamination or (it seems to logically follow) ingestion. Thus, whilst test results might in broad terms point to environmental contamination they might also reflect an element of ingestion.

ix) Contamination of adult hair from the environment was less likely because adult hair was less porous. However, it could occur.

x) Dr Cirimele emphasised that making comparisons between the results obtained from the children's hair strand tests were difficult because there were so many variables. The differences between one child's metabolism and another, their body weight, their hair type, the duration and frequency of exposure all made direct comparisons or extrapolations difficult. He said there were no controlled studies to his knowledge. He did say that in general terms the older the child the lower the level of contamination was likely to be because there was less direct physical contact and less likelihood of hand to mouth transfer.

xi) Lidocaine is a well-recognised cutting agent for cocaine. He believes that its presence in the test results for K could be attributed to Lidocaine being administered during her treatment.

54. The conclusions of the Chemtox testing shows:

i) K:

a) The presence of cocaine along with the detection of its metabolites is suggestive of exposure to cocaine. The concentration at the root end is low and medium at the tip end suggesting repeated exposure to cocaine within the time period covered.

b) The quantitative difference between the results obtained referred to in the September statement and in the February 2020, statement are explicable by the different sites where the hair samples were taken from.

c) Both suggest external contamination given the distribution pattern with increasing concentration the tip to the root end.

d) The presence of cocaine could be due to exposure via passive inhalation or surface contamination (i.e. being in an atmosphere where cocaine was being smoked, through sweat or direct contamination such as the tablet/drug powder being in contact with the hair).

e) Drug metabolites can be detected in the hair of young children even if the drug has not been ingested and can be explained by a contaminated environment (poor housekeeping, smoked drugs such as crack or cannabis by others) or by sweat transferred by the hands of drug users. However, K could have ingested drugs also.

f) The decreasing pattern makes it more likely the exposure was due to external contamination than actively incorporated drugs from blood because the oldest hair sections are the more contaminated when compared to more recent hair sections which have been less in contact with the contaminated environment.

g) If K was ingesting cocaine as a result of accidentally picking it up the amount of ingested cocaine should be significant enough to disrupt the observed decreasing pattern.

h) The detection of cocaine and cocaine metabolites in the root samples were consistent with the results obtained referred to in the September 2019 statement. They suggest she was not overexposed to the drug at a time closer to death (by over-exposure this means no significant change in exposure).

i) Cannabis, opiates and amphetamines were not detected.

j) Occasional repeated exposure to amitriptyline, fluoxetine and Lidocaine over the whole of the period but external contamination or sweat transfer is a possible contributor of a part or major part of the drug presence.

k) Occasional exposure to levetiracetam, ketamine but cannot exclude external contamination as a probable contributor

ii) The mother:

a) Repeated and increasing and heavy use of cocaine from mid May 2018 to mid-May 2019.

The test results were queried as a result of the way they were presented in the report and in particular there was concern by the mother's team that they had somehow been reversed. Eventually the original results were provided in handwritten form which confirmed the figures given in the report. The mother submitted that the court should be cautious about accepting these results given the way in which they were

presented and the fact that they indicated an opposite pattern of use to both of the Lextox reports.

b) Cannabis heroin and amphetamine methamphetamines not detected.

iii) Father 1 x 2:

a) Active cocaine use suggesting repeated and heavy use during the period early March to July 2019. Decreasing usage within the more recent times.

b) Cannabis, opiates and amphetamine not detected.

iv) The paternal grandmother:

a) Occasional use of cocaine within the period mid May 2018 to mid-May 2019. External contamination not suggested as sole reason for drug presence.

b) Cannabis, heroin and amphetamine not detected.

v) The maternal grandmother x 2:

a) Suggestive of occasional exposure to cocaine between early July 2018 to early January 2019. Stop in drug exposure within more recent months

b) Cannabis, heroin and amphetamine not detected.

vi) Q:

a) Occasional exposure to heroin or external contamination within the 10-month period from September 2018 to early July 2019.

b) Occasional use of cocaine.

c) Occasional exposure to cannabis. External contamination suggested. Possible presence in atmosphere where drug being smoked.

vii) R:

a) Active cocaine use suggested. Repeated use within the three-month period from early April to early July 2019. Decreasing use over period May to July.

b) Occasional use of MDMA.

c) Cannabis and opiates not detected.

viii) L:

a) Suggestive of exposure to cocaine during the period of time covered by the hair test. Presence could be due to exposure via hair surface

contamination from tablet/drug powder being in contact with the hair, cocaine present in atmosphere from being smoked, sweat from the hands of drug addicts.

b) Fluoxetine detected in one section of hair suggesting exposure possibly once to this drug.

ix) M:

a) Suggestive of exposure to cocaine over the period covered. Presence could be due to exposure via hair surface contamination from tablet/drug powder being in contact with the hair, cocaine present in atmosphere from being smoked, sweat from the hands of drug addicts.

b) Amitriptyline and fluoxetine exposure during the time period covered by the test. The distribution pattern for both drugs along the hair shaft suggest external contamination as a probable contributor

c) Cannabis opiates and amphetamine not detected.

55. A particular issue which Dr Cary had at one stage described as possibly a smoking gun was the test results for the roots of K's hair. Dr Cirimele was questioned extensively on the significance of his findings in this regard. In his evidence in chief he appeared to agree with what Dr Forrest said during the experts meeting [E309] which was that '*a hair root was a fairly protected area and so wouldn't be exposed to contamination during the post-mortem examination and it would represent drugs which may have been ingested by the child which had been circulated in the blood in the last few days before their death*.' In the course of further questioning on the issue Dr Cirimele gave as his opinion that the issue was not quite as straightforward as that. He explained that when testing the hair root it was not possible to delineate precisely the border between the root and the hair and that in testing it when the root was cut off it would include the root envelope including a small part of the hair fibre itself. He said that in an adult it was easier to identify the root which was below the skin surface but with a child it was less clearly delineated. Thus, he explained that in testing the 'hair root' what one was testing might also have emerged above the level of the skin and been susceptible to contamination. He also said that it was possible for cocaine on the surface of the hair and scalp to pass into the derma. He said that if the test results had demonstrated the presence of cocaine which was higher than that present in the proximal part of the hair then that would be a clear indicator of the ingestion of cocaine because a higher reading at or below the skin surface in hair would not be consistent with external contamination which had caused lower levels in the immediately adjacent hair. However, when as in this case the test results demonstrated levels of cocaine and its metabolites in the hair root which were comparable to those found in the most recently grown hair his opinion was that the presence of cocaine and its metabolites was more probably due to contamination than ingestion. However, he said that the test results did not rule out ingestion and were not inconsistent with it. The terminology which he used in the report in this regard which was that it did not indicate that K was more exposed to the drug closer to the time of death, is to be

interpreted it seems to me as the results did not show a significant or detectable change in the level of exposure immediately prior to her death.

56. He also opined that the test results which demonstrated a consistent trend of increasing amounts of cocaine and its metabolites being detected in K's hair (and L and M's) was consistent with environmental contamination; the longer the hair had been out of the scalp the more time it had been exposed to contamination in the environment. More than this he opined that the absence of any 'spike' or anomaly in the pattern indicated that K had not been exposed to a significantly greater amount of cocaine at any particular time.

57. Both the mother, the paternal grandmother and the maternal grandmother taxed Dr Cirimele on the difference between the test results obtained at his laboratory and the test results obtained by Lextox. His response was:

    i) In respect of the maternal grandmother he did not regard the difference in results as significant because his laboratory tests for smaller quantities and the amount detected by his laboratory were under the levels which Lextox test for. Thus, he maintained his view that the maternal grandmother's test results were consistent with occasional environmental exposure which either ended in January 2019 or which was at such a low level they were not detected by his tests.

    ii) In respect of the very divergent results obtained for the mother and the paternal grandmother he identified that his samples had been provided some two months (in fact 10 weeks) prior to those tested by Lextox. He therefore posed the question of what had occurred during that period of time which might have affected the results. Clearly one issue he was concerned about was whether the hair had been treated in any way which would have affected the presence of drugs in the hair. In particular he focused on the fact that the Lextox results detected BZE in the hair of both the mother and the paternal grandmother which he said was inexplicable by normal processes. BZE would be present in hair either through ingestion or environmental contamination but would always be associated with the presence of the parent drug i.e. cocaine. He said all of the literature and his understanding was that if BZE was present through environmental contamination there would be higher results for the parent drug. However, BZE presence alone could be explained by the application of hair treatments which had eradicated the presence of cocaine but left traces of BZE which is not a true metabolite but can also be created through the application of alcohol or bleach

Dr Forrest

58. Dr Forrest is a chartered chemist and consultant in forensic toxicology and chemistry. He provided a report and contributed to the experts' meeting. He gave oral evidence over the course of a day. Overall his evidence was broadly consistent with his report and the experts meeting.

59. In his written report he had made the following observations:

i) The concentration of BZE in sample AM serum three is not high but it does indicate that cocaine has entered K's body at some point. The way in which it entered the body cannot be determined.

ii) Any child being cared for in an environment where cocaine is present may well have cocaine and/or BZE in their hair and possibly in their blood. The mere presence of cocaine and/or its breakdown products in hair, or in low concentrations in blood or urine does not necessarily imply deliberate administration of cocaine to the child.

iii) There is likely to have been ingestion of cocaine within a day or so of collection of the blood sample. The hair analyses indicate K is likely to have been in an environment where cocaine is present for about eight months preceding her death.

iv) Children are not little adults they differ in the ways in which their bodies handle drugs. The results for their hair is relatively low and is less likely to reflect ingestion although deliberate ingestion cannot be excluded. Nor can the occasional deliberate administration be excluded.

60. Some of the salient points which I draw from his oral evidence include:

i) He agreed with most of what Dr Cirimele said when it was put to him. He deferred to Dr Cirimele on the contamination of the hair root issue because he accepted that it was Dr Cirimele who had actually cut the hair in order to test it and so if he thought there was a possibility of contamination arising from the lack of a clear delineation between the hair root, envelope and hair he deferred to it. However, he also said that whilst it may be more likely contamination, it did not rule out ingestion.

ii) The issue of the urine or serum sample took up some considerable time. There were a number of possibilities as to what had happened including contamination from an earlier sample, laboratory error in labelling, contamination when the sample itself was taken and cocaine being given to K whilst at the hospital (this would explain the presence of BZE in a later blood serum sample and not in the earlier sample). He thought that it was unlikely that the sample had been erroneously labelled or contaminated by the testing equipment because the procedures existed to prevent this and there was nothing to support this. Nor did he think that the issue of background noise in gas chromatography testing was a likely explanation for the result. His abiding opinion, (and he was robustly challenged on all of the possible alternative explanations), whether the sample was urine or serum and taking account of all of the issues relating to the possible problems with the sample was that the reading obtained by Dr Patterson represented the presence of BZE within the body at the time it was taken and thus represented some form of ingestion of cocaine by K in the period of days immediately preceding her death. He acknowledged that the value given would be affected by whether the result was interpreted by reference to the values relevant to serum or the values relevant to urine but it was inescapable that BZE was present 'more than

minimal but not substantial'. The absence of cocaine being detected in the sample was consistent with the half-life of the parent drug cocaine and its metabolite BZE. He said it would be expected that the half-life of cocaine would lead to it being undetectable in blood something like 10 hours after its consumption and that it would disappear from urine more quickly than its metabolite BZE would.

iii) He said one must be very careful about making assumptions about how much cocaine was ingested and when K was exposed. He emphasised the limitations of toxicological testing and what could be extrapolated from test results. He said that the presence of low levels of BZE in the urine sample in his opinion suggested consumption between 3 to 5 days prior to the test. He noted that issues such as dehydration or low blood sodium might have meant that K was producing more concentrated urine which would have led to the BZE being detectable in it for longer. If it had been consumed more recently it is more likely that other samples including from the liver would have shown its presence. He said that what he knew of the description of K's reported illness did not depict her as a child acutely ill or severely ill which would be more consistent with an overdose level. The lack of research or evidence of how much cocaine would need to be consumed to lead to this damage, and how children processed cocaine meant it was difficult to say much about the quantity that K may have consumed. He said it would be more than a trace but not necessarily very much. There are so many variables in relation to children and their sensitivity. He couldn't say the type of cocaine consumed, how much, how frequently and/or the circumstances of consumption. His opinion was most likely oral ingestion but he accepted it could have been ingested by any of the mucous membranes including through the nose and eyes. He did not consider that the toxicological or other evidence pointed to the amount ingested being indicative of an overdose.

iv) His view in relation to the very divergent results obtained by Lextox and Chemtox were that there were a number of reasons which could explain them including the application of hair products, differences in the testing methodology and reporting of the laboratories, errors in the process of reporting including the hair being tested from the wrong end. He said that studies showed that there could be widely varied results reported by different laboratories in respect of hair which theoretically represented the same time period. He did think that the results for the mother and paternal grandmother were at the far limits of the differentials he had seen. Having looked at the results for father 1 from Chemtox and Lextox he said that the differences noted there were within the normal range of differences reported. He did not think there was a need to seek explanation for the differences other than that.

Lextox Drug Testing Results

61. The Lextox reports were undertaken within these proceedings and following my directions. The parties undertook not to take any action which might interfere with the testing process. Some of the salient points made in the reports are set out below. The results themselves are incorporated into the Table referred to above.

i) Dyeing: they do not test the sample to see if it has been chemically treated but it is subjected to 2 visual inspections. The first is undertaken on the physical hair sample itself to see if there is any visible dye line or if the hair appears of an unnatural colour. A further inspection is then undertaken on the hair liquid as sometimes when dye is used it can leach out and discolour the liquid extract. Section 53 of the LexTox report would record any observations as to evidence of dyeing.

ii) The use of the sample submission form contains a declaration as to the use of hair treatments.

iii) Chemical treatments such as perming, or straightening cannot be determined.

iv) The visual observations may not note the use of any chemical colour treatment, where the hair is dyed a similar colour to the natural hair colour or where a chemical hair treatment does not cause discolouration.

v) Lextox are UK accreditation service accredited and reporting scientists are members of the Society of Hair Testing.

62. The conclusions arising from the results are as follows:

i) The maternal grandmother: The cocaine concentrations measured in the six distal hair sections can be considered as low in the view of what can be expected in recreational users, suggesting occasional exposure of the maternal grandmother to cocaine within the oldest time period covered by these hair section tests (approx. between early-July 2018 to early- January 2019). The general pattern is suggestive of a decrease and a stop in drug exposure within the more recent months before sampling.

ii) The mother: tested positive for the cocaine metabolite BZE in all 12 hair sections analysed covering the period July 2018 to the end of July 2019. Cocaine and cocaethylene were detected in the six oldest hair sections. The Findings are more likely than not due to cocaine use. The levels of cocaine detected are in the medium range in the oldest two sections and in the low range in the remaining sections.

iii) Father 1: tested positive for cocaine and three cocaine metabolites BZE, norcocaine and cocaethylene in all five hair sections analysed covering the period end February 2019 to end July 2019. On the balance of probabilities, the findings are more likely than not due to the use of cocaine. The levels of cocaine detected are in the high range in the oldest section and in the medium range in the four most recent sections.

iv) The paternal grandmother: she tested positive for BZE in all four hair sections analysed covering the period end July 2018 to end July 2019. As cocaine has not been detected the use of cocaine cannot be confirmed. It is likely that insufficient cocaine has been incorporated into the hair to be detected, especially in cases where chemical hair treatments have been used. Whilst the use of cocaine cannot be confirmed it would not be expected for a cocaine metabolite to be detected without cocaine in cases of exposure. However, on

the balance of probabilities the results obtained are more likely than not due to the use of cocaine. The levels detected are in the low range.

v) The maternal grandmother. There is no evidence the MGM has used cannabis or cocaine in the time period end July 2018 to end July 2019.

vi) The children:

a) L: present in the five oldest hair sections is the metabolite BZE. Cocaine was also detected in one other section. The results indicate that L has either ingested cocaine or passively inhaled cocaine smoke. A cannabis constituent was also detected in the three oldest hair sections. That indicated L had either ingested cannabis or passively inhaled cannabis smoke. It was not possible to detect how they entered her body but passive inhalation or accidental ingestion or a combination of the two were possible.

b) M. Cocaine was detected in all 12 hair sections. BZE was detected in the 11 oldest hair sections. Wash solutions were negative. The results indicated that M had either ingested cocaine or passively inhaled cocaine smoke. A cannabis constituent was detected in the six oldest hair sections and the 12 wash solutions were negative. The results indicated M had either ingested cannabis or passively inhaled cannabis smoke. The levels detected were in the low range. It was not possible to detect how they entered her body but passive inhalation or accidental ingestion or a combination of the two were possible.

c) N. There was no evidence that N had ingested or recently been exposed to cannabis or cocaine.

63. The Lextox report from June 2020 of the mother's hair sample which covered the period November 2018 to May 2020 produced different results to the earlier tests. The earlier tests showed the presence of the metabolites of cocaine, BZE and cocaethylene in November/December 2018 and December /January 2019 with BZE continuing to be detected all the way through until June/July 2019. Whereas the later tests did not detect anything in that period and continued to detect nothing through until May/June 2019 when BZE was detected at an almost identical level to that detected in the earlier test. The test then detected no trace of metabolites until the sample covering the period of the middle of March 2020 until the middle of May 2020 when cocaine, BZE and cocaethylene were detected above cut off levels. The mother told Lextox that she had last used cocaine on 9 th February 2019. Following the delivery of the results she subsequently accepted that she took cocaine around the anniversary of K's death and in May. The Lextox report concludes that the test results were more likely than not due to the use of cocaine and they were in the low range.

64. The Chemtox and Lextox results for the mother are difficult to reconcile with each other. The Chemtox results for July/August 2018 show the presence of all five relevant metabolites. The Lextox report shows the presence of cocaine, BZE and cocaethylene. Thereafter the Chemtox report shows increasing usage up until May 2019. The Lextox report shows decreasing usage with only BZE being detected from January 2019 onwards. The Lextox analysis of the mother's hair produced results for

January to February and February to March 2019 which did not detect the presence of any metabolite save BZE. Given the mother says that she used cocaine ("a few lines each") on 9 February 2019 and accepts using either fortnightly or four weekly at that time, the result seems surprising. In contrast the Chemtox report for February 2019 shows the presence of cocaine, norcocaine, BZE, cocaethylene and AEME in relatively high quantities. She says the last time she took drugs before that was Christmas 2018. The Lextox report shows low levels of cocaine, BZE and cocaethylene for that period. Chemtox's report again shows significant levels of all five relevant metabolites.

65. The Lextox and Chemtox results for father 1 overlap in time to a far lesser extent than the mothers. The period of overlap in April/May 2019 shows the presence of all five metabolites in both tests with cocaine being measured at 10.2 (Chemtox) and 10 (Lextox) i.e. broadly similar but the levels for the other metabolites are less consistent and the Lextox results do not show the presence of AEME in any part of the sample whereas it is present in all parts of the Chemtox sampling. However, having regard to Prof Forrest's evidence as to the variability of results obtained from hair strands taken at the same time it appears that the differences between the two are consistent with accepted variables rather than indicating anything more significant.

66. The Lextox and Chemtox results for the PGM are also irreconcilable. The Lextox reports dealing with the sample taken on 13 August 2019 did not detect any of the metabolites for the period July 2018 through to July 2019 save for low levels of BZE in each of the four quarterly samples. In contrast the Chemtox report detected four of the metabolites in every sample. Only cocaethylene was not detected in any save for one in March/April 2019 but at low levels.

67. The results from the Chemtox and Lextox reports for the maternal grandmother are consistent with each other. Although Chemtox reported that cocaine and metabolites were detected they were at very low levels and indeed save for one result were below the cut-off levels used by Lextox. In respect of that one result it was detected by Chemtox at 0.06 when the reporting cut-off level used by Lextox was 0.05.

<u>Professor Bu'Lock:</u>

68. Professor Bu'lock is a consultant in congenital and paediatric cardiology at University Hospitals of Leicester NHS trust. She is honorary Professor in congenital and paediatric cardiology at the University of Leicester. She was instructed following the suggestion at the Metropolitan Police experts' meeting at the end of January although the application pursuant to part 25 was not made until March. Unfortunately, the Professor contracted Covid 19 and her report was received on 21 April. She was instructed to carry out a very broad task namely '*Please review K's medical records and identify any potential origins of the cardiac necrosis, identified during post-mortem*.' She was provided with the entirety of the bundle including the parents' police interviews and statements as well as the medical records and the reports of the experts instructed in the family case and the experts instructed by the coroner and police. She carried out a wide-ranging review which I think reflects the broad nature of the instruction that she was provided with and the material that she was provided with. A more focused question and the provision only of the medical records might have resulted in a report which was more closely aligned to the interpretation of the medical evidence relating to K.

69. Her report was the product of what seems to have been a very thorough review of the entirety of the evidence in the case and that inevitably led to her processing and evaluating material which had probably not been the intention of the instruction and resulted in her report containing observations which were interpreted by the mother in particular but I think also father 1 as being suggestive of Professor Bu'Lock having concluded the mother and father 1 were responsible for far more than what was alleged in the threshold in terms of the health of K and their other children. Whilst I do not accept that she was drawing such conclusions but was raising questions (which may have been a product of her child protection role in her clinical practice) and nor do I accept that she had approached the case with a closed mind or that she prejudged that K had died of cocaine ingestion, her report was phrased in a direct way that was in contrast to some of the other reports. Ultimately this I think was simply a question of language and style reflective of the character of Professor Bu'Lock who had reached a clear view on the case following her review of the evidence she was sent. To the extent that the Professor makes observations in relation to K's earlier presentations to hospital and those of her siblings and what they may have been linked to I put them to one side as they are not relevant to the task that I am undertaking. In the context of the report as a whole I do not consider that they have any impact upon the evidence the Professor gives in relation to K and nor do I consider they have any bearing upon the ultimate opinions that Professor Bu'Lock has given in relation to K. Her observation that;

> *Thus, it would appear that the presence of cocaine was pervasive at the family home over a significant time frame and it is likely the children were exposed to it for much, if not all of their lives.*

was not one which was supported by the evidence (in terms of the length of their exposure) but nor was it one which was inappropriate to make given the instructions she had been working under. It not surprisingly led to a firm response from Miss Isaacs in particular which was both understandable and justified but did result in time being consumed with the expert on a factual issue which was for me to determine not the expert. Notwithstanding this excursion Professor Bu'Lock's evidence was illuminating and invaluable in terms of understanding the likely physiological process which ultimately led to K's death.

