The Sheku Bayoh Public Inquiry

Witness Statement

Dr William Lawler

Taken by [redacted]

Via MS Teams

on 11 January 2023

Witness details

1. My name is William Lawler. My contact details are known to the Inquiry.

2. I am a retired consultant forensic pathologist. My qualifications are M.D., F.R.C.Path., M.F.F.L.M. I have also been awarded an O.B.E.

Professional Background and Qualifications

3. I graduated in medicine in 1971 from Manchester University. I then moved into the Department for Pathology at Manchester University in 1973 where I worked through the system.

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4. During that time, I worked upon and obtained a doctorate in medicine by thesis, and at the same time became a member, as it was then, fellow now, of the Royal College of Pathologists.

5. That entitled me to apply for a senior lecturer post in that department. I was successful in my application for that post and took up this role in 1981.

6. I then was granted honorary consultant status at the Manchester Royal Infirmary. I started to develop my interest in forensic pathology, and in 1984 I was appointed as a Home Office pathologist, primarily for the Greater Manchester area, but covering the whole of the northwest of England and anywhere else if required.

7. I went on and did that for about 20 years and then took semi-retirement and moved to Cumbria and continued doing Home Office pathology work in the northwest and in the northeast.

8. I found myself doing consultation work throughout the United Kingdom, and sometimes beyond. I remained on the Home Office register until about 2016, I believe. When I came off, I continued doing forensic pathology and continued with all various accreditations and everything else until about 2019.

9. It was at that stage that I felt that I needed to give up my licence to practise within GMC. I am still registered with GMC, but I no longer have a licence to practise, and I have not taken on any new work since 2019.

Experience of restraint cases and positional asphyxia

10. I have been asked about my experience of restraint cases and cases involving positional asphyxia. A case I worked on in the past was the

Hillsborough case. I was one of the pathologists instructed for the review. I provided a large number of reports on various deaths in that context.

11. Like any other forensic pathologist who works in a busy area and is dealing with a large caseload, I think you will inevitably find that these cases crop up and you have to deal with them. I do not think I have more or less experience than anybody else in my field, because these sorts of cases, when they turn up, have to be dealt with by the person who is on call.

Instruction of report

12. I have been asked whether I was instructed by the Crown Office and Procurator Fiscal Service (COPFS) by way of a letter of instruction. Yes, I received a letter of instruction from the Crown. This letter I have been shown dated 28 March 2017[1] looks like the one I received.

13. Together with the Crown's letter of instruction I was provided with various reports for perusal and instructed to provide commentary on the pathological aspects, including the methodology and approach taken, and to provide comment on the experts' conclusions and findings.

14. I am asked what access I had to witness statements when preparing my reports for COPFS. I saw some redacted witness statements. I haven't noted the individuals whose statements I read, or the individual police officers whose statements I read, because I felt that, as we said before, I was more interested in the generalities rather than in some of the specifics. Therefore the statements I read are those that were incorporated into my summary of the incident at page three of my first report, and there were some civilian

[1] COPFS-04503(a)

Signature of witness……[redacted]

statements as well. I can't be any more specific at the moment, although those instructing me should know exactly what they sent to me.

15. I have been asked whether the variety and scope of expert reports provided to me in the Crown's letter of instruction was unusual insofar as providing an overview of a case of such breadth. No, not particularly. I think there are occasions when there are advantages to be gained by somebody coming in from the outside and coming in fresh. Having a look at all the information available. That individual may or may not agree with what's been said before, but I do think that there are benefits from that, and this is something that we do not infrequently on each other's cases elsewhere in the United Kingdom.

16. I think we're all used to doing it, and as we get older, we find ourselves being asked to do it increasingly frequently because, presumably we have experience and the expertise in order to be able to do that and to give a considered opinion as an overview. So, no, I was not surprised. Sometimes a fresh pair of eyes is to everyone's advantage, and you never know until you find out.

Providing opinion on expert reports

17. I have been asked whether I felt under any obligation to provide comment on matters even where I perhaps felt that that issue was not strictly my field of expertise. I think that I would wish to make two comments to that. The first is I never have felt under any obligation to provide an opinion if I didn't think that I could provide an opinion. I think that's a fundamental point which should apply to all pathologists and indeed to everybody else. I've never felt under any obligation at all under any circumstances, and if I genuinely can't answer

Signature of witness…… [redacted]

a question or I can't contribute, I'm more than happy to say so and to leave it at that.