70. The following extracts seem to me to be relevant from her particular perspective as a paediatric cardiologist.

i) *K's terminal decline and demise were consistent with a child in a low cardiac output state with no evidence of sepsis or other likely cause for her decline detectable in life or at autopsy.*

ii) *It seems most likely (on the balance of probabilities) that the heart damage induced by recent cocaine ingestion was a significant contributor to her low cardiac output and other symptoms, and ultimately led to her death. Whether there were other contributory occurrences / events prior to her admission or not, it seems likely that had the possibility of cocaine ingestion been disclosed at any stage in K's hospital presentations, medical and other management may well have been different and K might well still be alive today.*

iii) *K's blood gases and blood chemistry investigations also showed that her body was struggling to perfuse her organs properly with a blood lactate level of 4.4 which is really quite high. Lactate is a chemical released as a product by cells that are working without adequate oxygen supply or by damaged tissues. However, the level of acid in her blood (pH 7.413,) was normal which meant that to a point her body was compensating-*

iv) *The other abnormality was a low sodium level (126) which is unusual and was unexplained. It can be due to excessive fluid intake or extreme salt loss but there is no evidence of either of these. I gather from my learned pathology colleagues that it can also be seen in cocaine toxicity*. [This last observation led to a series of questions being asked of the professor and the production of a number of papers on the issue of cocaine toxicity.]

v) *As detailed in P 16 of APPENDIX 1, the ECG strips recorded (K42-46) during the resuscitation do NOT suggest that there was an abnormal heart rhythm at least once K had lost her cardiac output. Rather there was 'pulseless electrical activity" (PEA). The significance of this will be explained*

vi) *There was no evidence of structural heart disease (the heart was normally formed) but the myocardium of the left ventricle (muscle of the main pumping chamber to the body) was damaged when looked at under the microscope (H1560)*

vii) *K died because her heart ceased to be able to pump sufficiently efficiently to support her circulation. Autopsy examination showed the presence of damage to the muscle of the left ventricle of the heart which had likely occurred at least a day or so before she died. This is of a pattern consistent with blood vessel damage and areas of reduced perfusion to the heart muscle likely due to blood vessel spasm or blockage and is consistent with the effects of cocaine on the heart muscle.*

viii) *Pulseless Electrical Activity (PEA), also known as (Electro Mechanical Dissociation; EMD), is relatively common in children as part of the process of dying…… This is because if, for example, a child's breathing has been so poor or stopped for a period of time, the heart muscle is severely deprived of oxygen and cannot pump efficiently….. It can occur for example if there is nothing in the circulation for the heart to pump eg if there has been massive haemorrhage or severe dehydration; and hence there is 'hypovolaemia'….. In addition, it is often seen when there is a massive imbalance in the blood chemistry eg rising acid levels, or if there are other circulating toxic substances which prevent the heart muscle from responding to any electrical activity by pumping. This is usually at the end stages of a severe illness.*

ix) *Pulseless Electrical Activity refers to cardiac arrest in which the electrocardiogram shows a heart rhythm that should produce a pulse, but does not. Pulseless electrical activity is found initially in about 55% of people in cardiac arrest.!" ... Pulseless electrical activity leads to a loss of cardiac output, and the blood supply to the brain is interrupted. As a result, PEA is usually noticed when a person loses consciousness and stops breathing spontaneously.*

x) *Cocaine is known to cause constriction ('spasm") of blood vessels, which is why it was used e.g. to stop nosebleeds, ... and this can occur inside or outside the heart. It can therefore cause 'myocardial infarction' i.e. areas of muscle death or damage. In adults this is more usually at the large vessel level but it is more likely than not, given the toxicology and hair root analysis results, the cause of the abnormalities of the left ventricle noted at the first autopsy.*

xi) *I understand from the pathology reports and joint pathology statement that this damage likely occurred a day or two before K died and possibly even before she came to hospital.*

xii) *Acute Cocaine toxicity, potentially in combination with a number of other drugs including antidepressants which are known also to cause heart rhythm disturbances, could have led to some sort of collapse prior to K being brought to medical attention. This is speculation, but her presentation was extremely atypical especially in the absence of sepsis. Although there was no evidence of a true 'dilated cardiomyopathy' in K, when this develops related to Cocaine it is likely to be as the result of serial insults and damage to the heart muscle over time. K was only 3. Cocaine does also however acutely alter the stiffness and contractile function of heart muscle (Refs 1 & 2) and would therefore leave it vulnerable to, for example, a drop in oxygen levels related to reduced consciousness level and breathing effort. It is noteworthy that throughout K's terminal admission her consciousness levels fluctuate, she is in the main tachycardic (increased heart rate) and pale and cool (hypothermic).*

xiii) *It is also noteworthy that despite what appears to have been vigorous and competent resuscitation for over an hour, at no time was there ever any evidence of return of consciousness or of effective heart activity. I have attended hundreds of paediatric cardiac arrests over my career. Whilst ultimately it may not be possible to successfully restore and sustain useful heart activity, it is quite frequent that there is some, even temporary, return of spontaneous circulation and or consciousness even if that cannot be maintained. It would appear that this did not occur despite the absence of administration of any sedation. This implies that what happened terminally to K was a catastrophic failure of the circulation at the end of a much longer deterioration, albeit one that was not readily susceptible from the blood differences and observations undertaken throughout her last stay in hospital and indeed only an hour or so before she collapsed.*

xiv) *I would therefore suggest that there is evidence of a significant period of what is known as 'low cardiac output' over the entire duration (and possibly prior to it) of K's final admission, mainly evidenced by her cool peripheries ('hypothermia) and persistently elevated lactate level. Externally it might have been manifest solely otherwise by her puffy eyes. Internally there is evidence that the additional fluid administered to K was in fact pooling in and around the lungs, heart and in the abdomen, rather than being 'pumped forward' around the body. This 'low output state' where the heart function and cardiac output is barely enough to provide for the metabolic demands of the body, was variably compensated for by K and her medical and nursing carers until her terminal collapse. This is not uncommon in children, who often seem to 'cope'*

until almost the end and then collapse very dramatically and sometimes terminally.

xv) *Cocaine ingestion in small children is well recognised in the literature as a cause of acute toxicity including fever, seizure or shaking / jerking, heart rhythm disturbances and sometimes death (Refs 3-8). The shaking and jerking are from increased nervous activity in the brain but may not always represent true seizures. They can also represent distress / agitation (Ref 8) and disturbed consciousness. There may be specific heart muscle injury from ischaemia (reduced blood supply from increased sympathetic nervous system activation, as well as increased heart rate and heart muscle oxygen demand). However, there are also more indirect effects on the heart muscle due to constriction of the blood vessels of the body causing increased resistance to blood flow around it and higher blood pressure, which reduces the heart's ability to relax and fill. This can cause back pressure on the lungs and other organs and fluid retention. Cocaine also directly affects the chemistry of the heart muscle cells and therefore increases the risk of dangerous heart rhythm disturbances (usually ventricular tachycardia or fibrillation).*

xvi) *With reference to whether there was / is any evidence of a familial cardiac problem, I have reviewed the extremely thorough examinations from my expert colleagues at Great Ormond Street (L1-16) for the 3 remaining siblings and it is clear that nothing has been found. Therefore, on the balance of probabilities, a primary (ie not drug related) underlying heart condition in K seems highly unlikely.*

71. Her conclusions were:

i) *From my review of the extremely extensive bundle and supplementary materials, I can draw no other conclusion than to say that therefore I agree with the pathology experts that cocaine exposure caused the damage to K's heart some days before her death. I can conceive of no other reasonable explanation of these findings*

ii) *This heart damage would have been very difficult to detect directly in life and her clinical presentation, particularly in the absence of a full history from the family, was therefore obscure. K was appropriately treated for the most likely diagnosis ie sepsis, but did not respond as expected, with a persistent lactate likely related to her ongoing low cardiac output state.*

iii) *It is not clear precisely what precipitated her ultimate collapse but it would seem most likely that there was either a preterminal respiratory arrest or indeed a heart rhythm disturbance which went undetected and undetectable or that her heart simply 'ran out of steam'. The rest is well documented.*

iv) *My specific opinion is that it is extremely likely (certainly more than on the balance of probabilities) that K died as the result of adverse cardiac effects from exposure to Cocaine (+/- other medications) around the time she was brought to hospital on 4th April 2019*

72. I draw the following from her oral evidence:

i) Cocaine induced heart problems in children is limited to 2 or three cases over her career. Where she has been working for the last 20 years she has seen perhaps one case more recently which was in the last 5 to 6 years and that child did not die but rather suffered brain damage as a result of the drug having been cut with quinine and so responsibility for the child eventually passed to neurologists.

ii) An unknown cause is a diagnosis of last resort. Adopting a differential diagnosis leads one to seek to exclude other causes. In this case it would be very unusual not to be able to identify a reason for death in an apparently otherwise healthy three-year-old. There has to be a reason and it is seeking to identify that reason.

iii) The difference between K's x-ray on admission and her CT scan at autopsy was that the latter showed significant fluid accumulation within the body. The significance of this was that it pointed to the heart not operating efficiently and circulating the fluids to support the blood pressure but rather the fluids collecting in the chest and abdomen.

iv) She further expanded upon the effect of cocaine upon the circulatory system explaining that in stimulating the brain it caused blood vessels to constrict to ensure blood went to the core organs but it could overstimulate them causing restriction of the blood vessels supplying the major organs thus leading to an inadequate blood supply. In children whose blood vessels were unaffected by disease it was likely to impact the small blood vessels more which would affect the individual muscle cells and the area around them depriving them of oxygen and energy causing them to die or be damaged. Although the effect of cocaine is short lived and would wear off by the time the blood supply is restarted the cells may have died. The muscle in the endocardium is particularly vulnerable because it has the poorest blood supply and is affected on each contraction.

v) One would expect to see some acute symptoms after ingestion but the damage to the heart muscle would take some time to cause her to deteriorate.

vi) The medical literature did not show that children exposed to cocaine died in the way K did nor did they show a more than minimal mortality associated with acute cocaine exposure. Prof Bu'Lock wondered whether the lack of testing in England masked greater prevalence. She noted that children who survived might still have heart damage, but you simply didn't know. She accepted that there was no known association between living in a cocaine contaminated environment and death.

vii) Cardiac necrosis in a child with a previously healthy heart is very rare. She has been contacted perhaps five times in 20 years in relation to cardiac necrosis.

viii) Children's complaints about how they are feeling are difficult to interpret. They often complain of tummy pain when the source of the pain is elsewhere. Other symptoms caused by cocaine ingestion might distract from any effects it

was having on the heart. Heart pain is very good at making people vomit. It is though non-specific.

ix) Children tend to be robust and keep going even with reduced heart output until they suddenly collapse. In particular whilst children are awake the body produces chemicals which continue to stimulate the heart. When a child falls asleep when their heart is in low output the stimulant chemicals are removed and can lead to the heart function dropping below the threshold at which it can sustain effective circulation. The presence of excess fluid causes further work for the heart to circulate blood. This can then result in PEA. The inability to restart K's heart is consistent with a primary cardiac problem rather than a respiratory or infective cause.

x) Although low-sodium levels can cause damage to the heart they have to be very substantially below the levels that were noted in K. She was appropriately treated for suspected SIADH low sodium. Her reading was 126 and it would have to drop to 103 in order to have an impact on the heart muscle cells.

xi) K's appearance with puffy eyes is consistent with heart failure or heart damage but other things obviously can cause it and where it is linked to poor circulation tends to start from the feet; gravity plays its role.

xii) Had cocaine been identified as a possible problem it would have led to greater consideration of the cardiac issues. She could have been transferred to a cardiac centre where her circulation could have been supported artificially and her blood oxygenated away from the body.

xiii) Lactate or lactic acid is produced by muscles which have an inadequate oxygen supply. It alters the acidity of blood making it less efficient and is a warning sign about the supply of blood and oxygen to the body. High lactate is an indicator that K was very significantly ill before she came to hospital. The usual range is below 2 and K's was above two and above four which is a source of serious concern. One would expect it to reduce if the child had an infection which was being successfully treated with antibiotics. Her CRP wasn't elevated and her white count came down quickly which is inconsistent with infection.

xiv) The evidence suggests that K's oxygen saturation levels were being monitored and the alarm went off because the monitor could not detect her oxygen saturation levels as her pulse had ceased.

xv) The ECG strips show the CPR but don't show any resumption of normal heart output when they pause CPR to check whether there is any activity. It is not possible to tell from them whether there was a heart arrhythmia. This is used incorrectly to describe an abnormal rhythm. Arrhythmia means no rhythm. The presence of the ECG trace shows electrical activity in the heart but no resumption of circulation. Adrenaline would not have caused the damage - the only perfusion to the heart is from the cardiac massage. Adrenaline administered in resuscitation wouldn't have time to cause the damage seen.

Dr Hawcutt:

73. A report was obtained from Dr Daniel Hawcutt a consultant general paediatrician and senior lecturer in paediatric or clinical pharmacology.

74. He notes that the number of visits to the doctors is appropriate. On balance he was of the opinion that earlier neurological symptoms experienced by K and M are unlikely to be related to cocaine exposure.

75. He observed that the symptoms of cocaine exposure in children are not well described in medical literature. There are logical concerns that can reasonably be extrapolated from adults and teenagers who have used the drug recreationally such as tachycardia, anxiety/mood change, seizures, and hypertension (high blood pressure). There is some literature suggesting that when younger children are exposed the effects are more serious.

76. Cardiac necrosis is a very rare diagnosis in children with a previously healthy heart without congenital heart disease. With his pharmacologist expertise he supports the statement from the pathologists that exposure to cocaine could have caused cardiac necrosis.

77. He was of the opinion that having regard to the cardiac necrosis and the fact that K did not improve following effective treatment for sepsis on the balance of probabilities the most likely series of events was that K ingested cocaine in the day or so before the bloods were taken, that she suffered cardiac damage secondary to the ingestion sufficient to cause her death. Having heard the further opinions that cardiac necrosis was unlikely to be associated with the resuscitation attempts Dr Hawcutt was more confident in his identification of cocaine as the cause of a cardiac necrosis which then led to arrhythmia and death. The diagnosis of cardiac necrosis in children is of such a rarity that tests for it are not undertaken on admission in paediatrics. Neither the statement of father 1 the mother or the maternal grandmother gave any explanation as to how the children may have been exposed to cocaine.

78. In his oral evidence Dr Hawcutt's opinion was essentially unchanged by the conclusion of his evidence. The other possible causes of death including the misadministration of the vomiting/nausea drug which the NICE guidelines indicated could in association with hypokalaemia lead some patients to heart arrhythmia; hypovolaemic shock, a sodium deficiency leading to heart arrhythmia and the possible relevance of the low potassium amounting to an electrolyte deficiency which might have caused heart arrhythmia were all tested in extensive detail. He said that the administration of the anti-vomiting drug combined with the low potassium was unlikely in his view to provide an explanation although he accepted that the NICE guidelines contained a reference to some patients experiencing heart arrhythmia. He said the potassium levels indicated were only just elevated. He said he had never encountered hypovolaemic shock having caused damage to the heart although accepted that theoretically it was possible. He said the electrolyte issues with low sodium and high potassium were minor compared to her symptoms of a high heart rate and poor perfusion and the high lactate levels. He said the evidence from UCH suggested that K was adequately hydrated, and thus low blood pressure caused by dehydration was not indicated. He also said that low blood pressure caused by leakage of fluid from the blood vessels perhaps linked to an infection was not indicated. He said that potassium deficiency was in his view a red herring. He said that sodium deficiency (the sodium levels were low and increased as a result of the provision of

IV fluids) would usually lead to seizures which would cause the presentation and the low-sodium would then be rectified before it could cause a heart arrhythmia. He did not rule it out completely but said it was unlikely. In relation to the possibility of her death being caused by sepsis although there were symptoms which were consistent with an infection (viral or bacterial) and the post-mortem results were not determinative because antibiotics and antiviral drugs may have removed markers of infection he said if they had removed the infection why did she die? He also said that if there had been an infection one would have expected the CRP test results to have increased very significantly over the slightly raised figures that she presented with on admission to hospital. He therefore did not think that infection was the cause. He was pressed on the inconsistencies between the toxicological evidence, the pathological evidence, in particular the apparent discrepancy between the evidence of Prof Forrest that the reading in the urine suggested ingestion 3 to 5 days prior to the test and the evidence of Dr Ashworth that the cardiac necrosis was caused not later than six hours before death and not sooner than 48 hours before death. There was some discussion, initiated by me, over whether those timeframes were bright lines or whether they were blurred edges. He remained of the view that with the established presence of cocaine, cardiac necrosis which could be caused by the vaso-constrictive effect of cocaine in shutting off the blood and oxygen supply to parts of the heart muscle could lead to the death of heart muscle tissue which could either interfere with the constrictive efficiency of the heart muscle or with the electrical pathways of the heart which might have led to arrhythmia and this was the most probable explanation for K's death. He accepted that there were features which were not consistent with it for instance the sodium deficiency which he could not explain. However, he said that other explanations did not fit as well with the findings as cocaine induced cardiac necrosis. He accepted that K appeared to be well on the afternoon of 3 April and that her complaining of a tummy ache and vomiting could be associated with her having ingested cocaine. He said that the oedema around the eyes was consistent with ingestion of cocaine as the cardiac necrosis would affect the efficiency of the heart pumping blood to and from the parts of the body and that inefficient blood circulation could lead to the build-up of fluid in the tissues an obvious location being around the eyes.

Dr Jacques:

79. Professor Jacques a paediatric neuropathologist, provided an opinion having examined K’s brain. No significant pathology was identified which explained the cause of death. Dr Jacques was not called to give evidence.

Dr Ashworth

80. Dr Ashworth works at Great Ormond Street Hospital and is thus a colleague of Dr Palm. Dr Palm said that she had consulted him to discuss the case and that subsequently he was asked to examine K’s heart and to review the histology slides taken at both the first post-mortem on 10 April and the second post-mortem on 22 May 2019. She said in evidence that her understanding of why an opinion had been sought from him was in particular in relation to identifying any structural or anatomical issues with K’s heart rather than to review the histological evidence. I refer to this because Dr Ashworth was not instructed as a Part 25 expert and no

separate report was filed by him even within the police material. His report was read into Dr Palm's police statement which dealt with the post-mortem investigation carried out on 22 May 2019. As a result of my wishing to be certain that a particular sentence had been accurately transposed a copy of the report he had provided to Dr Palm was filed. No transcription error emerged.

81. He also had attended the experts' meeting and contributed to the discussion and agreed with the schedule of agreement which had emerged from that meeting.

82. K's heart was sent to Dr Ashworth for specialist cardiac examination. The essential findings in his report are as follows:

i) Examination of the heart, which had already been extensively dissected revealed no abnormality. Although the tricuspid and mitral valves were not present he was able to say that they could not have been abnormal as the rest of the heart would have shown changes in its appearance had they been so. Overall his examination of the heart showed no abnormality or pre-existing condition.

ii) He reviewed the slides taken for microscopic examination. This included the slides taken at 22 May post-mortem and the slides taken at 10 April post-mortem.

iii) In respect of the 22nd May slides they showed autolysis with the loss of much of the nuclear detail. No myocyte necrosis was identified and nor was inflammation. There was a focal mild increase in fibrous tissue in the endocardium. There was a mild increase in interstitial collagen at the insertion of the posterior aspect of the right ventricular wall into the interventricular septum but no discrete scarring.

iv) In respect of 10 April slides, I set out what he reported in full. It has been the subject of considerable focus in the course of the hearing.

The original sections of myocardium taken by Dr Palm at the time of the post-mortem examination have been reviewed. They show small foci of sub-endocardial haemorrhagic myocyte necrosis on the left-ventricular aspect of the inter-ventricular septum. There is no associated cellular reaction. No similar changes are seen in the extra pieces of myocardium examined, but the degree of autolysis means that small such foci may not have been detectable.

Conclusion:

Minor non-specific changes in the myocardium. Small foci of sub- endocardial necrosis left-ventricular aspect of interventricular septum, possibly resuscitation related. There is no evidence of chronic ischaemic damage (in the form of fibrosis) in the myocardium and there is no myocarditis.

83. In his oral evidence he expanded on what was contained in his report. In giving evidence, he was less sure-footed in some respects than the other experts having a less clear recall of matters not recorded in his report. He said that discussions between colleagues at Great Ormond Street Hospital in relation to matters such as findings

during a post-mortem were routine and rarely recorded. This accorded with Dr Palm's evidence as to the informal nature of discussions. This is entirely understandable and natural. He was less clear as to the documentation he had received when he was asked to conduct the examination and did not appear to have access to the sorts of records that Dr Palm had had access to. He said that one got surprisingly little paperwork with specimens. The overall impression that I got from his oral evidence in terms of his involvement in the processes which followed K's death was that it was peripheral and that as a consequence his report was to adopt the colloquial a dipping of his toe into the waters of the process rather than a full immersion into it. Thus, the report that he provided was limited in its detail or consideration of explanations.

84. Given the way his report was presented Dr Ashworth clarified and expanded upon a number of matters in the course of cross-examination. His opinions had clearly developed as a result of the experts' meeting and the provision to him of further information. He said he agreed with Dr Palm's description of the slides taken on 10th April and which was detailed in her report at [H1547]. In particular in relation to Dr Palm's own sections which he had appeared to identify in his report as not having shown evidence of inflammation he said:

"*When I say no inflammation what I mean is not significant inflammation which indicates a longer process of the body starting to react to try to heal the necrotic tissue damage. I did see small spots of inflammation (reactive cells) which was the beginning of the process of the body reacting, but it was minimal which is why one can say the process hasn't been on-going for that long'*

'I did see cellular reaction-I was referring to myocarditis when the reporting Dr Palm's report says there is 'no associated cellular reaction'

This seems somewhat hard to reconcile with the use of the expression '*no associated cellular reaction'* particularly if one accepts (as I do) that myocarditis is defined by inflammation commencing in heart tissue which causes myocyte damage/necrosis of the heart tissue. In this case Dr Palm said this was not myocarditis because the sequence was reversed in that in K's heart myocyte damage/necrosis had occurred and this had resulted in the commencement of an inflammatory response as the body sought to deal with the death of the heart muscle cells.

85. It is fair to say that his evidence as to his discussions with Dr Palm after her first post-mortem and prior to his own examination of the heart and his recall of the documentation he had received which might have disclosed that the attempts to resuscitate K when she collapsed had never succeeded or restored cardiac output was unclear. I was unsure at the conclusion of his evidence whether the conclusion in his earlier report that the damage might be resuscitation related was because he had at that time been under the impression that the resuscitation had been followed by a period during which cardiac output had been restored, or whether during the resuscitation cardiac output had been restored sufficiently to transport adrenaline to the heart to cause damage, perhaps consistent with contraction band necrosis. Whether his interpretation of the slides had been mistaken or his conclusions drawn from them mistaken or whether his opinion was at that time that the sort of damage he recorded could in fact be caused during an unsuccessful resuscitation attempt was also unclear. Given the overwhelming weight of the other experts as to how long myocyte

damage in the form of necrosis would take to become visible and given his own very clear evidence orally the last possibility above seems unlikely

86. He said his own examination of the heart revealed little direct evidence which added to the knowledge of the cause of death. The state of the heart was consistent with there being no anatomical abnormality, or evidence of abnormality in the mitral and other valves because although they were absent any abnormality would have led to changes in the other compartments of the heart. The process of autolysis, namely the breaking down of the tissue of the heart following death over the period of months which had elapsed before he examined the heart plainly limited what he was able to detect. Thus, he was unable to detect inflammation.

87. He said he reviewed the sections specimens (the pieces of tissue taken for microscopic examination) which Dr Palm had taken. He was clear in oral evidence that they demonstrated the small spots of cardiac necrosis in the heart. He was also satisfied that they showed a limited amount of inflammatory response i.e. cellular changes indicating the beginning of the process of the body responding to the death of the tissue, viz the cardiac necrosis. It was his view that the nature of the cardiac necrosis together with the limited inflammatory response allowed the timing of the cause of the cardiac necrosis to the period of not later than six -12 hours before death and somewhere in the region of up to 24- 48 hours before death. His evidence of the upper limit was more 'bright line' than the evidence of some of the other experts in particular Dr Cary and Dr Palm. He said that he was unaware of the timing of the death in relation to the resuscitation attempts and hence he had referred to resuscitation, as a possible cause of the cardiac necrosis. However, when he learned that death had occurred within one hour of the commencement of resuscitation, he said he did not believe that cardiac necrosis could develop and become visible within that one-hour window. He accepted a number of other possible causes of cardiac necrosis including low blood pressure, arrhythmia, acute vaso-constriction and hypovolaemic shock.

88. He explained that the cause of cardiac necrosis was the interruption or loss of the blood supply and oxygen to that tissue which caused it to die. He said it was death of the tissues before death itself and was not associated with post-mortem changes in the tissue. As it died the body would respond by seeking to heal the tissue which would cause the inflammatory response. When he was speaking of what he saw on the histological examination of the slides taken at the second post-mortem on 22 May he said that the process of autolysis meant that he could not detect myocyte necrosis (i.e. it could have occurred but it was not detectable due to the degeneration of the tissue over time's death); however he did say that even allowing for autolysis he would have expected to see some evidence of inflammation in the form of what he described as the ghosts of lymphocyte cells. He said the absence of those meant there was not myocarditis. He explained the Dallas criteria for diagnosing myocarditis and the twin pillars of inflammation and myocyte damage. What did not emerge clearly until Dr Palm gave evidence was that in myocarditis it is inflammation that is the commencement of the process with the myocyte damage being caused by the inflammation. Hence as he said borderline myocarditis can be diagnosed if there is inflammation alone but not if there is myocyte damage alone.

89. He said that low blood pressure could cause the death of tissue because the blood and oxygen would not then reach the tissue. He did not think the physiological process

which led to a stimulant such as adrenaline or cocaine causing cardiac necrosis was within his area of expertise. He said of the experts' meeting summary at E459 "I can agree with it as I saw all of it".

Dr Cary

90. The report of 30 January 2020 ultimately gives the cause of death as 'un-ascertained'. In the preliminary post-mortem report, he expressed the opinion that cocaine intoxication would explain both K's collapse and her death. Tachycardia and fever would be typical symptoms following cocaine ingestion. The January report contains the following relevant observations.

i) There is no evidence of any underlying natural disease that caused or contributed to cause of death or indeed the cause the clinical features at the time of presentation. Detailed neuropathological examination of the brain did not reveal evidence of a cause of death.

ii) Microscopic examination of sections of the heart revealed multifocal myocardial necrosis in both the left and right ventricles. These are associated with exposure to stimulant substances such as adrenaline and can also be seen as the result of ingestion of stimulant drugs including cocaine.

iii) There was a single piece of evidence, namely the analysis of a urine sample, which suggested cocaine was ingested in the time period around the time of admission.

iv) It is apparent that over the many months leading up to death there has been repeated exposure to a multiplicity of drug substances including cocaine. It is not possible to distinguish between exposure as a result of ingestion (whether through passive inhalation of smoke or through swallowing) and exposure of the hair directly as a result of a contamination including by the sweat of another person or persons.

v) The opinion of a consultant paediatrician and further analysis of the hair roots were to be sought to further clarify matters.

91. As part of the experts meeting and the schedule of agreement Dr Cary is in agreement with the conclusion that cocaine exposure caused injury to the heart in the form of myocardial necrosis which in turn caused a heart rhythm disturbance which led to K's collapse and subsequent death. The clinical presentation and pathological findings are consistent with cocaine ingestion.

92. In his oral evidence, Dr Cary said he worked as a cardiac pathologist before becoming a forensic pathologist. That role (also that of Dr Ashworth), meant that he was well placed to address the heart related issues. He emphasised that although his report identified the cause of death as unascertained, this was a product of the ring fencing that is part and parcel of the role of the forensic pathologist. Thus, he would take

account of the pathology, the histology, the toxicology, but the evidence of clinical presentation and the evidence of the parents was not a part of the material he brings into his evaluation. He emphasised the advantage that the paediatric cardiologist and the court has in drawing on a wider range of material than he could. He particularly emphasised that this was as he described it 'a whole picture case' and that actually it didn't involve much forensic pathology. He accepted the limitations of toxicology and drug test results in terms of determining when, type of, how much, frequency of cocaine which had been ingested. He also accepted that K's was a strange case from his point of view. He accepted that in his role as a forensic pathologist in cases of suspicious deaths it was sometimes simply impossible to ascertain how the death had occurred. He said that pathology is imperfect. In relation to the role of cocaine in K's death, he said that the hair root tests were not the smoking gun that he had originally thought they might be, having regard to the lower level of cocaine metabolites found in the hair root and the limitations on hair root analysis described by Dr Cirimele in particular in relation to the possibility of contamination. Although it is fair to say that he did not make common cause with Dr Cirimele in terms of the likelihood of contamination as he considered that the hair follicle or root was more embedded in the scalp and thus less susceptible to contamination. He also did not consider the absence of findings from the fluids which extruded from the liver to be definitive, as he explained that a better way of liver sampling is to homogenise the liver cells themselves and test them because the drug binds to the cells and might not pass into the fluids. He said that the presence of BZE in the urine sample together with the other evidence of exposure to cocaine and the damage seen meant that the only viable explanation, in his view, was ingestion of cocaine. He said that having read the reports of the other experts and discussed it with them he was not suggesting deliberate administration or repeated administration and that it may have been a small quantity which was ingested. He said the evidence from studies of babies exposed to cocaine in utero suggested young children's hearts were susceptible to damage and it may be in small amounts. He said many children were exposed to cocaine contamination and it was a not infrequent finding in post-mortems that children had cocaine in their hair thus environmental contamination was something more children were exposed to but thankfully relatively few died from it.

93. He said that he had not only conducted the special post-mortem with Dr Palm; she is looking for natural conditions and he is focusing on injury or other forms of potentially suspicious harm but he also reviewed the histology slides with her and saw what she had recorded as having found in terms of cardiac necrosis inflammation et cetera.

94. He said that cardiac necrosis could arise from a number of conditions or causes. He was able to rule out many of them for instance a tumour of the gland which produces adrenaline, an overproduction of which might cause vasoconstriction and necrosis. He said that adrenaline (in the context of administration during resuscitation) could be responsible for some of the findings recorded by Dr Palm at H1572 (in particular contraction band necrosis) but that would not explain the totality of the findings. The findings were not consistent with having been caused in the hour prior to K's death. In any event given that there did not appear to be a resumption of circulation in K in the hour during which resuscitation was attempted and the body would not have been circulating blood, which would be necessary for the process of the inflammation to take place. He said the figure usually quoted to get an inflammatory response is a

minimum of 3 to 6 hours although he said he had never seen it in one or two hours. He said this was because, in order to get an inflammatory response, you have to reach the stage of not only the neutrophil attaching to the blood vessel wall but have to pass through it into the tissue thus causing the inflammation. Thus, he said the true time of death might better be taken as the timing of her collapse at around 4:42 AM. He said adrenaline damage from stress was possible to rule out and referred to a case of a number of individuals who had been exposed to extreme stress, being caught in a lift during a fire and how cardiac necrosis was found they being aware they were about to die. He also said that it was impossible to delineate between possible cocaine-related myocardial damage and that caused by systemic hypotension. There had been some debate with for instance Dr Ashworth but also Dr Hawcutt about the definition of myocarditis. Dr Cary said he would use the term myocarditis to describe a condition in the heart caused by viral or bacterial infection and it was not used to define the sort of damage found in K's case. He said that stimulant drugs could cause cardiac necrosis in two ways. Firstly, by vasoconstriction in which the blood vessels narrowed and prevented the supply of blood and oxygen to the heart muscle tissues. He said that the damage to the tissue was not immediate but evolved over a period of hours after the blood supply was restricted. He identified another form of damage which he described as hyper contracture where the cells are shocked by the stimulus and contract so sharply that the cell bursts causing its death. The cell is then dead. He said that the cells of the heart do not regenerate or repair themselves but die and are replaced with scar tissue. In the case of hyper contracture, the cell death is immediate, and the process of necrosis then commences. In vasoconstriction cases there is a time lag between the vasoconstriction occurring (when the stimulus is applied) and the death of the cells. In relation to the timing of the cause of the necrosis he said that it was much easier to say that it must have happened not less than 4 to 6 hours before death but setting upper limits was much harder. He was pressed on this in particular by Ms Isaacs and Mr Twomey and said that 48 hours was about right but it was far more imprecise than the lower limit. He said that there was a range of views on it. He said 48 hours was a 'ballpark' upper limit. As an electrical organ damage to the heart muscle would interrupt the signals in the heart. This was consistent with Dr Hawcutt's description of how damage to the heart muscle tissues could either affect the efficiency of the muscle's ability to contract and thus pump or the electrical signalling which provided the rhythm of the heart. As the necrosis evolved the impact could become more significant leading to heart arrhythmia and collapse.

95. He said that it was reasonable to assume that following the ingestion of cocaine, K would have become unwell and that periorbital oedema and a high temperature could indicate that, by the time they were observed, she had ingested cocaine and begun to display the effects of it. Although the necrosis would not be evident. (NB Dr Hawcutt said that if he had been aware that cocaine may have been consumed a 12-point ECG might have been conducted which could show distinct traces which would indicate necrosis.).

Dr Palm

96. Dr Palm is a consultant in paediatric pathology at Great Ormond Street Hospital for children. She has been a consultant for State pathologist since 1999 and prior to her appointment at GOSH in January 2012 was a consultant paediatric and perinatal pathologist from 2004. She was instructed by the coroner to carry out a post-mortem

at Great Ormond Street Hospital on 10th of April 2019 and this was a routine coronial autopsy. A second special post-mortem examination was carried out on the 22nd May 2019 after hair and blood (in fact urine) samples revealed traces of cocaine or its metabolites in K's body.

97. Her police witness statements contain her report arising from the two post-mortems. I do not intend to set out much of the detail of those reports. They record in considerable and graphic detail the extensive nature of the examination and investigation that Dr Palm undertook. She said it was conducted in accordance with RCP guidelines. I shall limit myself in this judgment to referring to those parts of the reports which record the uncontested conclusions and the detail of those aspects which have been the subject of consideration in this hearing. She said that when she was writing up her preliminary findings, she became concerned on reading through K's medical records and thought that factitious illness or Munchausen's syndrome by proxy was something she ought to consider. She therefore decided to take hair samples from K so that they could be sent for toxicological examination.

98. The relevant parts of the report of the initial post-mortem on 10 April appear to me to be as follows:

i) Investigations included a whole-body CT scan, naked eye and microscopic examination, specialist neuropathological examination (by Professor Jacques), microbiological and metabolic screening studies. These did not reveal a pre-existing congenital or acquired natural illness or medical condition that could have caused or contributed to K's death.

ii) There was no evidence to indicate an ongoing overwhelming infection or sepsis. The examination of the brain showed no morphological evidence of meningitis or encephalitis.

iii) There was no external traumatic injury, bruise or other sign to suggest physical abuse. There were no internal traumatic injuries to any organs.

iv) Non-specific internal findings of generalised vascular congestion, pleural and peritoneal effusions, acute thymic involution and diffuse pulmonary haemorrhagic oedema were consistent with an acute mode of death and likely due to acute heart failure.

v) Naked eye examination of the heart including the heart muscle was normal. However, on examination under the microscope some abnormalities were revealed which I shall set out in more detail below. The heart muscle showed features of spotty myocyte necrosis associated with an inflammatory infiltrate, areas of contraction band necrosis and evolving ischaemic myocardial necrosis. There was no evidence of structural heart disease, myocarditis, vasculitis or signs of a cardiomyopathy.

vi) The toxicology screening which detected cocaine and BZE in hair and BZE in one blood serum sample, together with the clinical history and the cardiac pathology strongly suggested her death may have been a result of acute cocaine toxicity.

99. The critical finding for the purposes of this hearing was what Dr Palm records she saw when the heart was examined microscopically with the aid of dyes used to reveal areas of change. Her findings were as follows:

Sparse eosinophils, neutrophils and mononuclear cells are observed in the interstitial myocardial tissue of the right ventricle, in areas associated with localised myocyte damage and acute inflammation. Multifocal contraction band necrosis and areas of evolving ischaemic necrosis are seen in the left ventricle and in the interventricular septum, both subendocardially and within the deeper zones of the wall. Small areas of myocardial ischaemia and haemorrhage are seen in the ventricular myocardium close to the AV node; otherwise the AV node is histologically unremarkable. The features are in keeping with cocaine-related myocardial damage superimposed by systemic hypotension. There is no evidence of myocarditis, fibrosis, cardiomyocyte hypertrophy or disarray, giant mitochondria, increased proliferative activity or other features to suggest a cardiomyopathy. The epicardial and intra-myocardial arteries are unremarkable. There is no microscopic evidence of atherosclerosis, granulomatous inflammation or vasculitis.

100. Dr Palm translated this into something more accessible for me by explaining the following

i) *Sparse eosinophils, neutrophils and mononuclear cells are observed in the interstitial myocardial tissue of the right ventricle, in areas associated with localised myocyte damage and acute inflammation.* The heart muscle is the myocardium. It consists of muscle cells which are called myocytes which contract. In the right ventricle she found areas where the myocytes were virtually dead. These were surrounded by inflammatory cells which were part of the body's response to the damage to the myocytes. Neutrophils are the white blood cells which fight against infection. Eosinophils are also a white blood cell which is part of the immune system. Mononuclear cells are also a subtype of white blood cell which are there to clean up around a damaged area. Neutrophils and eosinophils are the early responders from the bone marrow to damage with mononuclear cells arriving later. The standard texts refer to a period of 12 to 24 hours for neutrophils to be seen following a myocardial infarction. The mononuclear cells take longer. Some studies may refer to 6 hours for the cells to appear, but mainstream is 12 to 24 hours for the earliest appearance. These white blood cells were present around the damaged myocytes and in the interstitial tissues which support the heart muscles and nerves. She said they were unmistakable to a pathologist and could not be confused with myocarditis. She described this as spotty areas of necrosis. This damage would need the passage of at least 12 hours to become detectable on microscopic examination. Whilst one might see neutrophils and eosinophils with other conditions the presence of the mononuclear cells was only consistent with damage to the myocytes. The spotty necrosis might represent damage caused by the toxic effects of cocaine. It could not be consistent with resuscitation efforts because neither sufficient time elapsed for the inflammatory response to develop (in one hour or less) and nor did K's heart output ever recover so as to allow blood circulation which could have carried adrenaline

ii) *Multifocal contraction band necrosis and areas of evolving ischaemic necrosis are seen in the left ventricle and in the interventricular septum, both sub-endocardially and within the deeper zones of the wall.* The inner part of the heart muscle in contact with the blood (the wall of the chamber) is lined with the endocardium and under that the heart muscle is quite vulnerable to low oxygen levels. This is called the sub-endocardial area. It is more vulnerable to low oxygen levels than the outer areas because the blood vessels which supply it pass through the outer layers of muscle (Professor Bu'lock added that every time the heart contracts the blood supply to the sub ended area is restricted). The interventricular septum is the part of the heart which separates the left and right ventricles Two different types of necrosis, were seen in this area. Firstly, contraction band necrosis, which is the death of cardiac myocytes obvious under microscope as bright pink bands. This could be caused in the last hour of life. (I think she was referring to death of the cell by hyper-contracture) This is not linked to the resuscitation either as although they could theoretically be caused by the resuscitation process, if K did not regain cardiac output, they cannot be attributed to it. This could be due to hyper-contracture (the cell bursting) or to vaso-constriction (lack of blood supply and thus oxygen). Evolving ischaemic necrosis is muscle tissue which is dying as a result of a lack of oxygen. It is acute; recent and developing. It might be a function of the heart efficiency deteriorating secondary to the other damage or it could be directly related to cocaine. It is not associated with the presence of white blood cells responding as the damage is still developing. However, ischaemic damage does also require cardiac output in order for it to evolve. As K did not regain cardiac output after her collapse, it is not likely related to the resuscitation. One might not see a white blood cell response to evolving ischaemic damage if the heart is not sustaining normal blood pressure.

iii) *Small areas of myocardial ischaemia and haemorrhage are seen in the ventricular myocardium close to the AV node; otherwise the AV node is histologically unremarkable.* The atrioventricular node is cited within the right atrium very close to the atrium and ventricle. It is where the heart pacemaker cells reside which give the heart its rhythm and so is part of the electrical conduction system of the heart. Myocardial ischaemia is also a description of damage or necrosis due to lack of oxygen. This was also associated with some bleeding where the blood was leaking out of the blood vessels. Although the damage did not involve the AV node itself its presence in that region could possibly have affected the electrical signals and thus contributed to arrhythmia.

iv) *The features are in keeping with cocaine-related myocardial damage.* Cocaine is toxic to heart cells. It can damage individual cells and can cause myocardial infarction and evolving ischaemic damage. It might also cause coronary artery damage in the form of thrombosis in adults. In adults if cocaine has been used for a long period of time and the adult has survived the areas of the heart which have sustained necrosis become scarred. It is called cocaine induced cardiac myopathy. Heart cells do not replace themselves. Dead cells simply become scar tissue. Damaged areas of the heart prevent it functioning properly. They could induce an abnormal heart rhythm. A damaged left ventricle (more so than right ventricle) can induce an abnormal rhythm even with unhealthy AV node. A damaged heart affects the efficiency with which it

is pumping blood around the body and the body responds by targeting the blood at essential organs. If the efficiency of the heart drops too low it eventually ceases to be able to provide sufficient oxygen to the heart itself degrading its efficiency even further and eventually leading to a collapse.

v) *Superimposed by systemic hypotension,* systemic hypotension describes the effects on the heart caused by low blood pressure related to the reducing efficiency of the heart and the final collapse.

vi) *There is no evidence of myocarditis, fibrosis, cardiomyocyte hypertrophy or disarray, giant mitochondria, increased proliferative activity or other features to suggest a cardiomyopathy. The epicardial and intra-myocardial arteries are unremarkable. There is no microscopic evidence of atherosclerosis, granulomatous inflammation or vasculitis.* This identifies and excludes a large number of underlying conditions which might manifest similar features. After the toxicological results were received the coroner required a special post-mortem to be undertaken. This was done with Dr Cary. At that post-mortem they decided that it would be prudent for cardiac pathologist to look at K's heart and the slides.

101. Dr Palm was present at the experts' meeting and this extract from experts' meeting relating to the heart damage summarises her position.

a) The finding that I initially could not explain was the heart microscopy, the heart examination showed what I described as evolving ischaemic necrosis in the left ventricular and the heart septum, both mainly on the endocardium but also within the deeper zones of the myocardium. And there were also multifocal contractions band necrosis, and more importantly local myocyte damage which was associated with acute inflammation, and I have also mentioned mononuclear F cells, which are not that acute. There was no evidence to suggest any increased scarring to indicate that that was a longstanding process as one would expect to see, in, for example. cocaine induced cardiomyopathy? 00:26:13].

102. In her oral evidence Dr Palm also gave the following evidence which may be significant:

i) It is not uncommon for a post-mortem to be unable to establish a medical cause of death. One looks for a clinical pathological marriage. K's case is a complex case on the pathology alone.

ii) Sepsis or other forms of acute infection are not straightforward to detect post-mortem. One looks for an established inflammatory focus an organ such as the lung, heart or brain as well as general in inflammatory response including an enlarged spleen for instance. This evidence should be corroborated by microbiology from blood or other material. Only when both are found can one diagnose sepsis. The use of antibiotics and antiviral drugs may eliminate any viral or bacterial infection post-mortem. However, one would expect samples taken during life and prior to the administration of such drugs to grow cultures or otherwise demonstrate an infection. In K's case there was no evidence in

her organs of the inflammation one would expect with infection and her blood samples taken during life did not grow any cultures consistent with an infection. However, one cannot exclude sepsis.

iii) K did not have myocarditis. It is completely different under the microscope. In myocarditis an inflammatory process causes the death of the myocytes. Thus, under the Dallas criteria you can diagnose myocarditis if you have inflammation and myocyte damage or you can have borderline myocarditis if there is evidence of inflammation without myocyte damage. You cannot diagnose myocarditis based on myocyte damage alone. In K's case the process was the other way round. The myocyte damage or necrosis had occurred first and was being followed by an inflammatory response.

iv) In general, myocardial damage and its resolution is slightly slower in children than in adults. In adults by 48-hours there would be a significantly florid inflammatory response. In broad terms the upper end for the damage seen in K's heart is 36 to 48 hours.

v) Dr Palm accepted that her conclusions were not consistent with what Dr Ashworth said in his report, although she sought to explain how it might be that he had expressed himself as he had. She stood by her conclusions and confirmed that Dr Cary had seen the slides and confirmed what she saw.

vi) Adrenaline can cause damage to the heart myocytes in the same way that cocaine can. However, in order to do so the adrenaline has to reach the tissues. As K never regained cardiac output after she collapsed it is hard to explain how adrenaline could have caused the damage.

vii) Two sets of slides were made which were microscopically examined. The first set were produced on 10 April and were of good quality. They do not deteriorate after they have been taken. The second set were taken at the second post-mortem and were of poor quality as the heart tissue had deteriorated in the six-week-old interval.

103. The oral evidence from the experts had some albeit not a significant impact upon the schedule of agreement and disagreement particularly in exploring and eliminating other possible causes of K's death. It also allowed for detailed exploration of issues relating to the timing of the event that caused the myocyte damage which led to the cardiac necrosis and ultimately her death. The chronology straights some of the timelines. What was clear there was that the medical evidence and indeed the scientific evidence could not provide any clear-cut time limits but rather indicative relatively broad parameters. In particular Dr Cary emphasised the importance of putting the medical and scientific evidence into the broader evidential landscape and the advantage that I had over the doctors or scientists in fitting the pieces of the evidential jigsaw together.

104. The consequence of the detailed exploration of the expert evidence was that the Local Authority amended the threshold to withdraw the allegation of deliberate administration and the parents and grandparents accepted that cocaine ingestion

caused cardiac necrosis and ultimately K's death. That being so I might have refrained from including much of the medical evidence from this judgment but ultimately consider that a full picture (closer to impressionism than photorealism) of the evidence ought to be recorded. The interplay between the scientific and medical evidence and the relative precision of some aspects also seem to me to be important to record.

Factual Evidence

105. The chronology at appendix A contains extracts of the written and oral evidence of the parties and relevant documentary evidence. It also contains my findings in respect of certain disputed matters of fact. Those conclusions are based on my evaluation of all of the evidence I have read and heard and, on my conclusions, as to the credibility of the witnesses which I set out below. My findings on the central questions of how K came to ingest cocaine and the role the mother, father 1 and the paternal grandmother played in that and their responsibility in terms of any failure to protect K from the risk of cocaine ingestion will be the subject of consideration later in this judgment.

106. Although there is a significant amount of evidence which is relevant to the central questions and which sheds light on certain aspects of them or matters relevant to them the evidence of the mother, father 1, the paternal grandmother and the maternal grandmother are plainly of considerable importance as they are the primary sources of information as to the events of the third and fourth of April. They are also significant sources of information as to issues relating to domestic abuse. Their accounts of their drug use are also important although the other evidence from hair strand testing, searches, historical documentary evidence, phone records and L also bear upon that question.

107. I therefore turn to my evaluation of the parties as witnesses.

The Mother

108. The mother's evidence is principally contained in her written statements, the records of interview and the videos of her interviews. She declined to give evidence although Dr McEvedy said she was fit so to do. She is therefore something of an unknown quantity as I have not been able to hear and see her account in person, to see her reaction to rigorous testing of her account, to get a sense of her as a person and of how she interacts with others in particular her behaviour in the presence of father 1 and the paternal grandmother. Mr Twomey set out a lengthy list of factual matters which the mother would have been asked about and which would have potentially undermined her credibility. Where the only real sources of evidence about an issue are from the mother and father 1, Mr Twomey says, and there is considerable force in his submission that the court should discount the weight of the mother's evidence and perhaps draw inferences against her particularly if satisfied she had no real excuse for failing to attend to give evidence.

109. However, although the mother has not been subjected to the rigorous testing from 4 silks that father 1 was I have been able to get some sense of her character and reliability as a historian from the audio/video recordings of her interviews. These have

at least enabled me to see her give her account and to see her questioned on difficult issues; although I entirely accept that the questioning by the police officers cannot properly be compared to the questioning that the mother would have undergone with Mr Tyler, Mr Twomey, Ms Cook and Mr Howe. They of course were in possession of far more information on which to test the mother and the nature of cross-examination and police interview are different. The recordings are spaced out over some eight months. The total amount of footage is something around 8-9 hours although in her first interview the audio is not working but a written record exists. The subsequent interviews in any event total several hours of audio and visual material. In the interviews in May and July she comes across as open, talkative and eager to give an account in most respects. In the January 2020 interview she is much flatter and more guarded. This might be in part a product of the impact of K's death and her separation from the children and the impact of the criminal investigation in these proceedings but I think also was linked to the content of that interview which was largely focused on drug related issues. In the earlier interviews there was I thought a difference in her approach to answering questions in relation to drugs as compared to other issues.

110. When discussing the children, their medical histories, the events of the first week of April 2019, and certain other matters she was coherent, articulate and detailed. The level of detail that she was able to provide about all sorts of matters where the dates of medical appointments, telephone numbers, makes of phones and medical treatment given show that she has an extremely good memory. The details of the medical treatment that K was given after she collapsed were accurately reflected in the medical notes. She is also clearly highly organised. The account she gave of collating documents, organising them in order to demonstrate that father 1 had been living with her and the children since 2017 (when he claimed they separated) was another facet of her ordered and detailed approach. She kept a log of record and significant matters which either occurred or what she remembered in order to incorporate them into her evidence. The level of detail that she was able to give in various respects was both impressive in terms of her memory but also in my view indicative of the accuracy of her recollection. Her recall of father 1's telephone numbers, of the events on her return home on the afternoon of the fourth and subsequent events including telephone calls made and received are a few examples of this ability. Her ability to tell a story from start to finish in chronological order and in considerable detail was a huge contrast to father 1. In the interviews in May and July she seemed eager to provide information and in the main appeared to be very open and cooperative. She did not simply agree with matters put to her or try to fill gaps but demonstrated an ability to reflect in order to be accurate. An example was when it was suggested that social services had been involved on 3 April, because a telephone call had been received from a local authority number and she was able to think through to the conclusion that the nursery may have a Local Authority linked number. I did not get the impression that she was a person who sought to fill gaps by speculation but rather preferred accuracy.

111. Her description of the two particular events of physical violence was also detailed in particular that of 16 April. She referred repeatedly to the incident where father 1 allegedly smashed her head on the stairs. However, the absence of any detail of any other incidents whether given in her interview or in her statement, particularly having regard to the log she kept of things she recalled for inclusion in her statements

suggests that she was unable to recall any other specific incident of father 1 using physical violence against her. Given how good her memory is and how organised and detailed she is this seems inconsistent with frequent incidents of physical violence. Were there to have been other incidents where father 1 had used a similar level of physical violence the mother's nature suggests a detailed account would be available. The two incidents that she does describe are of a sort which appear to be similar in terms of the alleged level of violence which she says occurred very regularly and so it seems unlikely that the explanation is that those two were more memorable by their nature. Her overall description of the nature of their relationship in 6 July interview the horrible ending characterised by physical abuse did not seem to marry up with her later description of it. She describes him as being verbally abusive up until 2014, then describes the incident when he grabbed her hair and smashed her head on stairs and then the next incident she describes is that when he kicked her in the stomach on 16 April 2019. The general effect of her account is of arguments although she says in general terms that he hit her. Her description of why L chose to stay with the maternal grandmother seemed to be more linked to the arguments and verbal abuse rather than L regularly witnessing father 1 hitting the mother. L herself of course refers to father 1 pushing the mother rather than to him hitting her.