18. I think the other point that I would make, and that is that one of the roles of the forensic pathologist in cases like this is indeed to take into consideration the views and the opinions of others in order to try to create the overview which is expected of us. Therefore, I may not be an expert cardiac pathologist, but I know enough pathology to know that when somebody like Mary Sheppard says that it's normal and describes it as normal, then I'm prepared to accept it and to take into consideration the fact that that's what she thinks because I know that she's well-known and capable of providing that opinion. Similarly, with Professor Freemont who, again, is an expert in a particular area, and who is asked to address a particular issue in his area of expertise. But I do think it's incumbent upon me to take that into consideration when looking at the overall picture, and then to move on.

19. I think the same thing applies to the toxicologists as well. I am not an expert toxicologist. Either a laboratory-based toxicologist - who actually measures the drug levels- or, a clinical toxicologist.. I don't think that it is inappropriate for me to read what they have to say and to take their conclusions into consideration when looking at the picture as a whole. So, therefore, that is what I've tried to say in my report.

20. I am not a cardiac pathologist or an osteoarticular pathologist or a toxicologist but I do think that I'm entitled to take their views into consideration.

21. When it gets further away from medicine, and you have an expert in restraint for example, then I really am going to say that really is outside my field of expertise, and whilst I can read what that expert says in his or her report, that

Signature of witness..... [redacted]

is not going to influence what I say other than to take into consideration the fact that restraint has been applied.

22. But the finer points, no, they're not for me to take into consideration, but the subdivisions of pathology and toxicology I think that is perfectly fair and perfectly reasonable for me to provide comment. I have spent a lifetime interpreting toxicology findings in cases which are non-suspicious and which therefore haven't needed an expert as you've got in the context of this case.

23. I suppose I just add one point, and that is that when you've been around a long time, you will either know or know of many of these experts.

24. So I know Mary Sheppard. I've met her a couple of times. I know Professor Freemont, because I used to work in the same department as him many years ago. He was in the Department of Pathology in Manchester when I was there. So I know these people and I have experience of the work that they've done and, again, I've incorporated what they've done in other cases into my overviews of these other cases, and I've done the same here.

25. I have been asked whether it is fair to say that considering the opinions of other experts in specialist areas is something that is routine in forensic pathology. Yes, I think that is a fair comment. I think it is, and I think that it is the forensic pathologist's responsibility to do that and to provide the overview as best as he or she can.

26. There may be limitations in that, but I think essentially that is what we are being asked to do. Certainly, that is what we are asked to do in coronial work south of the border and in criminal work to a greater or lesser extent as well.

Approach to disagreement with expert reports

Signature of witness……[redacted]

27. I have been asked what I would do in a position where I did not agree with the conclusions of an expert report. I would make two points. The first is I have no hesitation in saying that I disagree with somebody because, if I do disagree with them for whatever reason, then not only do I not hesitate in saying so, but I'm under an obligation to say so.

28. If there were something in an expert report which I had read and felt uncomfortable with, then I would say to whoever is instructing me "I am not happy about this". I would be suggesting to them either that they go back and reinstruct and say "What do you think, because the forensic pathologist has said X, Y and z?" and "Would you like to reconsider your original views in that context?"

29. Or, equally, they are perfectly entitled to go and say "we see that there is some disagreement here, we will instruct different experts with the same expertise and see what they have to say". The instructor may or may not tell them that there has been a disagreement but see what they have to say from their perspective.

30. But I think all that's perfectly fair and reasonable. Having said that, I think that it is extremely unusual for there ever to be that degree of difference.

31. If any expert had been presented with material and felt that there wasn't enough to provide a detailed and accurate interpretation, then I would automatically have expected them to have turned around and said, "There isn't enough here for me to have an opinion". In other words, I think most experts would have done that if that was how they felt.

Failure to pick up rib fracture in initial autopsy

Signature of witness..... [redacted]

32. I have been referred to my first report dated 22 May 2017.[2] My report notes a delay in discovering that Mr Bayoh had a fracture given that it was not suspected during the Post-Mortem. I acknowledge that my Report notes that the fracture was picked up during the CAT scan carried out on 28th May 2015, and that the degree of decomposition made Professor Freemont's interpretations difficult. However, I was not in any way critical of Dr Shearer or Dr BouHaider in relation to that. I would wager that I would probably would have missed it.

33. After the event you will think to yourself "Maybe I should have looked even harder for this". But, I think that I can understand why it would not have been picked up in an autopsy.