112. The mother's references to father 1 being threatening towards her, were she to have reported his drug dealing are also fleeting and lack detail. In amongst the huge amount of material dealing with other matters the references to him threatening to bury her in the park, of having her kids taken off her and to her being fearful of the consequences and not wanting to be hit any more are lacking in context or detail. She refers to regularly asking him to leave in connection with it and being regularly hit or the house being smashed up. This does not seem to be consistent with the rest of her evidence or other evidence in relation to the extent to which physical violence or violence to property was a feature of the relationship. Given how regularly she did ask him to leave it seems likely that either it was not always connected with drugs or that if it was it was not accompanied by the response from father 1 that she seeks to depict. I think her apparent reticence and perhaps fear when telling the police that he was a dealer ("do I have to say… Can you make sure I'm safe") is genuine but this may be a fear of the consequences from father 1 but might also be the fear of consequences from others or a general fear of acknowledging the role cocaine played in the household.

113. The mother's evidence in relation to drug use both herself and father 1's involvement is different to that which relates to the events surrounding K's death. The mother's account is less willingly given and is less detailed. Her initial interview speculated that K may have been exposed to drugs at the nursery or in the park and yet by her later account the most obvious source of cocaine exposure was father 1 and the bag he allegedly carried with him into and out of the mother's home on a daily basis. She later speculated that the drugs may have come from him; by him sniffing it or taking it in the house and it dropping onto her. Her own account of her drug use has changed. In the early interviews she referred to use every 4 to 6 weeks, by January 2020 she was accepting use every 2 to 4 weeks. In her response to the threshold in April 2020 she maintained she had not used drugs since February 2019. The Lextox report of June 2020 resulted in the mother admitting that she had used cocaine on 6 April 2020 and the 7th May. The information provided about the mother's overdose in June did not include reference to her having taken cocaine until that was disclosed by Dr

McEvedy. Thus, there is a significant question mark about the mother's frankness in relation to matters relating to drugs. In the January interview when told of L's account the mother's response was simple denial in relation to it being possible for L to have witnessed drug dealing in the house, to where drugs were kept, to where L had seen them being used. When taxed on how she could have known father 1 was taking cocaine on a daily basis she maintained that she never saw him use cocaine in the house but knew he was on it because of his appearance and behaviour. I am thus unwilling to accept that the mother's evidence in relation to matters relating to drugs is reliable.

114. At times during her interviews the mother's tone changes when talking of father 1, she spoke warmly of the children's love for him, she accepted that she was jealous of the possibility his ex-girlfriend might have been on the scene somewhere, she seemed almost to have some grudging admiration for father 1's ability to go out and party after their initial arrest. It is self-evident that their relationship endured for many years and that P was conceived only shortly before K's death and following a miscarriage in February 2019. The mother herself accepts that when she threw father 1 out she very quickly allowed him to return. Even when describing 16 April assault, she spoke of him having come back the next day and there did not seem to have been any further consequence. What is perhaps significant is that she told him to leave on 22 May when she was told by the police that cocaine was a factor in K's death.

Father 1

115. Father 1 gave evidence from the witness box over a period of half a day and remotely for the best part of the day. Mr Twomey had sought to adjourn the commencement of his evidence until Monday morning as father 1 said he felt ill and had done for two days. In the absence of any medical certificate and given he was at court I declined that application. On Monday morning I was informed that he was still feeling unwell and was unable to attend court and so agreed that he should give evidence remotely. The medical certificate that was provided on Monday recorded that he had told his doctor he began feeling unwell on Thursday after eating some food. This was not consistent with what I was told on Friday. I bear in mind that he may have been feeling unwell and inevitably must have been feeling anxious given the importance of the case. He did not appear to be obviously unwell when he gave his evidence although he asked to leave court on a couple of occasions to go to the bathroom in connection with feeling unwell. He was measured and even tempered, he was polite and answered questions. He was not obstructive or combative. On many occasions he said that his memory was poor as a result of the traumatic events he had experienced with the death of K and the removal into care of his children. He was unable to recall really with any detail the events of the third or fourth of April without significant prompting by reference to other accounts that the mother had given or by reference to photographs or telephone records. His first statement said that he was not at the mother's home on the third or overnight. His second statement appeared to accept that he was. In his oral evidence he was very vague but ultimately accepted that he was in the home overnight from the third until the fourth and was in and out during the day on the fourth. His recollection of events of the third during the day or the evening and night was almost non-existent. He seemed to recall playing FIFA late into the night and texting a friend until about 6 AM although later said he did not recall using his

phone throughout the night. He seemed to have a better recall of the day of the fourth and his description of K sleeping on the sofa most of the day with his mother looking after her was at least consistent with the paternal grandmothers. However, I was far less satisfied as to his account of the reasons for his coming and going during the day. His account of having visited a friend and having taken his dog out for a couple of walks was given for the first time from the witness box and I was left unsure of what his movements really were or the reasons for them. Whilst he may have taken the dog to the toilet and whilst he may have visited his friend, I don't believe that he was simply collecting some clothes and simply taking the dog for a walk. In relation to his drug use he maintained in his oral evidence that he had never taken drugs at the mother's home and repeated this several times. His second statement though had accepted consumption of drugs at the mother's home in the circumstances she described. It was this statement that he told his counsel and Ms Isaacs was the accurate one and that he had remembered more as a result of reading the mother's statement. However, he now maintains that it is accurate in some ways but not in this. I am satisfied having regard to the mother's evidence and his own statement of 30 August that he did consume cocaine in the house and his current position is a lie. His account of how frequently he took drugs was also highly variable. On occasions he appeared to accept weekly consumption in others he appeared to assert monthly or bimonthly consumption. Given his long involvement in drug use and that of his mother, I am satisfied that his assertion that he was unaware of the possibility of cheating a drugs test was untrue. His observations in the covert surveillance about the wraps was to accept the bag and wraps were his. However, when cross-examined about the 'pings' he denied any knowledge of the meaning of that word and said he would refer to them as tickets. The impression I got was that he was trying to then distance himself from the wraps. However, in the surveillance he did indeed refer to the wraps as tickets and referred to them being in his bag, although he did not accept the jumper, they were wrapped up in was his. The conversations recorded covertly contain clear indications that steps had been taken by the family in advance of this search and their arrest to distance themselves from drugs. The partial conversation about father 1 and R speaking is hard to see in any other sense. The fact that the mother was notified in advance of the possible link with cocaine and K's death and her communication of this to father 1, clearly provided an opportunity for anyone who wished to remove evidence of drug use or dealing before the police action. The photographs of the paternal grandmother's home show a house in a state of considerable disarray and this might explain why the wraps were still present in the house- they had simply not been noted during any clean up. His account of his work history was also hard to follow and so highly variable that I was satisfied he was not being honest about it. Whilst I'm prepared to accept that he was making deliveries on a motorbike what he was delivering is more difficult to accept. He did not take the opportunity of producing any documents to support his assertion that he was working as a delivery driver for delivery or a Chinese takeaway.

116. His evidence in relation to his alcohol consumption and his behaviour under the influence was to minimise the frequency and extent of his consumption. He denied being possessive or aggressive when under the influence and although he accepted that others had said they were concerned about his drinking he said this was not because of his behaviour but concern over his welfare. His response to questions about arguments or violence or threats was essentially to say that they argued and shouted, occasionally using bad language (not in front of the children) that he denied

ever having laid hands on the mother or of having threatened her. He accepted he had clipped L or perhaps pushed her away when she kicked him. His general position was that the Mother had given as good as she got and he frequently responded to a question by saying "Yes, I did that but she was as bad". Another response alongside 'I can't remember I've blocked it out' that appeared very frequently was "Why would I do that, that would be stupid? Why would I kick the mother in the stomach that would be 'stupid'?" However, in relation to his memory he was on occasions able to recall very clearly and spontaneously what the position was; he remembered very clearly that two balloons filled with white powder were tested for drugs and were negative. I am satisfied both in respect of his memory and behaviour that his responses were a device to enable him to distance himself from events. I am prepared to accept in relation to his memory he may have tried to forget events of the 3rd and 4th April and the days surrounding K's death although I will return to the possible reasons for this. In relation to his responses to behaviour which showed him in a bad light, I am satisfied this was to deflect responsibility, for instance his attempt to lay responsibility for his hitting L on her by saying that she had kicked him. In many ways his evidence was inconsistent with itself but also with the mothers, maternal grandmother and paternal grandmother who although they were not always consistent with each other were pretty consistent in relation to father 1's alcohol misuse and propensity to bad behaviour when drunk. His evidence of his involvement in drugs was also inconsistent with much of the other evidence whether it was the documentary record or that of the Mother or L or his own mother.

117. I have no doubt that he loves his children in his own way. However, that doesn't seem to extend to doing very much for them whether in terms of physical care or financial support. When I asked his mother what she thought his view of father 1's role was she was unable to identify anything that she thought was his. All the evidence points to the mother being in effect the sole carer for the children with the support of her mother and the paternal grandmother with father 1 being present in the house but peripheral in terms of his role in caring for them. Rather than being a hands-on father sharing the responsibility for raising the children as it seems he could have done given he was not in regular employment he seems to have pretty much done his own thing rather than sharing the burdens and benefits of raising his children. His explanation for not taking K to the GP's on the afternoon of 4 April was hard to understand. On the one hand he accepted that she appeared to be deteriorating and he said he was worried about her condition as was his mother. He said that he did not take her to the GP's because she always wanted her mummy and he worried that taking her would have caused her stress which might have caused her to have an epileptic seizure. I have been unable to detect anything in the medical records which support K seizures as being stress-related but in any event even if father 1 believed they were, it still does not satisfactorily explain why he made no effort to either take K to the doctor or even to call to speak to a doctor or to call 111 when he thought she was really unwell. M had been seriously ill with meningitis and K had some health scares so his lack of action seems surprising. After K was taken to hospital the phone records and the mother's account support the conclusion that he did not attend the hospital until some point after 10 PM. He knew at about 5:30 PM when he and the mother spoke that K was being taken by emergency ambulance to UCH with suspected sepsis and yet he did not attend until some 4 ½ to 5 hours later. His explanation for not attending related to the need to look after the dog until a friend became free and an unwillingness to leave the dog alone at home due to previous

complaints about the dog barking when left alone. I simply cannot accept those as adequate explanations for failing to attend at the hospital when his daughter had a possibly life-threatening condition. His phone records suggest he was at the mother's home for lengthy periods, although not taking her calls and for far longer than was necessary to get some bits and pieces ready to take to hospital. He was then out and about for 45 minutes; far longer than was necessary to drop the dog off at his friend's house before returning to M's home and remaining there for a further 45 minutes. Thus, his evidence as to his movements that night was also highly questionable.

118. I am satisfied that much of his evidence was untrue particularly in relation to his involvement with drugs. I am also satisfied that his evidence in relation to his use of alcohol and drugs and his behaviour when under the influence was in significant part untrue. I am also satisfied that he has a better recall of the events of the 3rd/4th April than he is prepared to admit. He was therefore overall an unreliable and often dishonest witness.

Paternal Grandmother

119. The paternal grandmother gave evidence from the witness box and was cross examined in person and remotely. As Ms Cook said she deserves some credit for her readiness to give evidence; in comparison to the mother and even to father 1. She has a hearing difficulty but appeared to manage well with the use of a headset. She was in the main calm and measured; at times she seemed emotionally flat and I wondered whether it was the effect of medication. She was not obstructive or evasive and by and large gave factual answers to questions. Although she was prepared to make some criticism of father 1 in terms of his alcohol consumption, his behaviour when under the influence of drink and his consumption of drugs it became clear over the course of her evidence that her criticism of him was tailored and that whilst making criticism she was also minimising his behaviour. When asked questions on behalf of father 1 she said that although the mother had complained about father 1's behaviour she said she got the impression from the mother that she gave as good as she got. She denied that father 1 became aggressive when under the influence of alcohol but rather was annoying; she had earlier described him as possessive and paranoid about the mother having affairs. When asked about the amount that father 1 drank she described his drink of choice as a low alcohol drink which he would drink half a bottle of and leave the rest in the fridge. These were very far removed from the impression she gave in answer to earlier questions and the general concerns that she had expressed about, for instance, the level of father 1's drinking. She maintained that had father 1 been dealing he would have told her that as he was so open and emotional. She described him as devoted to his children although was unable to identify any role that he took other than play music to them or sitting watching programmes with them on television. She could not believe that he would be capable of being violent to the mother, particularly not kicking her. She appeared to be similarly protective in respect of her daughter Q and her involvement in drug use.

120. In relation to her own drug use she denied any use of cocaine in the relevant period and indeed denied having taken hard drugs historically in particular crack cocaine. She denied knowing anything about crack cocaine including how it smelt when burnt and could not explain historic documents which recorded the children saying she smoked crack cocaine or indeed documents which recorded her admission to the same. Her explanation as to how she came to take LSD was extraordinary. When

cross-examined about whether she had attempted to manipulate the hair strand testing results she maintained that her hair could not be straightened with straighteners and denied any knowledge of the possibility of interfering with the results through the use of dyes or otherwise. She appeared rather insouciant at the suggestion. She had given the impression that she had done nothing to her hair between the May and August hair strand testing but on cross examination by Miss Hyatt it became very clear that her hair did need attending to between the two which may have included the rebraiding of her hair. She sought to distance herself, father 1, R and Q from use of and handling of cocaine and in particular crack cocaine.

121. On the other hand, her accounts of what occurred on the fourth of April when she was looking after K and M appear to be more frank and full than her evidence in relation to father 1's behaviour or drugs in general. Her description of K being lethargic and sleeping on the sofa, waking up a couple of times and coming to give her "granny cuddles" seemed a genuine memory. On the other hand, she was unclear as to father 1's coming and going and the reasons for it. Part of her evidence which seemed hard to accept was her assertion that she considered K to have been quite unwell; 7/10 by mid-afternoon, and yet she did nothing about it. Her explanation that as K's grandmother she did not have the authority to take her to the doctors was plainly an excuse. But what should one infer from this? Did she fail to take care because she knew something had happened on her watch which she wanted to cover up or had she not really appreciated how poorly K was and was overstating her level of concern in her evidence or is her character such that she would not take the initiative particularly given her previous history with all forms of authorities. The attitudes revealed in the covert surveillance demonstrate more than anything her desire and that of father 1 and Q to protect themselves. Their hostility to the investigation into the death of K insofar as it impacted on them and might have disclosed wrongdoing on their behalf shows an unattractive focus on their own self-interest rather than shining a light on what caused the death of K.

122. Overall, I found the paternal grandmother to be a generally unsatisfactory witness albeit with some moments of honesty and transparency but with a significant element of minimisation or evasion to distance herself and her family from connections with the drug that caused K's death and from behaviour that reflected badly on father 1. The credit that she garners for willingly giving evidence does not counter the effect of her evidence to any great extent.

<u>The Maternal Grandmother.</u>

123. The local authority accepted that the thrust of the expert evidence supported environmental contamination of maternal grandmother hair rather than consumption. It was also accepted that the traces of drugs found in her premises were not supportive of her using or storing drugs but were more consistent with her own explanation of items in her house having their provenance in the mother or father's properties. She therefore gave evidence as a witness albeit I had permitted her to remain a part of the proceedings in order to allow her legal team to support her in giving evidence. She has been unwell throughout the proceedings and in particular in April contracted suspected Covid 19. She gave evidence from home by telephone. This medium appeared to work well for her and she was able to give evidence over the course of about half a day.

124. The maternal grandmother appeared to answer questions as fully and frankly as she was able to. She did not seem to elaborate or to exaggerate in order to support the case that the mother puts in respect of domestic abuse but rather said what she herself knew. For instance, she said she had never heard rumours of father 1 being a drug dealer on the estate; it would have been easy for her to say she had were she tailoring her evidence. She did not appear to hold any particular animus towards father 1. She was also complimentary about the paternal grandmother and her treatment of the children. Her account of what L described of her life and the arguments was consistent with what she herself had seen. Her evidence supported the conclusion that father 1 had a tendency to drink heavily and to be jealous and argumentative or aggressive when in drink. However, her evidence did not support father 1 as being physically violent or seriously threatening. Her evidence of saying to the mother that the relationship was toxic did not depict it as one in which she felt the mother was seriously at risk from father 1 but rather one which was unhealthy and which exposed the children to frequent unpleasant arguments.

125. Her description of father 1 as being a Jekyll and Hyde character chimes with descriptions of him by others and indeed observations of him in giving evidence. The maternal grandmother's description of him as being kind and considerate and prepared to do anything for you when sober is one I could see having seen him give evidence when he was polite, calm and placid. However, I see no reason to disbelieve her description of the other side to him when drunk of being a nightmare, capable of smashing items and highly suspicious of the mother. Whilst the maternal grandmother said that she was not aware of any violence prior to K's death she said it would not surprise her if it were true. She said she didn't think the mother would have told her as she knew she would have reacted by having words with father 1. However, she does not appear to have witnessed anything in her daughter which made her think that she was being subjected to violence and indeed the mother's case is that she was only subjected to physical violence on limited occasions. However, it is clear that the mother did not tell her mother everything because the maternal grandmother was completely unaware of her daughter's use of cocaine. Given the maternal grandmother's utter disapproval of drug-taking it is perhaps no surprise that the mother did not ever let on that she was consuming drugs. How many daughters would tell their mothers? Her account of the incident after K's death was broadly consistent with that given by both the mother and father 1. However, bearing in mind her description of L as a quiet and placid girl it is reasonable to infer that L had seen something quite shocking to cause her to attempt to kick father 1 which resulted in him hitting her. The mother's immediate complaint to the maternal grandmother of father 1 having kicked her I accept was made.

Discussion and Evaluation

126. In determining the central issues of what was the cause of K's death and whether her death was caused or contributed to by the care given to her not being what it was reasonable to expect I stand back and survey a wide canvas. That means seeking to incorporate and take account of all of the evidence; that of the parents and other carers, the expert scientific and medical evidence, other evidence from police, from medical records, from the children. In seeking to apply that wide perspective one must be cautious about giving too much weight to individual items of evidence and

compartmentalising the evaluation. Of course, in relation to medical evidence in particular there are occasions when it may amount to an absolute answer as to a particular issue which might have the effect of ruling in or ruling out some particular hypothesis. In this case there are almost no absolutes in terms of what the ultimate issue is.

127. Of course, the parents and the paternal grandmother now accept that the medical and scientific evidence establish, on the balance of probabilities, that K's death was caused by cardiac necrosis arising from cocaine ingestion and so that issue no longer needs to determined. However, the acceptance by the parents of the effect of the medical and scientific evidence was in reality accepting the inevitable. They were of course entitled to test the evidence in these proceedings and I entirely understand how impossibly difficult it must be for a parent or grandparent to accept that the death of a child was caused by drugs which one or more of them brought into the household where K ought to have been safe. I have no difficulty in reaching the conclusion myself that the combined effect of the detection of cocaine in K's hair and urine, the myocyte damage leading to cardiac necrosis, the evidence of deteriorating cardiac output with raised lactate and developing oedema and K's sudden collapse in the morning of 6 April as her heart finally gave out lapsing into pulseless electrical activity demonstrate that she is another tragic victim of innocent ingestion of an illegal drug.

128. In determining how she came to ingest the cocaine that killed her I have the benefit, which of course the experts did not, of being able to contextualise their opinion evidence by adding it into a much broader picture. In this case the picture is very broad indeed given the volume and variety of evidence. As a result of the stuttering progress of the case I have also been able to read and re-read much of it, to re-watch the video interviews, to reflect on the chronology and all of the evidence contained within it. Over the three months of the case as the very many pieces of this particular jigsaw have been turned over, and been put together by the lawyers, by the experts, by the parties and by me a picture or perhaps more accurately a graphic novel has slowly taken shape which I am confident represents an accurate balance of probabilities story of what has happened in this family which ultimately led to the tragedy of K's needless death.

129. In order to understand how she came to ingest cocaine and the part the family members took in that process one needs to go back in time and follow the trail which ultimately led to 05.37 in the morning of 6 April 2019. What the parties have said since then of course plays a significant part in understanding that trail but the pre-existing evidence also plays its own role. Although of course the credibility of the parties is an important component this is not a case where one of the significant role players is a reliable witness the court can turn to for an honest and reliable account on all issues and where the outcome could be determined simply by concluding that one party's account was to be preferred as the honest and accurate account and where the others could be discarded as being unreliable or dishonest. It is only the maternal grandmother who I considered to be a reliable and honest witness and her evidence whilst important is plainly that of the person who was outside the circle of knowledge of a most important part of the lives of the mother, father 1 and the paternal grandmother, namely that of cocaine consumption. In mapping the trail, I am incorporating either expressly or not evidence and findings which emanate from the

chronology (including hearsay evidence from Swansea and social services' records), from my assessment of the parties' evidence, from the medical and scientific evidence and all that I have read and heard.

130. The paternal grandmother's life has been punctuated with tragedy, very violent domestic abuse, mental health difficulties and drug and alcohol misuse. I acknowledge and accept that historic material in the chronology is hearsay and sometimes second or third hand hearsay. Some of it is consistent with or corroborated by other direct evidence or the matter recorded is consistent with other evidence which satisfies me that it is appropriate to rely on it. Other material I am less comfortable with, including the historic references to the paternal grandmother's crack cocaine use. The chronology suggests that her children were exposed to elements of all the consequences of this. The chronology also suggests that her children and grandchildren suffered incidents including inadvertent prescription drug ingestion suggestive of a chaotic domestic environment where the children might have been much loved but were periodically exposed to emotional or physical harm as a consequence of the emotional impact on the paternal grandmother of her own traumatic experiences. Father 1 himself has suffered extreme trauma in the loss of his two siblings in a house fire and the death of his father. He appears to have been exposed to the paternal grandmother's experience of domestic abuse and drink and probable drug misuse. His forensic history shows periodic criminal activity dating back to him being 16 and even at that age drugs were a feature of his life where his conviction for theft and burglary resulted in a recommendation that he participates in assessment of drug use. By his early 20s his involvement in drugs had not abated when he pleaded guilty to possession of cannabis and cocaine and received a community order. References to father 1 occasionally showing a propensity to violence; an altercation with a girlfriend, the paternal grandmother's reference to him being violent to Swansea social services, the reference to him kicking a door and damaging it.

131. In contrast to father 1's background that of the maternal grandmother and the mother seems relatively mundane. The maternal grandmother in particular seems to have lived her life and raised her children without any of the traumas that the paternal grandmother and father experienced and without the knock-on consequences for the mother that have perhaps under pinned father 1's own chequered track record. The maternal grandmother and her other children appear to have lived their adult lives uncontroversially. The mothers caution for shoplifting when she was 12 and her acceptance that she first took cocaine and when she was about 18 indicate a very different person and lifestyle from that of father 1 although might perhaps give a hint of an emerging rebellious streak. From L's birth when the mother was about 19 she would appear to have focused on raising L including getting her own flat.

132. Meanwhile father 1 continued his drug blighted lifestyle. In 2008 he pleaded guilty to supplying a Class A drug and received a 12-month suspended sentence. The supervision order and program requirement which came with it appeared to have no effect being convicted again in 2009 possession of cannabis and cocaine. This was on the basis of personal use.

133. So, by 2011 when the mother and father met and began a relationship, they would appear to have been quite different characters and having led quite different lives. Who knows what drew them to each other and led to them developing a long-term

relationship. At the time they met it would seem that father 1's previous partner was pregnant with a baby girl who was eventually taken into care.

134. Father 1 put himself forward as a carer for his daughter saying he had not used illicit drugs for a period of time that cocaine and its metabolites were detected at a high level indicating regular cocaine misuse together with the consumption of alcohol.

135. It is about this time when the mother says that father 1 was first violent to her and I accept that there was a violent incident of some form at this time. It is clear from the totality of the evidence that father 1 is occasionally prone to losing his temper. This is an aspect of his Jekyll and Hyde character which the mother, maternal grandmother and paternal grandmother have all spoken of and appears to be well documented. It would appear to be linked to alcohol and/or drug consumption and as father 1 is a frequent consumer of both the emergence of Mr Hyde whether simply angry, verbally abusive, damaging property or resorting to physical violence on occasions which seem to have been a regular blot in the life of the mother and others in father 1's close circle. Father 1 denies ever having been violent to the mother or spitting in her face. He accepts there have been times when they argued and he says this was usually the mother shouting and screaming at him. He denies smashing a television and ruining the blinds. The evidence of the maternal grandmother of her knowledge of the frequent rows her witnessing the television hanging off the wall, L describing father 1 shouting at and pushing the mother all further corroborate the evidence of father 1's capacity to behave badly. At the lower end of the spectrum of his behaviour I'm prepared to accept that it falls within the broad range of poor behaviour acknowledged in *Re A* as not amounting to abuse. However, at times his behaviour clearly passed that threshold.

136. The paternal grandmother says she knew that father 1 was possessive about the mother and that he would be sometimes verbally abusive and aggressive to the mother. She says she was told about this by the mother. However, she says the mother also rowed with father 1. She says that the mother told her that father 1 had pushed her and on one occasion she said something about him banging her head on the wall. Father 1 denied it and said the mother was a liar. She was aware that father 1 was paranoid about the mother.

137. The evidence though also supports the proposition that the mother and father loved each other, saw good in each other and wished to establish and continue to raise a family. The description of father 1 being someone who would do anything for you is a reflection of his good side and it would seem that the mother also saw this. Notwithstanding his Mr Hyde tendencies there was obviously an attraction that the mother felt for father 1; she displayed some jealousy of a possible link with a former girlfriend and I thought spoke somewhat wistfully or admiringly about father 1 at times. Thus, their relationship does not appear to have been straightforward but complex. The maternal grandmother described it as toxic by 2019 but this was preceded by seven odd years when that toxicity had either not been present or was only slowly building. The evidence of the mother, the paternal grandmother, the maternal grandmother and father 1 all supported the conclusion that following a row the mother would throw father 1 out but that he would return very shortly afterwards possibly even the next day and the relationship would resume. The mother never saw the need to seek help from police, the GP, a health visitor, her family or the courts. It is of course possible that she was experiencing domestic abuse but through shame or

fear of father 1 or caught in a complex love hate relationship she felt unable to report it.

138. The evidence in my view supports the conclusion that the relationship deteriorated over time in particular in the period 2018/19 when father 1's alcohol consumption became a significant problem and the atmosphere in the mother's house more toxic. However, the relationship was deteriorating it was a continuing one and I do not accept that father 1 separated and moved out of the mother's home as he claims. Why the mother said he did not live there I'm not sure perhaps benefits issues might explain it but it is not something I need to determine. All of the evidence from the mother the maternal grandmother, and the paternal grandmother and indeed very much of father 1's own evidence demonstrates that he was part of the mother's household with his belongings, his PS4, his fish tank being there and he was treating it as his home albeit doing very little to support the household whether financially or practically. The health visitor and other notes record father 1's presence in the home on a regular basis. The mother and father continued to grow their family from M in 2015, and the mother falling pregnant and giving birth to K in January 2016.

139. Throughout this period father 1's involvement with drugs appears to have continued. Three months after M was born father 1 was arrested for possession of cannabis. He was keeping it in a safe at the mother's address. Electronic scales bags and a number of phones were recovered. He maintained it was for personal use and was cautioned accordingly. He said it was kept in a safe to ensure the children didn't have access to it. The mother appears to have told the Local Authority that she had no idea that the safe and the drugs were in her property and told the local authority father 1 did not live at the address. I cannot accept that this was the case. It was the mother's home and she and father 1 both had a shared use recreationally of drugs.

140. It is around this time that the police intelligence indicates that father 1 was a runner or courier for cannabis. His long-term involvement in possession and supply of drugs, his regular usage, his subsequent involvement, his hair strand tests all point to the probability that in 2015 he was a small-scale runner of drugs. It would seem to be a source of income for him although he may also have been delivering food for a living as well. The mother says that father 1 never contributed financially and never had any money yet during interviews recounted family phones he, she, and the children had, along with their tablets, flat screen televisions and the like seen in the photographs of her flat. It is not clear where the mother got the money to support her lifestyle and it seems likely that father 1 contributed in some way from the proceeds of his drug-related and other delivery activities.

141. Thus, some form of personal attraction to each other, their children, their shared interest in recreational drugs and the benefits each perhaps found in each other through the provision of a home and financial support contributed to the continuation of their relationship. The mother comes across in the interviews as an intelligent articulate woman who is prepared to say her piece; at least in the May and July 2019 interviews. The description of the maternal grandmother in particular of the rows between the two of them which she says she periodically overheard or saw the aftermath of together with L's account and that indeed of the mother father and paternal grandmother all support the conclusion that the mother was able to stand up for herself and to eject father 1 from her home when he was out of order. It also

shows she was prepared to take him back when he had sobered up; even on 17th April when he had assaulted her the day before.

142. Following N's birth in 2018 father 1 is still recorded as present in the mother's home during health visitor appointments. She told the health visitor that she had a lot of support from father 1. Father 1 in particular draws my attention to the absence of any reports to authorities in support of the mother's claims of domestic abuse. The mother in contrast reminds me of the difficulties victims of domestic abuse face in reporting that abuse even when the opportunity arises. In her later police interviews the mother characterises the relationship with father 1 as horrible and seems to backdate that for its entirety. In particular given the picture presented by the documentary records, or more accurately the lack of any documented history of domestic abuse, together with the evidence from the paternal grandmother, the maternal grandmother, L and father 1 and the mother's failure to give evidence in support of her allegations of domestic abuse lead me to conclude that save where they are corroborated they cannot be established. So in 2018 I do not accept that this relationship was one which was characterised by domestic abuse in the form of frequent verbal and physical abuse or of threats to bury the mother in the park, to report her to social services or to remove the children. It seems fairly clear that by 2018 the relationship was deteriorating more rapidly and developing the level of toxicity which led the maternal grandmother to urge the mother to end the relationship for the children's sake if nothing else. I accept that there were frequent arguments precipitated by father 1's drinking and drug use which caused him to become possessive and abusive which led to the mother throwing him out and led L to want to spend increasing time with the maternal grandmother rather than at home and the toxic atmosphere there.

143. The mother's account of her drug use has undoubtedly shifted and been marred by lack of candour or frank dishonesty. Her initial account was of consumption every 4 to 6 weeks. This later shifted to consumption every 2 to 4 weeks. Her description was that this took place primarily at home. She said that she did not take drugs whilst she had the care of the children. However, whilst K and M may have regularly stayed with the paternal grandmother the evidence of N's staying away overnight is very thin indeed. There is some evidence that he stayed perhaps one night with the maternal grandmother but on the mother's lowest assessment of frequency of drug use in N's first year of life she would have taken cocaine on roughly 26 occasions and there is no suggestion at all of him having been away from her with that sort of frequency. Indeed, he was only one in January 2019. That suggests he would have been in the house on occasions when the mother and father consumed cocaine. Her assertion as recently as April that she had not taken drugs since February 2019 was demonstrated to be untrue by the Lextox results in June 2020 showing recent consumption. That prompted the admission from the mother that she had taken cocaine on the anniversary of K's death and again on 7 May. Although she has not admitted as much in the statement she filed recently, the evidence of Dr McEvedy is that she told him she also consumed cocaine and alcohol with the overdose of antidepressants. The consumption of cocaine on the anniversary of K's death seems quite extraordinary but as the mother has given no explanation nor been questioned on it I am unsure what to make of it. The timing of the Thursday 7 May consumption postdates the conclusion of the expert evidence and the pause that I afforded the parties to consider their response to that evidence. On Monday 11th of May the mother filed her response to

the threshold accepting in that document that K's death was caused by cardiac necrosis as a result of cocaine ingestion.

144. The Chemtox report which tested the hair samples taken from the parents when they had little or no opportunity to do anything which might have interfered with the testing process shows that during the summer of 2018 through to the period of K's death the mother was consuming cocaine on an increasing basis. The consumption of alcohol appears to have tailed off which would coincide with the mother's pregnancy. In contrast the Lextox report shows a reducing consumption of cocaine and cocaine itself is not detected in the samples representing January to February and February to March which is a period when the mother accepts, she took cocaine. If indeed the mother's evidence of fortnightly use is accurate, she would have taken cocaine on several occasions during that period. Dr Cirimele stood by the results obtained by his laboratory in respect of the mother's hair strand test taken from her on 23 May 2019. The obtaining of the supporting test results themselves took some time to achieve but they support the figures in the report itself. I do not accept that the presentation of the results undermines the conclusions drawn from them. Both Dr Cirimele and Prof Forrest were cross-examined at length on them and I'm satisfied that the Chemtox reports are an accurate reflection of the mother's increasing drug use from the summer of 2018. I do not accept the mother's submission or indeed that of Ms Cook that I should prefer the Lextox reports. There is an obvious difference between them which is that the hair sample is given 10 weeks later and might produce different results in any event although the effect of the expert evidence was that the difference in results was so marked that it was probably outside the understood margin of variability as between laboratories or samples. However, one has to look at the entirety of the evidence relating to drugs rather than simply the test results in any event. The mother's evidence in relation to her drug use is inconsistent and unreliable. She has not come to court to give evidence in relation to it which reduces the weight I'm prepared to attach to it. On the face of it the Chemtox report is a valid and reliable report. The Lextox report deals with a different sample but one has to address the possibility that the sample was interfered with. Given the level of drug use within this household and family and in particular given father 1's long-standing involvement in drugs and his previous experience of hair strand testing within family proceedings I have no doubt that one or more of father 1, the mother or the paternal grandmother was aware of the possibility of influencing the results by hair treatment. I do not consider this to be speculation but a reasonable inference to draw from the long-standing history of drug misuse but also the fact that the Lextox results are so inconsistent with the Chemtox result but also inconsistent with the admitted history of drugtaking. Notwithstanding Ms Isaacs' submissions as to the lack of notice that the mother would have had of the possibility of further hair strand testing, the limited opportunity to undertake treatments, her undertaking to the court and the absence of any evidence in the Lextox report itself of interference on the balance of probabilities I'm satisfied that the explanation for the difference is an attempt to cheat the test by hair treatment. I'm satisfied that the same applies to the test undertaken on the paternal grandmother's hair. Ms Hyatt's cross examination of the paternal grandmother elicited evidence about the possibility of the grandmother having had to do something with her hair which had not been the tenor of her earlier evidence and given the rest of the surrounding evidence which relates as much to the paternal grandmother as to the mother I'm satisfied that on the balance of probabilities the Lextox results were a product of interference with the hair prior to testing. The results

for father 1 and for the maternal grandmother appear to be more consistent with each other which suggests that it was not some radical difference in the testing process which explains the difference in the mother's and paternal grandmothers. It may be that there was an agreement that father 1 should take the rap by producing test results which showed ongoing use whilst the mothers and paternal grandmothers would not. However, that is supposition and not a finding that I either can or need to make. Ultimately, I conclude that the mother continued to use cocaine over the period leading up to April 2019. On the balance of probabilities this was on an increasing basis and perhaps in the earlier part of the period she was using it every 4 to 6 weeks as she originally asserted and by the later part she was using it every fortnight.

145. In his second statement [C79] father 1 says that since 2009 when he was convicted for possession of cannabis that he has been using it on and off and was doing so in 2015 when he was cautioned for possession. Since then he says he has rarely used cannabis and has never used it with the mother or in the children's home. He says he has used cocaine on and off over a number of years since 2009, having snorted it but never smoked or injected it. He accepts that there was a period of time when he was using most weekends, but he denies ever having purchased cocaine himself, or ever having dealt in cocaine.

146. In respect of the mother's use of cocaine he agrees with the mother's account as to the times that they have used cocaine together. He says that at Christmas 2018 the mother had some cocaine and they took it together at a pub on the Essex Road. He also agrees with her account of them taking cocaine together in February 2019. He says that at times when he visited the mother, she would be sitting on the sofa looking out of it. He says he remembers asking 'What is wrong with you?' and that she said 'Nothing' and he remembered saying on at least one occasion 'You look like you've been sniffing coke.' He says she always denied this. He says that the area where The mother lives contains a number of people who use cocaine and that it would be easy for the mother to get it. In relation to his own mother he says he's never seen her use drugs.

147. In closing father 1 has sought to lay the blame for the cocaine that K ingested squarely at the mother's door. He submits that the evidence supports the conclusion that it was the mother's cocaine, that K came across it perhaps in the mother's drawer and that she ingested it on the mother's watch. He thus distances himself entirely from any responsibility. In making this submission father 1 in part relies upon the fact that the mother has not given evidence and the submission that the court should therefore not give any weight to her account of the nature of her drugtaking and that of father 1 or of events surrounding the third and fourth of April.

148. Whilst I have found that the mother was on balance regularly using cocaine and perhaps her regular use was both a cause and effect of the deteriorating relationship and the increasing toxicity in the household that is very far from the complete picture. The totality of the evidence paints a compelling picture of father 1 being the principal actor when it comes to drugs. Ever since his youth he has demonstrated a propensity to use and to supply drugs. The combination of the police intelligence, his own acceptance of drug use, the paternal grandmother's acceptance of his drug use, L's evidence, the results of the covert surveillance, the findings of the police drugs mapping and the hair strand testing all lead me to conclude that father 1 was by this stage deeply immersed in the drugs world both as a user and as a supplier. Although

his role as a dealer or courier might have some relevance to the extent to which drugs were handled, I'm not convinced that it is a really significant issue in the context of his involvement in drugs. On any view he seems to have been a small-scale operator. It is entirely conceivable, and the evidence supports the conclusion on the balance of probabilities that he was involved in the processing of drugs in some shape or form. The covert recordings and his acceptance that the drug wraps found in the jumper in the paternal grandmother's house were his, support the conclusion that he was himself handling drugs by repackaging and presumably cutting them before supplying them onwards. The evidence as to his finances, or indeed as Mr Twomey would say the absence of any significant evidence associated with dealing support the conclusion that he was a relatively low-level operator in the field handling small amounts, limited amounts of money and perhaps largely undertaking the activity in order to provide a supply to himself and to the mother. I do not accept that no weight can be given to L's interview. Read in its entirety it is clearly not the end product of a process of leading questions but in the main is spontaneously given evidence from L. The foster carer records also support her referring to father 1 being involved with powder and also in low-level domestic abuse. Both in terms of the sections of conversation which suggest father 1 had acted to suppress evidence about drug misuse along with his acknowledgement of the tickets supports the conclusion that his involvement was more than low-level personal use. I'm satisfied that father 1 had progressed from low-level supplying of cannabis onto low-level supplying of cocaine.

149. I'm satisfied that he carried out this activity using both the mother's home and the paternal grandmother's home. The drugs mapping results showing the presence of cocaine in numerous locations in both of the properties supports the contention that drugs were used and, in my view, handled within those properties on a regular basis. In respect of the paternal grandmother's property the lodger clearly was also responsible for a relatively high level of drug usage and thus carries a significant level of responsibility for the drugs mapping findings in that property but father 1 was also there. The paternal grandmother says that she has never taken crack cocaine, cocaine or heroin but that she did occasionally smoke cannabis in her youth but not since she was in her 20s. She said that father 1 used to use cannabis but she thought he had stopped. She says he has had a drinking problem in the last couple of years. She says that father 1 told her that he and the mother occasionally used cocaine. She understood they used it every couple of weeks. She says father 1 told her that the mother would ring him asking him to get more cocaine. Conversely, she says the mother also used to tell her that father 1 was possessive, was on cocaine, was drinking and that she was kicking him out. She did not think he was a dealer. She also said that the mother would drink when not pregnant and was often hung over or the worse for wear after a night's drugtaking. She says on a few occasions not more than three times she saw the mother with a lot of cash.

150. I'm satisfied that the paternal grandmother was aware of father 1's handling of drugs in her house along with the lodger and the use of them in those premises. Her drug test results, her attitude in the covert surveillance, the generally relaxed attitude to drug use and misuse all support the conclusion that she was an occasional user of cocaine and that she was cavalier as to the presence of drugs in her home. The photographs of her home and the evidence her about her life in general suggest a chaotic and disorganised lifestyle where alcohol, prescription drugs and I conclude illicit drugs were consumed on and might well be left about the property. However, it

was not at the paternal grandmother's house where K ingested the cocaine which killed her. The children were certainly exposed to various forms of drugs at the paternal grandmother's property. As Dr Cary said the presence of drugs in many households leads to children's hair being contaminated with drugs without any adverse effects upon their health.

151. It is clear from the totality of the evidence that K ingested the cocaine most probably at the mother's home. The evidence of her presentation at nursery up until lunchtime on the third and in the early part of the afternoon provide no support for any possibility of her having ingested drugs at the nursery or in the park as was initially suggested by the mother in her first police interview. K was at home from approximately the middle of the afternoon on the third until taken to the GP by the mother late in the afternoon of 4 April.

152. In terms of the timing of K's ingestion of the cocaine I am satisfied that this can be identified with a greater degree of accuracy than simply the 25 or 26 hour period leading up to K's departure from her house at about 16.45 on the afternoon of the 4th. The mother in particular and the Guardian have urged caution in seeking to more closely identify the time of ingestion. The local authority and the paternal grandmother in particular suggest the evidence does support a clearer window. It is certainly true that the behaviour of father 1 and paternal grandmother in the three hours or so in which K was in their care on the afternoon of the fourth is hard to understand. Father 1's actions in particular are very uncertain but more importantly the fact that K was not taken to the hospital nor any call made to a GP when they both said that they considered she was quite seriously unwell is difficult to understand. Their explanations of father 1 being worried that it would set off an epileptic fit or of the paternal grandmother is that she did not have parental responsibility and could not do so, does not stand up to very much scrutiny. Furthermore, the paternal grandmother's failure to respond to the mother's calls that evening and father 1's failure to hotfoot it to hospital are also hard to explain. However even Ms Isaacs did not go so far as to suggest that one could infer legitimately from their inexplicable or suspicious behaviour that they were covering up for the ingestion of cocaine whilst they were caring for K. It seems to me that there are other more logical and probable explanations.

153. The chronology supports the proposition that father 1 has long been involved in drugs. The chronology supports this has not simply be limited to consumption but also the sale of drugs. He has a conviction for supplying a Class A drugs convictions for possession of class A drugs and the circumstances of his convictions including that in 2015 support a conclusion that he has been a dealer of drugs. The police intelligence, father 1's dishonesty about his work record, his dishonesty about his consumption of drugs, the results of the police searches, the mother's evidence of his possession of significant quantities of drugs his acceptance of the bag and tickets found in the paternal grandmother's house all point to the conclusion on the balance of probabilities that father 1 was dealing drugs. Father 1's dishonesty in relation to his consumption of drugs at the mother's home and other documented instances of dishonesty including in relation to the denial of drugtaking when he put himself forward to care for his daughter are examples of dishonesty which are relevant in Lucas terms to the conclusions which I draw in relation to father 1's involvement with drugs. Father 1 lies without hesitation in order to distance himself from drugs and to

avoid the consequences of his drug-related activities. I'm satisfied that the mother was irritated if not angry with father 1 and grandmother for not taking responsibility for L, N and M whilst she took K to the doctors. This together with the paternal grandmother giving M a bath and leaving her phone in the kitchen are an adequate explanation for her lack of response particularly when she was in contact with father 1 who had been in contact with the mother. Father 1's activities and the paternal grandmother's reticence to provide a clear account of what he was up to suggest that he was engaged in activities relating to drug operations. In particular his failure to attend hospital immediately he was notified that K was being blue lighted with suspected sepsis can only be explained by a more urgent business. Walking the dog or not leaving the dog alone are wholly inadequate explanations and together with his telephone activities with the multiple phones which the mother gave detailed evidence of in her police interviews satisfies me that he was engaged in drug-related activities on the evening of the fourth when K was first admitted to hospital.

154. Thus, I do not consider that the behaviour of father 1 or the paternal grandmother add anything to leaving the window open during the three-hour period from 13:21pm to around 16:30pm when the mother returned home. In fact, one area of the paternal grandmother's evidence which I am prepared to accept is her account of a relatively uneventful three-hour period during which K mainly slept on the sofa apart from waking for cuddles and a drink, the preparation of some form of lunch and generally minding the children. The paternal grandmother's inability to adequately explain what father 1 was up to I'm satisfied is related to her covering up for father 1's drug-related activities. Given the importance of the day - it being the last that the paternal grandmother saw K alive - and father 1's later activities it seems to me to be a reasonable assumption that he was engaged in something drug-related of which the paternal grandmother was aware.

155. More importantly it seems to me is the evidence relating to K's deteriorating health from around 6 o'clock on the third through to 16:30pm on the fourth. The evidence from Prof Forrest and from doctors Cary, Palm, and Ashworth suggest the early hours of the morning of the 4th as the upper end of the bracket for the causation of the myocyte damage. Dr Cary suggests that 6 hours might be added to that as the 'event' which led to the myocyte damage although all the estimates were in effect ball-park or loose. At 14.18pm K was in the sole care of the paternal grandmother and father 1 which would appear to be the lower limit for the ingestion of cocaine which was not detectable in the blood but was detectable in urine by 24 hours later. Although K's symptoms of tummy ache, vomiting, a raised temperature, and puffy eyes are all non-specific they are also all consistent with cocaine ingestion leading to myocyte damage, cardiac necrosis and reduced cardiac output. I agree with Ms Cook that if one has a known cause of death as we do here symptoms which would be non-specific if there were an unknown cause of death can properly be regarded as related to that cause of death absent some other explanation. Of course, it is conceivable that K was suffering from some bug or food poisoning in evening and night of the third and fourth of April and that at some point on 4th April she subsequently ingested cocaine which continued or magnified some of the pre-existing symptoms arising from her food poisoning or bug. However, I conclude that it is more probable that those symptoms were linked to the ingestion of cocaine and that they were part of a continuum in particular the oedema around the eyes, the raised heart rate the raised temperature which led to her admission as a suspected sepsis case. Although it is right

that Prof Bu'lock thought that swelling around the eyes was not often a first sign of oedema - gravity playing its role; K was lying down for most of the period of time and Dr Hawcutt's evidence of puffy eyes often being the most noticeable indicator of oedema to the lay person seems to me to be a probable explanation. I'm therefore satisfied on the balance of probabilities that the ingestion of cocaine preceded the onset of K's symptoms of tummy ache, vomiting, raised temperature and puffy eyes and that they were the cause of them rather than an independent cause such as a tummy bug

156. That places the ingestion of cocaine at some point in the afternoon of 3 April. The mother's account of her movements on the third and the fourth has been detailed and in the main consistent from the first account given on 6 April through to her accounts in interview in May and July 2019. I accept that her account of father 1's whereabouts has progressed from that given to the first interviewing officer. However, at that stage her account was given against a backdrop of K's unexplained death. I accept that if the mother had known that K had ingested cocaine or had otherwise been exposed to some serious risk that the mother would immediately have sought medical attention. A track record of seeking medical attention for all of her children demonstrates a considerable concern for their health and all the evidence that is available points to the conclusion that the mother is generally a careful and risk averse parent to these children. Her home is spotless, stair gates are in place she generally takes primary responsibility for them. The absence of mention of father 1 from the early accounts is therefore not a surprise or a matter of concern albeit I accept that the mother's evidence on this has not been tested. However, the account she has given in interviews and statements but in particular in her police interviews is so spontaneous and detailed that I accept that it is on balance a accurate account. Set against father 1's varying accounts where he sought to distance himself from being present in the house in his first statement to his cautious acceptance of the accuracy of the mother's account I am satisfied that he was in the house on the afternoon of the third. He was there on his own for significant periods of time albeit was in and out. I have accepted that he was engaged in the supply of cocaine and that albeit on a modest level this involved the processing of the drug at some stage by putting it into wraps. It may also have involved some consumption of cocaine. He was also prone to drink from lunchtime onwards. It seems most probable that the cocaine that K ingested was present in the mother's home as a result of father 1 having brought it onto the premises and having processed it in some way in an area which the children would have access to. Whether this was actually cutting and re-wrapping the drug or consuming it and whether its presence in quantities sufficient to cause the myocyte damage was as a result of alcohol or drug induced clumsiness, dog induced accident or otherwise I am unable to determine. It is more probable than not that the cocaine that K ingested came to be in the flat that afternoon or evening on that day. The cleaning regime of the mother and maternal grandmother suggests it is less likely that it would have been present for any length of time. Father 1 suggests that the cocaine was the mothers and may have been in her drawer - one of the locations the drug mapping located cocaine. On the balance of probabilities, I do not accept that the mother was independently obtaining cocaine from third parties and keeping it in the flat. That is not consistent with the previous history or her then drug usage. What is probable is that this was father 1's cocaine which through carelessness came to be present in K's home in sufficient quantities and which she accidentally came upon and ingested causing the myocyte damage, cardiac necrosis reduced cardiac output

and subsequent death. Precisely where in the house and all the circumstances in which K came to ingest it, I do not consider that it can be determined. However, my conclusion that it was father 1's drug which was carelessly left in the mother's home and there ingested by K is where responsibility ultimately lies. I accept that the mother did attribute K's illness to something like a stomach bug or food poisoning. Given those non-specific symptoms there was nothing to alert her to the possibility that her daughter had ingested cocaine. However, I am satisfied that the mother was aware of father 1's drug-related activities and that he conducted aspects of it on her premises. Given his known propensity to drink and periodically to become abusive the possibility of cocaine being present in the children's home in an uncontrolled fashion was a real one which the mother must at some level have been aware of. However, she was tied to father 1 for reasons which I do not fully understand and was unable to break her relationship with him. I do not accept that this was a result of her being in fear of father 1 to such an extent that she could not take action. It was more subtle than this. The mother's evidence of father 1 having made threats to bury her in the park or to have her children taken from her appeared to be given with some genuine conviction but I do not accept that they characterised the nature of the relationship prior to K's death. It may be that following the emergence of cocaine as a possible cause of K's death that conversations between the mother and father occurred in which the possibility of losing the children or the possibility of the mother disclosing father 1's drug dealing took place in which such comments were made by father 1. I do not have sufficient evidence to determine precisely how such things came to be said but I am satisfied, on balance that they were not a feature of the relationship of the mother and father prior to K's death and certainly not as described by the mother in order to exculpate herself from failing to protect the children from the risks father 1 presented by regularly bringing and processing cocaine on the mother's premises.

157. Although many of the drug tests found the metabolite AEME I'm not satisfied that I have heard sufficient evidence to determine whether any of the mother, father 1 or paternal grandmother were active users of crack cocaine. By its nature the metabolite could be ingested by passive inhalation of crack cocaine smoke. That may well be the explanation for the hair strand testing results. Although it might be said that the unreliability of the evidence of the mother, father 1 and the paternal grandmother as to their involvement with drugs should lead the court to infer not only that they were powdered cocaine users but also crack cocaine users I'm not prepared to make that leap and it does not seem to me to be central to the establishment of the threshold or indeed to the levels of culpability of the mother, father 1 or the paternal grandmother.

Conclusions

158. I am therefore satisfied that

i) K died as a result of ingesting cocaine in the mother's home at some point in the afternoon or early evening of 3 April 2019.

ii) That cocaine was brought into the house by father 1 in connection with his drug-related activities and carelessly left in such a way and in such a quantity as to be ingested by K.

iii) The mother was well aware of father 1's bringing of cocaine into her home and of it being processed there. She did not do anything effective to prevent this but this was not through fear of father 1 but because of the nature of the relationship between the two of them and her own involvement in recreational drug use. Given her generally protective nature in relation to the children it seems most probable that she turned a blind eye or persuaded herself that sufficient precautions were being taken to protect the children. This was to kid herself. Given the nature of father 1 it was a risk that any reasonable person ought to have identified and taken steps to actively protect the children from.

iv) Although the disclosure to the hospital staff of the possibility of cocaine might have led to medical action which would have prevented her death I'm not satisfied that the possibility of K having ingested cocaine would have been on the mother's radar given the non-specific nature of the symptoms, the fact that she had not witnessed anything herself and the doctor's suspicion of sepsis. Doubtful though I am of father 1's reliability I am prepared to accept that he loved his children and had he known that K had ingested cocaine he would somehow have indicated this although that is a very fine balance given his determined efforts to distance himself from responsibility and to protect his own skin. On balance he is sufficiently self-absorbed and sufficiently unaware of much relating to his children's health and welfare that I'm not sure it would have occurred to him that he might have left some cocaine around and one of his children might have ingested it. However, given his primary responsibility for having carelessly left the drug available to be ingested this is perhaps of only marginal importance.

v) The paternal grandmother does not bear any direct responsibility for K's ingestion of cocaine. It was not ingested in the time she was caring for K with father 1 on 4 April. She was not present in the home when it was ingested. She does though bear some indirect responsibility in that she was the head of a family who were steeped in Class A drug misuse and had been for many years. She was well aware of father 1's activity as a supplier and I am satisfied knew that he processed drugs both at her premises and inevitably at the mother's. She also was well aware of his deteriorating alcohol abuse and it was a self-evident risk that in handling drugs in either her property or in the mother's property there was a real risk that careless handling would leave drugs in the environment where they might be ingested by children. The frequent presence of K and M in her own home her cavalier attitude to the presence and consumption of drugs by father 1, by the lodger by her daughter plainly represented a risk to them which is reflected in the environmental contamination of their hair part of which is attributable to presence in her premises. It is luck rather than judgment on her behalf that no harm came to them.

159. The mother's description of K's final moments given in her police interview is harrowing to watch, even for the most hardened legal professional. K woke in the early hours of the morning, put her arm around her mother and collapsed as her heart finally gave out from the damage it suffered from her inadvertent ingestion of cocaine.

160. That represents a desperate tragedy. For K a playful, cheeky and loving little girl with all of her life to live. For her siblings who struggled to comprehend her death, who will grow up without her and whose lives will no doubt carry with them the shadow of her death. For her wider family including her grandmothers who loved her dearly; the paternal grandmother's account of her distress when she arrived at the hospital after K's death is vivid and real. For her father who for all his flaws I have no doubt loved her deeply. And for her mother who not only adored her but who in so many respects was a good and nurturing parent and whose children were the centre of her world.

161. K's death was needless. It was avoidable. Insofar as blame or responsibility can and needs to be attributed, I have made my findings. It is hard to avoid the conclusion that the history of each of the responsible adults formed the people that they were on and leading up to the 6th April and shaped their behaviours. Thus, whilst father 1 bears primary responsibility, the mother secondary and the paternal grandmother a more diffuse responsibility they are not one-dimensional 'bad' characters. The paternal grandmother's own life has been marred by tragedy and abuse and shaped her attitudes to her son's drug use, her own and her family's lifestyle including drug use but she is also a loving and caring grandmother who enjoyed caring for her grandchildren and in many ways was able to offer positive care. Father 1's early life including the deaths of his siblings and his exposure to the serious domestic abuse and instability of the paternal grandmother's mental health issues have undoubtedly shaped him and contributed to his willingness to involve himself over a long period of time in illegal and dangerous drugs and to become so complacent that he exposed his children to a substance that ultimately killed K. That was the last thing he wanted and perhaps if he could rewind the clock he might find some way of diverting himself from the path that led to K's death. He perpetuated the cycle of tragedy that he himself lived through; K has joined her uncle S and Aunt T both child victims of their own tragedy. He also loved and loves his children and in Dr Jekyll mode had much to offer – he undoubtedly could and should have done more. How the mother ended up where she did is more complex. Her life appears largely to have revolved around her children and apart from her descent into frequent drug use and her inability to see or accept the real risks her deteriorating relationship with father 1 and his drug related activities posed to her children she was a good and loving mother. For the paternal grandmother and father 1 to escape from the lifestyle that led to the tragedy of 6th April is harder to discern given the length of time they have lived it. For the mother a return to the straight and narrow is perhaps more probable although I do not doubt the very profound impact on her psyche of the death of her daughter, the realisation of her role in it and the loss of her other children. I hope the experience she has lived through leaves her or perhaps gives her the strength to escape.

162. If ever there was a lesson of the perils of drug misuse this provides it. I have little doubt that adults, young people and children will continue to die from the deliberate and inadvertent ingestion of illicit drugs. The complacency that accompanies frequent misuse is perhaps one of the biggest problems. Whether this family is able to learn from this tragedy remains to be seen. I hope they and others do.

163. That is my judgment.

CHRONOLOGY

Date	Page	Summary of event
1954	C72	MGM born. Has four children, Mother is the third. **She seems to have led a fairly uneventful life without significant trauma. She appears to have separated from her husband prior to the birth of the mother and her younger child. They seem to have little to do with their father. Her description of her children and their lives suggests they have made the transition to adult hood without experiencing significant difficulties in their own lives. She doesn't take drugs or drink but smokes cigarettes. She says she was amazed when she discovered Mother and F1 were taking drugs. She says she was never aware of this. She says she was aware of the father being possessive.**
1967		PGM born.
1983	C93 P51	PGM discharged from care At 16 she had her first child (U) and subsequently has had S in 1985, T in 1987 She married in 1986 and had an on/off relationship which seems to have featured violence by him and PGM obtained injunctions but reconciled. She has convictions in 1985 for low level dishonesty offences, criminal damage, FTS, and has spent time in youth custody SS have been involved with her children since 1985 as a result of concerns about her partners being violent and her children were periodically removed from her care including when she was in custody. U was eventually taken into care and adopted apparently linked to PGM exposure to DV
1988	C94	Father 1 born [now 31] Convictions or cautions over a period of time for dishonesty offences, carrying a bladed article, minor public order offences, drug supply and use, His father died when he was 2 and the records about his life as a child indicate a childhood marred by the instability in the PGM's life including her mental health problems, domestic abuse, alcohol and drug abuse.

		When 15 he witnessed a suicide when a woman jumped from a building. Was living with PGM but moved out in late April 2020
1988-1989	P19-49 P98-125	LA involvement when PGM moves into the Local Authority's area inc re PGM wanting to get away from father 1's partner; seeking injunction due to his violence; financial assistance. Children placed on CPR
1989		Mother born. Little forensic history cautioned when 12 for shoplifting. Little known about her history of childhood but perhaps uneventful compared to F 1's
1989	C94 P1-2 P439-446	S & T died in housefire – thought to be playing with matches. An inquest recorded a verdict of accidental death. Following their death, the records show concerns about PGM drinking and taking Class A drugs, self-harming and overdosing.
1990		Father 1's father dies.
1991		PGM sectioned under MHA
1994	C94	PGM gives birth to V
27.1.96	C95	V admitted to hospital due to accidental overdose. PGM says he accidentally got hold of some of her tablets
1996-8		Records show concerns over PGM experiencing DV, drinking, drug taking, over-dosing and being admitted to hospital.
2001	C95	W born [now 19]
21.2.01	H10	Mother cautioned for shoplifting
12.3.02	C95	F1 and siblings placed on CPR – emotional abuse due to concerns over PGM mental health & ability to care safely for children, inc concerns re self-harming & alcohol use. Children recorded as saying PGM uses crack cocaine which PGM denies in March 2002 but in April 2002 is recorded as admitting including in a police interview where an SW was her appropriate adult. In May 2002 she was cautioned for wilfully assaulting / ill-treating / neglecting a child
28.5.02	P	SW says PGM was interviewed by police and admitted used crack cocaine.
2003	C95	Q is born [now 16]
Late 2003/2004		V and Q removed from CPR
A 5.8.05	C30 H4 H387	F1 pleads guilty to theft and burglary – supervision order 12 months Recommendation that he participates in assessment of drug use; F1 says he has given up cannabis use Offence said to have been committed under influence of vodka & under influence of a friend

August 2005	C96	V & Q on CPR Concerns re PGM mental health & children witnessing self-harm & suicide attempts
27.8.06	C96	No further incidents of PGM self-harming; children removed from CPR; on CIN plan
? date	C96	V taken to hospital by ambulance after consuming vodka PGM attends hospital V and PGM leave without V being treated
c. 2007	C42	Mother says she first took cocaine when she was about 18
18.7.08	C31 H4 H387	F1 pleads guilty to being concerned in supply of Class A drug – MDMA; 12 months suspended sentence; 12 months supervision order; 12 months programme requirement
2008	F5a K420-427	L born [now 11 years] Mother living with MGM at time of L birth
29.6.09	C31 H4-5 H387 H976	F1 pleads guilty to possession of cocaine & cannabis – community order – unpaid work 60 hrs 7 bags of cannabis, 2 wraps of white powder, 2 more wraps at home F1 says at time of an arrest he was in possession of cannabis and (he says weak) cocaine
2009/10		Concerns over PGM self-harming. Violence alleged in relationship between F1 and then partner. F1 victim. - partner said both used cocaine, cannabis and alcohol. 2 common assault charges (??not proceeded with)
5.2010	H388	Alleged Altercation between F1 and partner.
1.6.10	J15-16	L sees GP with M re behavioural problem Also speaks to GP re contact centre – Mother hopes to arrange contact between L and her father (F2) there Mother tells GP L father is unpredictable and verbally aggressive – shouting & calling through letter box
17.8.10	H389 H976	F1 stopped & searched– cannabis joint found consistent with personal use. F1 given formal warning
c. 2011	C37	L last has contact with her father until these proceedings
7.9.11	H388 OTii14	F1 arrested by police for possession of cannabis – NFA PGM son says F1 kicked door and damaged it.
3.12.11	H555 C37	Mother & F1 meet up Previously been to a club together
Dec 2011	C25 C37	Mother & F1 relationship begins Mother says they met on Facebook Mother & F1 live together soon after relationship begins
c. 2012	C38	Mother says F1 & PGM did not speak after PGM

	C101	accused F1 of stealing a chain and pawning it
Feb 2012	H560	Mother says F1 in her home all the time from Feb 2012
2012		X [F1 daughter] born [now 8]
23.7.12	C97 H977	Police report PGM took overdose at home while children were present
8.9.12	H388 H977 OTii14	Police called to PGM home Argument between F1 & brother Alleged F1 kicked door causing damage F doesn't remember this
2013/2014	C25 C38	F1 says his daughter X was removed from his then partner Mother says she only found out about drugs test years later
Feb 2013	C9 H1460 C32	Unsubstantiated referral from neighbour alleging Mother hosting parties with adults who were drinking & smoking cannabis Referral made to children's centre – No further action F1 says he was not present at any parties at Mother home
19.2.14		Blood test – no evidence F1 a regular heavy drinker at that point
26.3.14	OH65-70	F1 hair sample taken F1 says he has not used illicit drugs for 3 months Test covers period of. 20.2.14-20.3.14 Cocaine, benzoylecgonine & norcocaine were detected. Cocaethylene detected] Levels of cocaine and breakdown products are high indicating regular cocaine misuse [analysis at OH69-70]
Before mid-2014	C44 H555 C84	Mother says F1 was first violent to her Mother says F1 smashed her head up the stairs *We had got into an argument about something, I cannot recall what it was about now, we had been standing by the stairs when all of a sudden F1 grabbed the back of my hair and pushed me forward causing me to fall on the stairs. He banged my face head/face into the stairs a few times I think he only stopped as I had screamed. I had a cut on my head as a result and later developed a bruise.* <u>F1 denies ever having been physically violent to the mother</u> **Although the evidence about this is not detailed and the mother was not cross-examined about the issue, I'm satisfied that on the balance of probabilities that an incident of this sort took place. The mother's frequent reference to him banging her head off the stairs in her interviews and statements plainly refers**

		to this account and the paternal grandmother's report to another Local Authority of some form of violence in the relationship between father 1 and the mother would tend to corroborate it.
17.3.2014	O36	PGM tells another local authority there is DV in F1's rel with Mother and he was using drugs
Summer 2014	OI11	Care & placement orders re X F1 withdrew from assessment process as M pregnant
2015	H34 H60-61	Police intel from 2015 drugs runner
2015		M born [now 5 years]
20.2.15	N68-69	New birth visits by HV to M F1 visiting daily as reported that he does not live with family In relationship; observed to be supportive of each other Mother is not asked about DV as F1 is present No disclosure of drug or alcohol misuse
March 2015	C63-64	Father 2 says he stopped seeing L
April / May 2015	C38-39	Mother says F1 was unhappy when she fell pregnant with K Mother says F1 became controlling of her once pregnant with K Mother says F1 encouraged her to spend time at PGMs and that she stopped talking to her friends
1.5.15	H1483	Intel re drugs *[redacted] supplies large amounts of Skunk ….. [redacted] has several runners the main one being F1. F1 rides a [moped], VRN [redacted].* *F1 will hold the drugs at his home address.* [H1483]
21.5.15	C9 C31 C84 H6 H387-388 H1387-1399 C42	Caution of F1 for possession of cannabis Police conduct search under s23 MDA warrant F1 admits ownership of safe but says did not know code or have key Safe contained cannabis, some in bags and electronic scales Number of phones recovered F1 is arrested – prepared statement – admits possession, says personal use no intention to supply, says uses scales to make sure know how much I am smoking and to make sure dealers don't con me; no comment re other questions inc phones, scales and safe [H1397] F1 is cautioned F1 says cannabis was in a safe to ensure children did not have access to it
17.6.15	H1460 H1468 H1482	Referral to LA after cannabis found on 21.5.15 Mother says she had no idea safe and drugs were in her property C&F assessment; case closed 21.10.15 FSW told F1 did not live at the address

19.6.15	H1484	*Subject: Drug Supply – F1* *Borough: …..* *Information: F1 continues to supply cannabis around the ……. F1 has a new moped, VRM [redacted].* [H1484]
18.12.15	C96	PGM took W to A&E – said W fractured arm by falling under a bus
2016		K born
9.2.16	H1189 H1351 H1356 N65 N204-206	K new birth HV visit Mother & F1 present Parents report M sleeps in upstairs bedroom with F1 & Mother sleeps downstairs with K Positive observations of F1 with M Mother says F1 does not live there but is there for a great deal of the time – observed to be supportive of each other Not asked about DV as F1 present
5-8.5.16	F3	M admitted to hospital – meningitis
1.6.16	J303	K admitted by ambulance to hospital for ? sepsis / pyrexia Bloods & urine taken
27.7.16	N61-62 N201-202	HV home visit after K's hospital attendance F1 in home Mother reports she is supported by F1 (who is upstairs during visit)
21.11.16	J282-283	K seen at Hospital Diagnosed with epilepsy Started on sodium valproate
2017	C43	Mother says she believes F1 was drinking more and taking cocaine after K was about 1
22.3.17	H1186 H1353 N200-201	K developmental check up F1 present – noted K lives at home with parents
28.3.17	J241	K sees GP with Mother & Sister
March / April 2017	C40	Mother says K and M started staying at PGM's; M only previously
From mid 2017	C102	PGM says K and M stayed with her every weekend
Summer 2017	C25-26	F1 says he, Mother, children and his sister went to Spain for 1 week F1 says he stopped living with Mother full time from this date

		F1 says he visited Mother & children most days F1 says he occasionally collected K & M from nursery but otherwise Mother always present when he had contact F1 says he did not have the children to stay with him F1 says L stayed with MGM sometimes & younger children stayed with PGM
1.6.17	F3 N56 N60	M seen at hospital presenting with accidental overdose of PGM fluoxetine 25mg tablet Mother describes this in interview. Discharged with verbal advice given
26.7.17	C97	PGM admitted to hospital due to cutting herself Left hospital before wounds are stitched. **The previous incidents of leaving hospital before a child had been seen after consuming vodka and the indicators of a lack of care over where prescription drugs and alcohol were kept when children are about suggest a disregard for their health and possibly a reluctance to engage with health professionals unless a real urgency which might explain why she didn't call the doctors when K deteriorated rather than any guilt over something she had done or not done.**
Oct 2017	C40	Mother says F1 was unhappy when she fell pregnant with N and said he wanted the baby to die
2018		K seen regularly by hospital/GP for epilepsy and other issues for epilepsy review
2018	J218-219	N born [22 months]
5.7.18	N223-224	HV home visit F1 at home but did not sit in during visit
27-28.7.18	J213-214	N presented to A&E with rash; monitored overnight Imp – likely viral infection
August 2018	C107	PGM says she ended relationship with her then partner
2018	C108	LA say M takes some of PGM omeprazole?? Should be fluoxetine in 2016?
7.8.18	N222-223	N 6-8-week HV check Mother says she has lots of support from family living locally and from F1
22.8.18	E5	Mother has post-natal review – 6-month history of anxiety and low mood Prescribed Sertraline
17.9.18	J236-237	K sees GP Viral induced wheeze Salbutamol prescribed
12.11.18	J235-236	K sees GP Saw OOH at weekend Difficulty getting abx in – advised to try to complete

		Also prescribed Aerochamber
Nov / Dec 2018	C43 C80	Mother says she took cocaine with F1
Dec 2018	C27	K admitted to hospital for 1 night
6.12.18	J265 K23 J1453 K40-41	K DNA appointment Last time seen questioned whether medication was needed for epilepsy Previous reported difficulties taking medication & blood levels of sodium valproate were very low Hope she is off medication and seizure free GP writes to Dr on 17.12.18 to explain K missed appointment due to URTI GP also states K refusing to take anti-convulsant medication; K not had seizure since beginning of 2018 Want another appointment
7.12.18	J235	K sees GP with Mother Mother brings her to GP as prone to seizures with fevers Viral URTI – Mother reassured No need for Abx
Dec 2018	J255	K misses appointment with Dr
17.12.18	J235	GP calls Mother re K; received letters from Dr Mother says K now refuses anti-convulsant but has been seizure free since early 2018 GP writes to Dr to request appointment
Feb 2019	C140	Mother says Q came to look after the children
9.2.19	C42-43 C80 H627 H632 H1935	Mother says she last took cocaine just after a miscarriage Mother says children were with MGM & PGM Mother says F1 supplied the cocaine and he lined it up on a play station game Mother says she cleaned up afterwards
20.3.19	J322-323	NHS 111 call re K – Ambulance called K seen at hospital A&E – by ambulance Viral induced wheeze
22.3.19	J235	K sees GP with Mother & sister – viral induced wheeze To see wheeze nurse at GP surgery **The mother appears to have had an uneventful childhood and the maternal grandmother has no convictions or cautions. The evidence of the mother's attitude to the children's health Preceding March 2019 paints a picture of a mother who is in regular contact with health services over her children's health. The evidence of the paediatrician was that the children's medical notes were consistent with the usual ailments of childhood and did not appear to be indicative of previous cocaine exposure. Professor Bu'lock identified a number of admissions to hospital or**

		attendances which she thought might be consistent with cocaine ingestion but equally might be consistent with other causes. The medical records do not suggest a mother who is either negligent of her children's health or someone who is suspicious of health services or otherwise reluctant to engage with them. The overall picture which would emerge from the medical records would suggest a mother who gives priority to her children's health. This would conflict with a theory that she would suppress information which might be relevant to her child's health. Thus, her failure to mention cocaine, against the backdrop of the children's medical history, would be more consistent with her being unaware of the possibility that K had been exposed to cocaine rather than her deliberately suppressing knowledge either actual or constructive that K might have been exposed to cocaine. The overall picture presented by the medical records seems to show the mother being the individual who took primary responsibility for the children's health. Father 1 is mentioned in the records as being present in the home and on occasions giving information to hospitals, but the overriding impression is that he is far less involved in the day-to-day interactions with health agencies. The records do show him playing some role in the house and being said to be supportive.
31.3.2019		5 days prior to death. Professor Forrest's opinion was that 5 days prior to the urine sample which tested positive for BZE was probably the outside for her to consumed cocaine which still showed as BZE 5 days later.
1.4.19	**J41**	L falls on her left arm, pain, little relief from analgesia
2.4.19	**J37 J39-43 K366-384**	L attends hospital – greenstick of left radius midshaft– celebrating 5km run / at running club playing tag
14.18 hours		**3 days before BZE +ve urine sample** **Professor Forrest said that his opinion was that it was more likely that she ingested cocaine (not a very large dose so as to render her severely ill and more than a minimal dose by mouth) within 3 days of the +ve result . Cannot say how much, what type, what time, what circumstances or who. Care must be taken in making assumptions from toxicology results.**
3rd April		
05.37		**72 hours before death**

09.30	**H1108** **H1478**	K at nursery K had a good attendance record… Staff team reported no concerns about K health on Wednesday. K came to nursery last Wednesday morning and was supported to settle in toddler room. Her mother left the room and K was happy to go in nursery class for a visit. In nursery class she seemed really happy as she was playing with other children as well as running around. During lunchtime K went back in toddler room and she had lunch with her peers. K really enjoyed sitting together with her peers and she was very capable to self-serve roast chicken and potatoes. She was not very keen to eat vegetables, but she would have a second portion of chicken, extra potatoes and ice cream. K was picked up by her mother after lunch
11.55	**H**	Mother calls MGM
12.29		F1 calls Mother
12.53		Mother calls F1 (1 x not answered and 1 answered 32 secs)
12.30-3pm	**C48**	Mother says she collected K with M from nursery and they went home.
13.19		MGM calls Mother Mother says in i/v this would be to do with collecting L
13.21		MGM calls Mother
13.40	**K385-7**	L seen in Fracture Clinic at hospital.
	H1108	K's key worker saw her with mother later in the afternoon walking along road, holding her mother's hand. She looked good.
2.30		Hospital call Mother to ask her to take L in for a full cast
15.08		Mother calls F1 (3m 17s) Mother at home
15.11		Mother phone: Mother out of home
3-4.30pm	**C48/** **H581**	*M St: 'I asked Father 1 if he could watch the children whilst I went to collect L but he told me that he didn't want to and so I had to take them all with me. My mum came with us as L was spending the night with my mum. I got home about 4 to 4:30 PM with the children; Father 1 was at home, but he was in and out as he usually was. Mother IV: he was there, hung over. And then I asked him to watch the kids while I went and picked up L from school, he started moaning saying no he couldn't.*
16.36		**MGM calls Mother 31s**
4.30-6pm	**C48**	**Mother St** *I got on with making the dinner; I think I cooked something simple that evening. We ate about 6 PM; K complained of a tummy ache and said that she didn't want to eat dinner. I didn't take much notice of this as I thought that maybe she had just been a full up*

		from earlier in the day. I left her dinner on the table so if she felt hungry later in the evening, she could have it **Mother IV***: we got back. Kind of normal, kids were all playing. He was in and out, in and out, in and out, in and out, in and out. Sometimes he would stay there for 10 minutes then he'd go back out and then had come back and then he'd be there for an hour then he would go back out.. Think I did something really simple that night. Probably something like dippers or something like that…. And then they was all fine. Put their dinner on the table. K complained she had belly ache. So I thought she just didn't want to eat her dinner you know how kids are sometimes. And then she was still running around and playing so I just didn't think anything of it… [L had an appointment at hospital next day and K wasn't in nursery so at some point that night or on the morning I rang his mum {PGM]* ***[Account also in Interview record at H195 is broadly the same.***
17.22		Mother calls F1
17.27		Mother calls F1 x 3
17.37		F1 calls Mother 25 s
	H??? (20 of 93)	Many calls from F1's phones
6.30-8.30	**C48**	**Mother St:** *after the children had eaten their dinner, they went off playing again, K did not complain again about her tummy again and so I wasn't concerned. We all went up to get ready for bed at about 8:30 PM as usual and I asked Father 1 to help get the kids ready for bed. I got them all in their pyjamas and Father 1 made sure they all had brushed their teeth. K was in bed watching or playing on my phone and M on the iPad* ***Mother IV****: [L was out playing with friends and then went to Nanny's]*
8.30 - 9.30pm	**C48**	**Mother St:** *K fell asleep at around 9:30 PM then M fell asleep shortly thereafter. N fell asleep around 10:30 PM after his bottle. Father 1 and I had been watching TV until N went to sleep then both fell asleep* ***Mother I/V****: K went to fine…. Like she went to sleep fine. There was no, no problem she was always a good sleeper you know soon as she put her head on that pillow, she was always, saying half an hour sleep. M took a little bit longer but she eventually went to sleep*
21.47		**F1 whereabouts shown on phone records**
	C28	**F1's Statement:** I was not staying at the mother's when K became ill.
22.57		**48 + 6 hours before collapse**
23.57		48 + 6 hours before death

		Dr Cary said if heart damage was caused by vaso-constriction the 'cause' of the vaso-constriction was a few hours -max 6 – before the damage was done. Thus the 48 hours pre-death could commence 6 hours after the event that caused the vaso-constriction. Dr Cary also opined that in terms of necrosis the time of death could be defined as the time of cardiac collapse as you need circulating blood to develop necrosis and inflammation so 22.57
4.4.19		
02.00	**C48** **H583**	**Mother St:** *at about 2 AM I woke up as K was being sick. I pulled K over me so that she could be sick on the floor. Father 1 was awake and had been sitting on the chair by the window. I shouted at him to not just sit there and asked him to find her a bowl or a bin so that K could be sick in it. He found an old Haribo empty sweet box and gave that to me. K asked me for some juice and seem to be fine and so I tried laying her down again but she continued to be sick and so I sat her up again. I could see that she had brought up the juice that she just had. I asked Father 1 to keep an eye on her and told him to make sure that she was sick in the bowl whilst I cleared up the sick. We tried going back to sleep but K kept waking up heaving. She mostly brought up bile.* **Mother/IV:** *woke up about 2 o'clock in the morning and I can hear K like gagging… So, I noted like, looked her... I knew she was going to throw up, so she threw up once on the bed on the duvet. And then I pulled her over so she can be sick on the floor because M was sleeping right next to her…. We all got into bed and then that's when she started waking up, at 2 o'clock in the morning, and he wasn't in the bed.. He was sitting on, in my room I've got my bed here, and then I got a window and then I had a chair and it was next to a chest of drawers with the telly on its top, and he was sitting in there. And I screamed at him, I said why you just sitting there, she's being sick, like can you don't get something like a bowl, or a sick… Anything for her to be sick in. And eventually he did that. So, I sat her back like upright. But the bowl next to her and I told him to watch while I cleaned all the sick off the floor, I go and get like…. I got a CIF cleaner and that and so I can clean all the floor up. So, he did that. I cleaned up the floor. You could tell he had been drinking and was on something. You could… Just the way his behavior was like…. He was lip drooped. His eyes were flickering like his eyes were like literally like flickering to the back of his head… He couldn't talk properly. He was like, like he was delayed. I don't know*

		if that makes any sense like. Like what I was saying wasn't going through... And I just didn't have time to argue with him when K was throwing up…… I laid her back down. He sat in the chair. M stayed asleep thank God. And that we… Was on and off sleeping… Because K kept like heaving like she was just bringing up what she was drinking so her juice and that that's what she was bringing up and like bits of like bile and stuff. **F1 St:** <u>his statement suggests he was not present when K threw up</u>
02.00	**H31** **H196** **H583-584** **K101** **C49** **C105**	At 2am K woke up & febrile Then > 10 vomits 2am to 6pm on 4.4.19 Temperature all night 38.6 M tells police F1 was in the home M says F1 looked like he'd taken something
	H2379	Multiple calls/texts from F1's phone around 2.30am
05.37		48 hours prior to death - Dr Ashworth in oral evidence said that in his opinion the necrotic damage seen in K's heart was sustained at the outside 48 hours before death. - Dr Cary said that damage to the heart tissues caused by vaso-constriction would likely start some hours after the drug caused the restriction of the blood vessels limiting the blood/oxygen supply to the tissues. Dr Cary said 48 hours was a'ballpark' upper limit on when the necrosis was caused and that it was much more imprecise. - Dr Palm said that in broad terms 36-48 hours represented the upper end of the time for the event that led to the myocyte damage in K's heart.
	H2298	Experts Police Discussion: Acute overdose would largely be eliminated after 2 days – bloods would be clear if cocaine ingested on 3rd but would still be traces in urine.
	H1108	K not due in nursery as only attends Mon-Wed.
	C28 **C86**	**F1' Statement:** <u>The mother told me that K had thrown up at 2 AM in the early hours of Thursday fourth of April, she called me to tell me this.</u> **F 2nd St:** <u>my recollection was that I was told on the telephone that K had been sick in the early hours of 4 April 2019. However, I may have been there. I am sure that I did not clear up any of the sick…</u>
08.13	**H2379**	Mother calls MGM: 2m 32s <u>Mother says L had forgotten something. Took K</u>

		downstairs and told MGM she had been throwing up.
08.00 -11.00 (??)	**C48** **H584**	**Mother St:** *I woke up at about 8:20 AM and got up. My mum brought L back over in the morning as L needed to collect something for school and I explained to my mum that K had not been well in the night. I brought K downstairs with the others and laid her on the sofa as she still didn't feel well and was heaving. I called Father 1 downstairs and told him to watch the kids whilst I quickly got ready as I had to collect L from school at 12 noon to take her to the hospital to replace her cast on her arm. I called PGM and asked her to come over to help look after the children whilst I took L to the hospital as I knew Father 1 would complain if he had to look after them on his own. PGM arrived at around 11 AM and I went to get ready. K was very tired but I assumed it was because she had been up in the night and so I let her rest. I was a little worried because I thought her face looked swollen and so I asked both PGM and Father 1 to see what they thought but they felt that she just looked tired. I asked PGM if she could make sure that K was drinking fluids.* **Mother I/V***: in the morning she was really sleepy it was about 8:15. My mum rang and I rang my mum back, L had forgot something for school, so they needed to come in, she needs to come and get, I don't know if it was her shoes or jumper or a bookbag or something like that. So, I obviously brought K downstairs with me. I opened the door for L and my mum was standing at the security gate. I said mum (inaudible) I think she caught a sickness bug from the nursery... She was like has she been up all night. And I said yeah like, she's like on and off, she's been sleeping on and off. In my mum's like just make sure she drinks plenty. So, I made sure that she was drinking anyway she always had a bottle of juice or water whatever she wanted. And I can't remember if it's, I shouted at him to come down and to help me because I had to get myself ready because even though L was taken school I still had to pick her up early because she had to go to the hospital, to have her a full cast on, on her arm. So, I don't know if it was that day or the day before I rang his mum (inaudible) it might have been that day I'm not sure. His mum come up about 11 o'clock-ish. He was there. He was in the house the whole time. He, before I left, because I needed to get myself ready like change my clothes and…. And that before I left M with him, his mum and him, I… I thought her eye this top bit here, this bit here, I thought it looked a bit swollen like it was a little bit raised…[K] I asked his mum and him and I said does… Does like her I look*

		swollen… They went no, she just looks tired. So, I didn't think anything of it I said make sure she drinks plenty and that I got to go and get L now and this take her to hospital for her cast. **Mother's description in interview on 23 May of K going over to PGM for a cuddle before returning to the lie on the sofa is consistent with PGM's account of K's later behaviour,**
	C28 **C86**	F1 St: I saw K in the morning, and she was fine. The mother had to go to hospital that day **F1 2nd St:** I saw K in the morning, and she was fine. I believe that I was at home until about 11 AM as I recall speaking to my mother who came to look after M while the mother took L to hospital.
	C105	**PGM St:** *on 4 April 2019 The mother rang me to ask if I could watch the children whilst she took L to the hospital for her arm. I said yes. I got to the mother's house at about 11 AM. I don't remember the mother asking F1 and I what we thought about K or us saying we thought she looked tired. I said to the mother that K was ill and she needs to go to the doctors. The mother said she would take K to the GP when they came back, if she had not perked up. I did not think K was seriously ill. I had seen her many times with viruses, I thought it was just another 12 hour virus. However, because she was so little I thought she should see the doctor K was laying on the sofa whilst I looked after her. After the mother left K got off the sofa twice and came to me for cuddles and then lay down again. I kept giving her juices I did not want her to get dehydrated. She was not sick at all and as the mother had told me she had been vomiting a lot, I thought this was a positive sign. F1 was in and out of the house. When I had first came K had puffy eyes, like she was very tired. She was a little bit pale and she wasn't herself. She was weak and quiet.*
12:00	**C49**	Mother collects L from school.
12.30		Call 1229: PGM at M's home.
13.18		F1 calls Mother Mother says he asked about what was happening. Mother's phone still at home
13.20	**C49**	L's hospital appointment
13.21		Mother leaves home.
13.55		F1 calls Mother
14.01		F1 calls Mother/Mother calls F1: she is at hospital by this time.,
14.08		F1 calls Mother
14.18		1 day prior to urine sample which tests positive for BZE
14.28		F1 calls Mother
14.53		F1 calls Mother

15.29		Mother calls F1
15.52		Mother texts F1
15.43		PGM at Mother's home
15.53		F1 calls Mother Mother says F1 was pestering her to find out when she would be home **This does not suggest that he was unduly anxious about something having happened.**
15.11 -16.00		L in hospital having cast removed, another applied and post cast x-ray.
16.20		Mother calls F1: location shown in phone records??
16.30	**C49**	Mum and L return from hospital **Mother St:** *both PGM and Father 1 were at home and I immediately went to check on K. She looked really tired, but I can see that her eyes had become swollen. I was angry and upset that neither PGM nor Father 1 had thought to call the GP because of that but they told me they were waiting for me to take her. I called the doctor and explained what was wrong and they told me to bring K down to the surgery immediately. I asked Father 1 to watch the kids whilst I took K to the GP, but he refused and PGM would only take M with her. In the end L ended up helping me with N. L pushed N to the doctors whilst I pushed K in her pram. I think we arrived at the doctors about 5 to 5:15 PM; it was only five minutes' walk down the road. Whilst we were in the waiting room K wanted to get out of the pram so I let her get out but she had no energy and was nearly sick again and so I got a sick bowl from the receptionist. The doctor asked a number of questions, but they were concerned about her appearance and they were also concerned that K didn't have diarrhoea and that her sick had been different colours. The doctor called in another doctor to see what they thought and they both were concerned that it could be sepsis and so called an ambulance*
	H504	**Mother i/v** *When they came back K still wasn't herself and the skin around her eyes was swollen. She was retching. As such the mother took K to the GP with L and N. K started to play with the toys at the GP's but then became sick again and threw up. Her face started to swell more.*
	H583	*At that point he was ringing me, how long you're going to be. Have they x-rayed. Have they put the cast on. And I said yeah, I said it all takes time like you know having to seeing a different doctor, like everything. I said her appointment maybe at 20past-1 but it's going to take a few hours, you know what hospital are like, and then he was like okay. I asked how K was. Oh, she's fine. I asked*

		if she had been sick anymore. He said just a little bit it's nothing much. He said she was okay, I said okay then. He rang quite a few times. And then I think I got home at about half-four, roughly half-four. And then I walked in the house (Crying - very emotional) ...I walked in the house and K's face was fully swollen, all here… I asked why they didn't take her to the doctors, but they said they were waiting for me. and I said that you like they didn't tell me on the phone. So, I rang the doctors and I said I just got home from being at the hospital with my eldest, my three-year old's faces really swollen…… It's too much for him and then I just lost it at that point because you can see how unwell she was and how she wasn't… She wasn't K any more she was, it was like the life and been sucked out of her. The doctor said… Took us in the room and I explained like she just had the sickness….. Come back and her face is really swollen you know there's no diarrhoea there is nothing and that's why they was concerned.
16.43		MGM calls Mother Mother says she was trying to call her Mum to have L as she was trying to get help with the kids.
	C28 **C86**	F1 St: I was told that K had a nap in the afternoon when she woke up her face was swollen, with what appeared to be an allergic reaction. The mother told me this on the telephone. She said she was going to take K to the doctors. F1 2nds St: I believe that I returned home at about 4:30 PM just before the mother returned with L from the hospital appointment regarding her plaster cast. The mother took K to the doctors and I stayed at home to take the dog for a walk or I may have gone see a friend as I've said I cannot recall exactly all the details. I believe that I was mistaken when I said that I was at a friends house some distance away but I'm not certain on which day I went to visit another friend.
	C105	**PGM St:** *The mother arrived back about four or 430 by this time K had become more pale and her eyes were puffy. Before the mother got back, I said to F1 that K needed to go to the doctors. F1 said that the mother could take her when she got back. I did not feel that I could take her as I did not have any legal standing with her….. If I had thought K was seriously ill I would have taken her to the hospital. The mother did not say we should have taken her to the doctors. She just put K in her buggy and left. I volunteered to look after M at home with me whilst the mother took K to the GP. I don't know if she asked F1. The mother did not ask me to take N. I left the mother's house with M and we went*

		back to my house.
16.45		MGM and Mother speak Phone records show she is at home and then at GP surgery.
16.46		Mother phone located at GP surgery or nearby
16.54		PGM phone location identified
17.00		PGM takes M home by bus and stops at Iceland.
17.20		F1 on phone
17.21	**H197** **H586-587** **J32** **J233** **K115-116**	Mother takes K to GP Problem: Sepsis (First) History: started to vomit last night >10x. Mum reports bilious vomit this morning. Temp last night 38.6, nil since. No diarrhoea. Decreased urine output. Examination: cbg 7.3, HR 160 to 170, looks unwell, pale and floppy, CRT <2s, sp)2 99%RA, RR 26, temp 36.6…. Slight but noticeable periorbital oedema. Blue light transfer LAS? Sepsis started to vomit last night pale & floppy on exam slight but noticeable periorbital oedema GP calls ambulance? sepsis PGM takes M L & N with Mother & K to GP
17.30		PGM location shown in phone records
17.31		Mother calls F1 44s
17.31		Ambulance called
17.33	**H2412**	Mother tries to call PGM and continues trying (9 in total) *PGM says she was bathing M left her phone in the kitchen and didn't hear. Records do not show her using the phone at any point during this period; her next call being taken shortly before six when she took a call from Q. She later takes another call from Q and at 10.39pm a call from F1.* **What is the significance of her being out of communication with the mother while the mother took K to the doctors? Why did she not return the mother's calls? Was she avoiding her deliberately because she was aware something that happened, was it because they had had an argument about PGM and F1 not being willing to look after N and L whilst the mother took K to the doctors simply because she was preoccupied with giving M a bath and organising her evening. The absence of calls to F1 or from F1 does not suggest the occurrence of something during the course of the afternoon which they were worried about. Seems more likely that had something happened that afternoon that they would have been in frequent communication with each other over how K was.**

1733		**PGM home. Remains there that night.**
[??]	**C28 H587**	**F1 St:** I was at a friend's home some distance away on that day and when the mother told me that K was being taken to hospital I made my way to hospital as quickly as I could and arrived there about 8pm
17.40		Mother calls F1 1m 52s
17.44		Ambulance on scene
17.48	K228-230	LAS Notes:?sepsis, vomiting, drowsy RR:44, Pulse 170
17.51		PGM takes call from Q Doesn't call Mother
17.52		Mother calls F1 18s
17.57		Ambulance left scene
18.06		LAS RR 44, Pulse 178 2/7 hx Abdo pain/vomiting,, pt had fever last night 6pm. Mum gave paracetamol, pt vomiting throughout last night pt mum took PT to Dr surgery today who referred for amb…… Very drowsy and floppy RR elevated, HR elevated
18.07		F1 calls PGM
18.08		F1 calls Mother
18.09		Ambulance arrives at hospital
18.14	K100 K105-108 K231-234	K arrives at hospital at 18.14, admitted to hospital at 18.15 ? sepsis Triage notes complained of tummy ache post nursery yesterday Vomiting from 3am Not tolerating fluids Swollen face Pale HR: 170, RR 44, BM7.3, Temp: 36 Alert but episodes of drowsiness
	K108	K transferred to different paeds room Given ondansetron
18.17	K106	'persistent vomiting
18.18	K107	RR 32 BP 115/71 Pulse R 150 Perfusion: 3-4 cool peripheries Weight 12.6kg
18.20		MGM calls M 1m 26s
18.27	K108	Ondanestron given (anti-nausea/vomiting drug)
19.04	K108	RR:36 Pulse 131

		Temp: 37.3 Perfusion: cool
19.09		PGM and Q speak on phone
19.39	K115	Registrar: GP referral? nephrotic syndrome 'At nursery complaining of abdominal pain, vomiting when got home and throughout the night. Vomited again this morning. Not keeping oral fluids down. This morning noticed swelling of right eye…had been passing urine today but less than normal…. OE: looks pale and tired…, noted swelling to face... is drinking oral fluids since ondansetron
19.42	K109-110 K136	Blood gases – abnormal result 666 Raised potassium Vital signs
19.57	K116	Tolerating oral fluids very well but …lethargic and slightly pale…. Eyes puffy…CVS normal... Imp: likely viral illness
19.38		Mother calls F1 14s in
20.20		F1's phone appears to leave Mother's home and is out of the house.
20.00/22.30	C28 C50	F1 St: <u>I made my way to hospital as quickly as I could and arrived there at about 8 PM. I'm not certain about the times. This period is difficult for me to recall so much happened.</u> <u>The other children were at the mother's home with my mother at this time. On Thursday evening having been to the hospital I went back to the mother's house and stayed overnight. I looked after N and my mum took M home with her. L had gone to stay with MGM.</u> Mother says F1 arrived at c. 10.30pm *Mother i/v: He kept saying he was coming, he was coming. He was busy. He was doing this he was doing that. And then eventually he did turn up. It was gone 9 o'clock I think roughly maybe half-nine, 10 o'clock,*
20.53		F1 phones Mother 35s (Mother has phoned him 11 x in intervening period)
21.05	K110	K has paracetamol – 21.05
21.13		F1 back at Mother's home. Mother calls 5 times – no answer
21.56		F1 calls Mother 34s. F1 still at Mother's home.
21.57		F1 appears to leave Mother's home.
A		F1 calls other phone (phone 1 – phone 2) 7 m 48s
22.14		F1 arrives at hospital. <u>Mother says he was in and out and the cab waited to take L home to MGM.</u>

22.17	K110	RR 24 Pulse: 124 Temp 36.1
22.30	K101-103	K seen by Dr at 10.30pm HPC given [? By Mother] Reported seizure free for 2 years off medications Alert & interactive Imp likely viral gastritis Periorbital swelling like secondary to vomiting / viral illness but to check renal function/electrolytes Plan – admit Note low sodium
	C28 H199 H588 H618	F1 says he went to Mother home & cared for N overnight, PGM cared for M at her home & L stayed with MGM,
	C106	PGM St: *I understand that the hospital said that F1 was not allowed to stay the night. Therefore, F1 took N home to the mother's house. However, after midnight F1 brought N to my house. N and F1 (and M) stayed the night at my house.*
22.39		F1 calls PGM 3m 49s –
	H1302-1303	Samples taken from K List of medication in hospital
00.00		F1 has left hospital
5.4.19	K111-112 K137	RR:33 BP 103/73 Pulse 1328 Temp 36.3
00.21		F1 back at Mother's home.
00.31	K182	Lactate: 3.8
00.35	K138-139 H26 E293	Bloods taken Blood 1: 20U013556 On examination in the laboratory there was insufficient sample for analysis Blood 2: 20u013557 (1) insufficient sample for analysis Serum 1 (180ul): BZE not detected
02.20	K180	Lactate 4.5
03.41		F1 makes call to Mother.
05.37		Dr Palm's evidence was that the mainstream view was that it would take 12 -24 hour for the white blood cells to emerge – thus the earliest rime for the damage to K's heart to be sustained.
06.46	K141-	K blood gas?

	142	2OU014013
6-8am	K103-104	? review 6-8am Lethargy & drowsiness Plan – IV cover for meningoencephalitis
08.45		Mother calls F1 - unanswered
09.04		F1 calls Mother
10.19	K155-160 I11	K blood 2OV001822 Dr Palm says blood & serum samples taken at hospital on 5.4.19
07.30	K104 K132 H1650	Dr first aware of K at 07.30hrs; sees her at c. 8.30am
	K118-119	K reviewed by Nurse – lethargic, floppy, difficult to rouse <u>Mother says her temperature kept dropping and they were finding it hard to warm her up. Her tummy kept hurting her.</u>
	K120 K184-187	K has CT - Normal
10.26		Mother calls PGM
lunchtime	C29 C51	F1 says he arrived back at hospital at about lunchtime with N F1 says K had deteriorated K's temperature had dropped
	J233 J262 K113-114 K238-241	Mother speaks to GP re K – still v unwell; On 3x abx Low sodium Had CT scan [nad] Viral mouth & nose swabs – no standard viruses Blood cultures – no bacteria identified Infection markers slightly raised on admission
13.14	K161 H26	Blood 3 and Serum 2: 2OU015738(1) Blood 3 insufficient sample for analysis
14.18	K169 K[??]	Serum 3 (in fact urine) : 20U015871 (5) Tested for drugs BZE detected 0.017ug/ml @ E293 **This has become an important piece of evidence as it is the only toxicological sample which produced a positive. The documents produced by police from the hospital Consultant in Chemical Pathology and Metabolic Medicine says the '(5)' is a number added to the sample number which indicates a urine sample.**
19.54	K173 H26	Blood 4 & Serum 4: 2UO016717 (1) Blood 4 insufficient sample for analysis
		<u>Mother says heart rate very rapid and monitor went off.</u>

	C29 C51	F1 says he was told at 11.30pm that he was not allowed to stay on ward so he returned to PGM home with N
	K120-122	Nursing notes for evening shift Obs improving slowly K awake & alert & asking for Mother at 1am
5.4.19	H26-28	K serum samples
6.4.19	C52 H32 H200 K123 H589	Mother stays in hospital with K K wakes at 2am asking for juice. Lips dry and blue [H456] Mother says alarms went off at 4.30am Mother rings F1 but he doesn't answer and tries him at PGM home
04.37	K114-115 K123-124 K131 K133-134 K235 H448	Cardiac arrest call 04.37 [student nurse responds] Reg anaesthetist arrives at 04.40 – CPR ongoing Airway management taken over Adrenaline given – 2 rounds then 7 rounds [K124] Output not regained at any point. Mother witnessed CPR adrenaline given List of staff present at time of death [K134] Adrenaline log [K134; K235]
	C105	PGM St: *in the early hours of fifth of April 2019 at around 4 AM I think but I am not sure the mother rung me. She asked me if F1 was there and I said he was and went to get him. I asked the mother what happened and she said K had stopped breathing….. F1 was frantic and very upset he said he could not get a cab and I believe he ran from my house to hospital.*
	K117	Dr called by charge nurse re K cardiac arrest 2 rounds of adrenaline already given Arrives after resuscitation attempts stopped
05.05	K130	Additional anaesthetist arrives at 0505 Multiple adrenaline doses given as per protocol
05.37	C52 H590 J261-262 K2 K58 K59	K is pronounced dead at 05.37 Not thought to be suspicious **Mother's account in interview is consistent with records of the treatment including how many adrenaline shots and the time of death. Mother rings MGM and PGM. F1 not capable of doing so.**
6.4.19	C29 C52-53 C106 H200-202 H478 H590-592	Mother rings PGM to tell her of K's death F1 ran to the hospital F1 says he collected M and N and returned to live with Mother until his arrest PGM attends hospital with friend Mother goes to PGM home then MGM home *Mother says she could tell F1 had been drinking as was on something*

6.4.19	K132	Hospital inform LA and police of K's death
6.4.19		Police attend hospital
6.4.19	H31-32 H44-45 H54-57 H85-90 H268-271 H303 H309-310 H455-457 H592	Mother speaks to police at MGM home Mother says estranged from F1 and that F1 "not in a good way" & had been asked to be left alone with his thoughts Mother provides full account & raises concern about K's treatment in hospital
6.4.19	H91	Police note hospital have no safeguarding concerns Family behaved entirely appropriately
6.4.19	H282-285	Police BWV and photos of Mother's home
6.4.19	C53	Mother & PGM return to PGM home Mother says F1 had been drinking Mother visits MGM
7.4.19	H95	Police contact Mother – says today more difficult having felt numb the day before Police contact hospital for Mother to arrange to see K
8.4.19	H97-99 H273-274	Police attend coroner's office Coroner asks whether police will seek a special post mortem Routine PM recommended to coroner
8.4.19	H106	Police ask Mother if in contact with F1 Mother says she had spoken to him about police involvement Mother says F1 was "in a bad way" and not able to talk; Mother says she had left police details and he agreed he would call when ready; no contact from F1 as at 18.5.19
9.4.19	H1417-1418	K CT post mortem
9.4.19	H1478	Mother speaks to nursery staff about K's death
10.4.19	H1478	Mother goes into nursery and speaks about K's death
10.4.19	H20 H99-100 H1534-1555 H1556-1581 I11	Initial post mortem at GOSH – Dr Palm – inconclusive. Afterwards K's body was washed and dressed On Form 2 Dr Palm states the medical cause of death to be undetermined pending further investigation but likely to be natural. Police advise coroner that K's body may be returned to funeral directors although police informed that Mother does not intend on funeral taking place until all of K's organs have been returned
Afternoon		Hair sample from washed hair taken from K

12.4.19		AM blood/serum samples (x 7) received by GOSH
15.4.19	E5	Mother sees GP – feeling low, panicky & difficulty sleeping
16.4.19	E5	Mother sees GP
c. 16.4.19	H556 H594-595 H650	Mother says F1 kicked her in stomach 10 days after K's death and MGM chased him Mother says F1 hit L across back of her head Mother i/v: (16.7) *he was saying get rid of her stuff he was drunk of his face and off his face, so I asked him to leave….. Said I hated him and didn't want him there… He called me a fat cunt.. I was a slag.. I was sleeping with everyone on the estate. I was cheating. I open the security gate, but I wanted to hold onto the keys because he has a habit… He pushes the gate and takes the keys… He's lock me in the house so many times I open the gate and he's pushed it open and scraped my finger and I screamed at him and I shouted, and he was shouting and that. And then he turned around and he just booted me in the stomach… With his foot he was drunk, and he fell down the stairs likely slipped. L didn't see him kick me 'she came in the block and was screaming' get away from my mum and he whacked her on the back of the head… My mum sees that and pushed him out of the block entrance door…. He came back the next day.* F1 evidence: I pushed L once when she run up and kicked me. Me and the mother was arguing – she told me to go and the mother was screaming and shouting, and L saw it and I pushed her with one hand. I pushed L away as she ran at me and tried to kick me. She called me all sorts of names – get out of my house, MGM present *I was outside and they were arguing, he was shouting, she charged after him, she came back up and said he's kicked me in the stomach. I don't know how pregnant she was. I was angry at what she said as I got to the last couple of steps, he clipped L round the head. He used the flat of his hand, not a hit but more of a clip. L was already downstairs I don't know what. They was both angry they'd just had another argument. The look on his face, the shouting, they were both shouting L was screaming and shouting get away from my mum. It was offensive language, not to L to the mother. It was always about drink and her sleeping.* **The parties agree that there was an incident on this day. It is not clear how it started but would seem to**

		be consistent with the pattern described by both the mother and father 1 of an argument developing and the mother asking father 1 to leave. The weight of the evidence from the mother, the paternal grandmother the maternal grandmother and L suggests that the origins were probably related to father 1's drinking or drug taking and either the mother taking exception to this or alternatively father 1 being jealous and possessive and accusing the mother of being unfaithful. A shouting match developed with the mother then throwing father 1 out. The detail the mother gives of father 1 scraping her finger has the ring of truth and caused her to become even more agitated. This I am satisfied appears then to have led father 1 to kick out at her. I accept that he did so; the mother's own evidence, the evidence of the mother's contemporaneous complaint in the maternal grandmother and L's response all support the conclusion on balance of probabilities that father 1 did kick her. This led L to try to kick father 1 and he in turn hit her with an open hand around her head. I am satisfied this is an example of father 1's dark side when in drink. The mother was pregnant, father 1 probably did not want another child and his inebriation and loss of temper resulted in him kicking out at the mother's stomach. It was no doubt a spur of the moment action which he probably now regrets but nonetheless it was a deeply unpleasant act which was upsetting for the mother, maternal grandmother and L must also have been frightened by his slap to her head. Again, it was spur of the moment and probably under the influence of alcohol and at a time of intense stress following K's death. However, it is a manifestation of what father 1 is capable of. It is one of only two or three occasions on which the mother gives a detailed account of father 1 having used physical violence. At some point thereafter, father 1 returned to live with the mother and the children because the final separation of the mother and father 1 did not occur until the mother was told by the police that cocaine was believed to be linked to K's death. Given that the mother's memory for detail and the steps she took following the parties' separation to detail relevant events including incidents of physical abuse the absence of further detailed accounts supports the proposition that father 1's use of physical violence towards the mother was limited to a handful of occasions over 8 years rather than being a frequent feature of the

		relationship. Weight of the evidence the evidence also supports the conclusion on balance of probabilities that the mother did not sustain physical injury, nor did she consider father 1 to pose a clear and imminent risk of violence on a regular basis.
17.4.19	I11	Hair and blood/serum samples sent by GOSH for toxicological testing
17.4.19	H20-23	K Hair strand analysis Cocaine & BE (benzoylecgonine) detected in middle range Also, paracetamol Lignocaine Nicotine Caffeine
17.4.19		Rapid response meeting at hospital – Mother told no funeral until May
24.4.19	H101	Police considering closure of CRIS as death not considered suspicious
26.4.19		Professionals meeting following K's death to discuss support for parents and siblings L school attendance 81.6% - all authorised Working below target. Mother engages with school very well
26.4.19		L attend A&E with Mother Pyrexia
2.5.19	H1468	Visit to Mother to discuss support after meeting on 26.4.19
10.5.19 (not notified to police until 17.5)	H20-23 I7-9	Report of hair strand analysis Cocaine, BE, paracetamol, lignocaine nicotine & caffeine present in K's hair samples Unable to comment whether presence of drug was due to passive or active exposure
13.5.19	K418	L attends fracture clinic
	H1414-1424	Prof Jacques report *In my opinion the examination of the brain has not identified significant pathology that explains the cause of death*
14.5.19	C62	Father 2 first aware of proceedings; says he was initially told L had died
17.5.19	H24-25 H33 H101-104 H274-275 H386	Coroner's office (Caroline Purton) inform police of cocaine in K's hair sample Cocaine described as middle range usage – corresponds to daily or habitual use Coroner asks if police now require a special post mortem Police concerned re other children living in same

	J247	environment; to contact SW re professionals meeting next week LA informed
17.5.19	H104	Police authorise special post mortem
20.5.19	C9 F1-5 H108 N56	Initial Strategy discussion – police and LA Meets criteria for s47 investigation
20.5.19	H514	Police speak to Dr Palm Routine PM then after reading medical notes which highlighted K's regular hospital visits Dr Palm became concerned (potentially MSBP) and therefore obtained hair sample to establish long term tox result & blood from 5.4.19 (no samples from 4.4.19) Dr Palm thinks SPM useful as further tox samples could be taken eg liver & ? vitreous humour Skeletal survey no trauma
21.5.19	H108	Police plan to obtain account from F1 re K's exposure to drugs & to attend at his address unannounced
22.5.19	H29-30 H134-136 H275-276 H454-461 H1028 H1316 H1411-1413 H1497-1503 H1582-1590	K Special post mortem – Dr Cary and Dr Palm Hair samples taken from top of head – NRBC/1 left side of head - NRBC/2 right side of head – NRBC/3 liver sample – NRBC/4 nothing detected in fluid draining from liver inc benzoylecgonine *K had not ingested or been exposed to any of these substances during the several hours or so leading up to her death. However, due to the time interval between her hospital admission on 4.4.19 and death over which drugs could have been eliminated from her system, the negative results do not necessary preclude the presence of cocaine/ benzoylecgonine or a number of other drugs at the time of hospital admission*
22.5.19	H29-30 C9I2	Dr Cary preliminary report re special post mortem – 1. no evidence of natural disease which could have caused / contributed to her death 2. conspicuous focal acute myocardial necrosis in left and right ventricles which could be consistent with cocaine ingestion 3. awaits results of final testing before giving final opinion 4. cocaine intoxication would explain collapse and death. Symptoms such as tachycardia & fever would be typical symptoms following ingestion 5. hair strand results indicate significant and repeated cocaine ingestion, does not exclude deliberate administration by a 3rd party; previous administration might account for previous presentations in hospital

		without a definitive underlying diagnosis
22.5.19	C53-54 H204 H316 H543-544 H593-594	Police tell Mother cocaine is found in K's hair Police told to delay updates Mother aware of SPM, asked police if children would be taken away *Mother says she told F1 about cocaine and 'his face just dropped' she told him to take his stuff and leave. He wanted to take the PS4. He didn't put up a fight which he usually does. PGM rang later to say she'd said he should stay there a few days and not to take anything* PGM tells Mother she told F1 not to take anything. A message from PGM – Mother confirms this. [See Mother's Jan 2020 i/v H1972]
23.5.19	C2 C9-10 H64-68	When police attend Mother home to arrest her: N asleep in buggy M asleep on sofa L was brought from grandmother's house Mother, F1& MGM are arrested [see below for details of arrests]
23.5.19	C54	Mother & F1 separate
23.5.19	H113-116 H128-131 H277-278 H287-289 H297-299 H288	Police arrive at F1/PGM home; F1 leans out of window to ask why police are there – information not disclosed F1 is told he'd be arrested; he responds to the effect that he was very low already and could not get worse F1 described as agitated and shouting; also described as calm & compliant F1 says friend and PGM in home PGM says no one else in the home; does not want F1 smoking in living room Lodger and Q then heard PGM & friend appear agitated PGM says grandchildren inc K would come and stay in her home R leaves for work Search of F1/PGM home from 02.21hrs – with drugs dog Dog interested in corner of living room, end of F1 bedroom & in drawer in Q room – shoe box with cannabis grinders; no cannabis – not seized Bag smelling strongly of cannabis in F1 room [H278] Nothing of note found in areas where dog interested No search considered proportionate of R (lodger room)
23.5.19		F1 arrested at 02.40hrs
23.5.19	H112-113	MGM arrested at 03.01hrs L present – cries and asks for Mother L taken to officers outside and placed in police protection Home is searched – no evidence of drugs or drug paraphernalia

23.5.19	H121-123	Mother arrested at 03.28 hrs Search of home inc dog unit – no drugs said to be found Phone – iPhone 8+ seized Mother upset & crying when told of her arrest & in police station M asleep on sofa; N asleep in pram Appeared Mother asleep on other sofa Mother provides pin for phone
23.5.19	H154	F1 agrees to children having CP medical but does not consent to foster care
23.5.19	H141 H392	Mother asks police which grandmother had been arrested Mother is told MGM had been arrested; M says K & M spent most Friday nights with PGM
23.5.19	H62 G26-27	Children made subjects of police protection at 02.45 hrs & placed in foster care
23.5.19	Q1	Children described by FC
23.5.19	H264 H477-483	Mother interview 17.53-19.00 did not record audio only visual Officer notes 'don't know how it was in her system-father 1 has used it but wouldn't have given it to them-they loved him, and he loved them I took cocaine about five months ago-haven't since I have taken in the past but rarely as I have the kids. Took it five months ago with dad kids were away at their Nan's F1 brought drugs we had a drink he didn't bring much it was all used up during that one time I can tell when he has been drinking as you can smell it-harder to tell if he has taken drugs-you can see his mouth droop. It was never seen around?? House Father 1 doesn't work-lives off other people funds alcohol and drugs from his friends-might take drink from friends-no idea how he gets his money. Wednesday got up and took her to nursery-half day picked her up at 1230-she was fine-playing with M making a mess-may have taken them to pick up L-but not sure-if we had we would have travelled by bus and got the kids a sweet on way home. 6 PM she complained of a tummy ache-thought she just didn't want to eat her dinner-she was running around playing-between 830-nine she was fine as we were putting everyone to bed. At 2 AM she woke up and started being sick. Threw up several times during the night. MGM took L to school next day-K was sick a few more times during the day. PGM came around I took L to get her cast changed. Came back-K wasn't herself-her eye was swollen-she was retching-I put her in a buggy and took her to doctors with L and N. K started playing at GPs but felt sick and threw up. Her face started swelling up. I told

		Dr everything. He thought she had sepsis and sent her to A&E……. K's heart started to beat really fast and a junior doctor said they were keeping an eye on it. At 2 AM she woke up and asked for a juice. At 4:30 AM I went to hug K she took her last breath. A junior doctor came in and panicked and didn't know what to do. I was taken out and the doctors bagged her. I didn't know what to think-where could this have come from and how. Was there something at the nursery? My estate is pretty bad for drugs did she get it from the park? I didn't give her anything-I haven't seen anyone else give her anything. Only concern is Father 1's use of drugs and drink-his behaviour normally
23.5.19	H35 H141 H185-211	Mother interview 19.33-20.32 – with solicitor Full comment interview describing K and her character. Gives a very detailed description and description of her medical history. Describes the 3rd and 4th.
23.5.19	H989-990	PGM arrested at 20.14
23.5.19	H35 H64 H141 H163-183	MGM interview: 22.43-23.14 No solicitor Comment interview In interview MGM says she does not know if F1 takes drugs then says she knows he does hair & blood samples taken from MGM
23.5.19	H155	Mother gives hair sample to police Blood sample taken by FME
23.5.19	G27	Mother agrees s20 accommodation F1 does not agree
24.5.19	H141-142 H491	F1 interview: 01.55-02.20 Solicitor No comment on advice of solicitor and not to give samples until solicitor arrived
24.5.19	H153 H1290	Mother provides urine and hair sample to police No drugs mentioned on form – "not known"
24.5.19	H155 H1292 H1611	F1 provides hair sample to police Blood taken by FME; F1 says uses asthma pump daily
24.5.19	H227-243 H35 H67 H296	PGM interview: 11.58-12.31 Solicitor – says she should have had an appropriate adult PGM gives prepared statement [H229-230; H492-493] PGM refuses to consent to urine & blood samples on solicitor advice; consent given for hair samples – no officer available to take them
24.5.19	H1294 H1611 H1626-1629	PGM provides hair sample to police PGM states she takes fluoxetine for depression, amitriptyline & codydramol for spine & leg problems

	H1638	
24.5.19	C10 F6-8 G27 H522 H1112 N189	Multi agency strategy meeting GP positive about Mother
24.5.19	H132-133	Police attend F1/PGM home for detailed search
24.5.19	H117	PGM police interview
24.5.19	C10-11 E1-44	CP medicals re all 3 children M and L have poor dental hygiene N & M's immunisations not up to date N not weaned N has unusual pattern of motor development - ? limited tummy time
24.5.19	J21	L CP medical Summary medical history includes recurrent UTI, overweight, greenstick fracture, low mood Noted flat affect with limited eye contact and spoke in quiet voice Referral to CAMHS Follow up for LAC medical in 28 days
24.5.19	J101	M CP medical Recommends to see dentist for review
24.5.19	J196 Q97	N CP medical Foster carer expressed concern re lack of crawling, difficulty settling & limited intake of solid food 3 & 4-month imms overdue Advised to see dentist for review
24.5.19	N29 N53 N217	Email re CP medicals – no evidence of acute intoxication of children Any blood & urine samples need to be undertaken under a "chain of evidence"; police reported to have requested LA to arrange blood & urine samples
24.5.19	G1-22	LA application for EPO
24.5.19	B3 G33-34	EPO re L, M & N Mother & F1 are informed of the hearing but are in custody
24.5.19	H116	14.22 note Hair sample taken from PGM Refuses to sign 172 form to provide access to medical records
24.5.19	H248	Search of F1 / PGM home Drug dog negative
24.5.19	H999-1004	Search of MGM home
24.5.19	H7	F1 released on conditional bail

[also said to be 25.5.19]	H11 H16 H19	Mother released on conditional bail PGM released on conditional bail MGM released on conditional bail
24.5.19	H71 H301	PGM threatens to harm herself (jump in front of train) when she leaves custody PGM very emotional PGM says "I just want to jump in front of a train and end everything. I can't believe I've been arrested, I looked after those kids more than the parents did. I loved them more than anything" PGM is sectioned under s136 MHA; taken to hospital
25.5.19	H123-127	Police attend Mother home for more thorough search Devices seized inc Samsung mobile Letter seized re clinical negligence re K death
27.5.19	Q98 Q62	School impressed with changes in N – seemed happy not crying School say M more vocal
28.5.19	B1-22	LA application for section 31 orders
29.5.19	H417-424 H601-602	Mother calls police re F1 sending his friend to Mother's home to collect clothing Mother also wants police to attend as F1 approached her at court day before [H422] & also came to house
30.5.19	A4	Mother's position statement Struggling to understand how K had cocaine in her system
31.5.19	Q5	FC says L does not want contact with F1
31.5.19	Q63	FC says M happy to see F1
3.6.19	C10	K funeral due to take place
7.6.19	A14	F1 response to interim threshold Denies he exposed any of the children to drugs or drug paraphernalia
10.6.19	H998	Police collect K samples from Charing Cross toxicology
11.6.19	B31-34	Williams J Order
12.6.19	Q11	FC says L did not like seeing F1 when collected other children from contact
17.6-2.7.19	F30-35	N LAC review Good progress in development since in foster care
18.6.19	Q14	L tells FC that she didn't like F1 as he had pushed her once & her nan shouted at him Upset while telling FC this
20.6.19	H994-997 Q15	L is interviewed by police: 14.43-14.59 - F1 lives with them - Stays at nans nearly every night FC says L v quiet & uneasy, hardly hear her when answering questions; very withdrawn M started crying for FC – had to end interview Seemed ok after left station Hair samples & fingerprints taken

16.7.19	H1011 H1318-1321	MGM is arrested at 06.45hrs
16.7.19	H1019-1021	Police search MGM home Drugs dog gave no indication suggesting presence of drugs Drugs mapping using the ION itemiser machine Black Handbag, purse, purple handbag positive for cocaine; purple for heroin also
16.7.19	H1013-1017	PGM is arrested at 06.45hrs
16.7.19	H1322-1339	Police search PGM home Drugs dog indicated moped; nothing seized
16.7.19	H675 H676 H1282 H1924	F1 arrested at 7.05am Trying to escape via a window at that address 2 balloons found in medicine cupboard, one contained white powder (not cocaine) 3 phones found? statement about that search??
16.7.19	H1409	F1 hair sample [previous sample too low in weight]
16.7.19	H1017-1018	Mother arrested at 07.30hrs
16.7.19	H1008	R arrested Hair sample given
16.7.19		Mother interview: 12.27-14.28 – with solicitor
16.7.19	H1685	Mother gives hair sample
16.7.19		F1 interview: 16.55-17.39 – with solicitor
16.7.19		MGM interview: 17.18-18.08 – with solicitor
16.7.19	H1686	MGM hair sample
16.7.19		Q interview: 15.47-16.35 – with solicitor and appropriate adult Statement H762
16.7.19	H733-759	PGM interview: 19.57-21.20 – with solicitor [statement H734-735] Solicitor again says she should have an appropriate adult
16.7.19	H1010	PGM provides hair sample to police
16.7.19	H2271-2274	Drugs mapping in Mother home Cocaine readings in living room, front door, stairs/hall, child's bedroom & master bedroom
16.7.19	H2275-2278	Drugs mapping in MGM home Cocaine readings in bedroom 2 (drawers), handbags & purse & living room sofa
16.7.19	H2279-2285	Drugs mapping in PGM home Cocaine readings in kitchen, Q bedroom, front door, cupboard door, R room, pink room, PGM room, toilet, living room, Heroin detected in living room,

17.7.09		Q arrested Hair sample given
17.7.19	H1288	F1 released on conditional bail – to reside at PGMs; family say he does not live there
17.7.19	H1255-1264	Search of Mother home
17.7.19	H1240-1254	Search of PGM home Wrap of herbal substance in Q room indicated by dog [H1243] Illegible in R room [H1244] Cannabis grinder [H1245] PGM medicating [H1246] Yellow bong lodger room [H1246] Bag with white residue [H1249] Cannabis grinders [H1251-1253] Light brown material in cling film [H1252] Green herbal material [H1253]
17.7.19	H1021-1022 H1265-1274 H1317 H1678-1679	Search of MGM home Black Handbag & purse [H1270] Purple handbag [H1272] Letter referring to drug taking / addiction [H1273]
17.7.19	H1782-1807 H2127-2152	Surveillance log of hotel room – Mother & MGM Unredacted version **Mother and MGM calm. Talk about F1 assaulting M by kicking her in stomach – consistent with her account in evidence**
17.7.19	H1809-1905 H2029-2126	Surveillance log of hotel room – F1, PGM & Q Unredacted version F1 admits they were his pings in the jumper – they were his wraps I understood it to be cocaine as they said it was cocaine at the police station Admits the incident on 16th April took place in some shape or form
19.7.19	H934	R arrested at 6.55am
19.7.19	H933-949	R interview:
4.9.19	Q34	FC asks L if F1 works L says he doesn't sell pizza like he says he does, does other things like drugs When he's at my mum's house he will go to the toilet and there will be this white powder on the toilet seat he

		does it in my mum's room as well and when I see it I call mum and show her … he also hides alcohol in the house Jack Daniels My gran said I shouldn't be exposed to these things L says F1 secretly records M FC asks if she could say these things to police, L says she would
11.9.19	H950-972 H1652-1675	L interview: 12.26-12.57 – with intermediary - L more talkative - F1 sometimes lived with them, not very often in the flat. - L stayed mainly with MGM - Mum or nan takes to school - F1 used to push mum and shout at her. - Don't really like him - He doesn't really work, there this white powdery stuff. - I don't know what it is [leading Q seen him handling it - I think he gives it to people for money – I seen him do it at mums flat – by the door in mum's bedroom - In a drawer in a bag. I have seen it lying around the house. I haven't touched it. - Mother and F1 don't get on all the time – he used to drink and push my mum and shout at her - Doesn't know how often he drank – doesn't think it was every day – doesn't know (when pressed she wouldn't say) - I don't know if he took white powder - Smoked - Doesn't know what they argued about. - He pushed my mum and he pushed me (spontaneously said), didn't hurt herself 20.39 **Overall impression is of her being quite careful about being accurate, no obvious exaggeration or dramatization, doesn't seek to blame F1 for her broken arm.**
2019	Q130 Q132	P born [5 months] Mother changes her name before registering birth
4.11.19	B126-146	LA application re P
6.11.19	Q52 Q90	P placed with foster carer L & M happy
24.12.19	Q135	? F1 first contact with P
8.1.20	H1504-	Dr Paterson – correcting statement re sample being

	1505	urine not serum Serum 1 benzoylecgonine not detected Urine positive
27.1.20	H1494-1496	Police experts' discussion Cary, Palm and others
28.1.20	H1906-1928	F1 interview: 12.14-13.24 – with solicitor No comment
29.1.20	H1929-1981	Mother interview: 11.10-12.57 With solicitor
30.1.20	H1497-1503	Dr Cary post mortem report
5.2.20	H1982-2009	MGM interview: 13.31-14.08 With solicitor
7.2.20	B189-191	Order
13.2.20	B192-195	Order
13.2.20	H2010-2021	PGM interview: 14.36-15.15 With solicitor No comment
28.2.20	B196-205	LA application to adjourn fact finding hearing
13.3.20	B206-209	Order
17.3.20	B210-250	CG application re instruction of Professor Bu'lock
3.4.20	B251-258	Order F1 not putting himself forward as a carer Hearing to be by zoom