34. You would look inside the chest cavity when the body had been eviscerated, and it was not visible from there. All other rib fractures would have been looked for, and none was found.. So I have no criticism of them at all, no.

Dr John Parkes report

35. I have perused Dr John Parkes' report when compiling my first report. I refer to my comments at page 11:-

"Almost all of what Dr. Parkes discusses is outwith my field of expertise, and so I include it only to provide an overview. I would, however, make three brief points:-

1. Dr. Parkes's description of the restraint accords with what I have (seen and) read.

[2] COPFS-00033

2. Like Dr. Parkes, I am impressed by the relatively short period of restraint (less than four minutes) before collapse.

3. Whilst there seems to me to be no real doubt that the deceased must have been subjected to significant compression on one or more occasions during the restraint, I do not think that it can be concluded, even on the balance of probabilities, that the petechial haemorrhages are likely to have resulted from that compression, although I do accept that some could have done."[3]

36. I have been asked what in particular I found significant regarding the restraint being less than four minutes. I think that the longer the period of restraint, the more likely it is that problems might arise as a direct consequence of that restraint.

37. I think that there is an inevitability about that, although that does not mean to say that it is necessarily going to prove fatal.

38. I think, when you have got a relatively short period of time, and, where all evidence that I read and have seen, indicates that the whole business is fluid, there is still plenty of movement going on, and I think that any potential for restraint asphyxia is reduced.

39. If Mr Bayoh had been held down for several minutes – and I mean several minutes – then that possibility of restraint asphyxia would have increased simply because he had been held down for that length of time. I think that the short duration is of importance in that sense.

[3] COPFS-00033

Signature of witness..... [redacted]

40. I have been asked whether my opinion on the short amount of time in relation to restraint asphyxia has been formed based on Dr Parkes' report. That is my opinion based on my general reading around the subject. I think it has always been important to me from the outset, and Dr Parkes merely picked up on the same thing and said the same thing.

41. I have been asked what reading I have done in relation to restraint asphyxia and the material I am basing my observations in relation to restraint asphyxia. I think it is more a question of what you absorb over time rather than my being able to refer to anything specific.

42. I confess that now I am retired, I do not read as much as I used to. I always used to ensure that I tried to keep up with the literature and see what was being talked about and the review articles, and all those sorts of things. I subscribed to a range of forensic journals when I was working full-time. Now it is more what you absorb under those circumstances rather than setting out to read specific articles.

43. I have been referred to page 11 of my report where I say:

> *"Whilst there seems to me to be no real doubt that the deceased must have been subjected to significant compression on one or more occasions during the restraint, I do not think it can be concluded even on the balance of probabilities that the petechial haemorrhages are likely to have resulted from that compression, although I do accept that some could have done."*[4]

[4] COPFS00033

Signature of witness..... [redacted]

44. I have been asked, in relation to this passage, whether I was given advice from the Crown at the time of instruction that it was not for me to draw conclusions of this nature, but rather to provide an opinion on the likelihood of certain outcomes. No, not that I am aware of. My recollection is that I was simply given reports to peruse and my instruction was to provide comment. I certainly do not recall any restrictions, constraints or guidance or anything like that imposed upon me.

45. I have been asked what factors, in my view, would be material to the Chair in considering whether the deceased was subject to significant compression, given my conclusion that significant compression occurred. As previously stated, I think we come back to the time interval to some extent here.

46. There is no doubt that the deceased was restrained. We know that. In order to effect that restraint, there's no doubt that he had to have been compressed significantly in order to allow the handcuffs to be put on to him, and leg restraints. So, we know that he has been subjected to significant compression.

47. I said "on one or more occasions" because I am implying that this is not a single continuous process. He is not cooperating, and so therefore there may be compression, but his moving around may reduce that compression in one area, but there may be increased compression in another area: that is what I am trying to convey here – the ultimate dynamic situation.

48. It is significant because it was effective in allowing him to be restrained. It is, however, likely to have been on more than one

occasion. What that means is also that any specific individual episode of restraint would have been relatively short.

49. Again, that comes back to what has been said about the totality of the restraint and the potential for that restraint to have contributed to the petechial haemorrhages.

50. For the avoidance of doubt, we have three components to consider:

(i) That we have got a situation where significant compression occurred.

(ii) That the significant compression has occurred on one or more occasions.

(iii) That the likelihood of that compression when considered alone, has contributed to the petechial haemorrhages.

51. My view is that I do not think that it can be concluded, even on the balance of probabilities, that the petechial haemorrhages are likely to have resulted from that compression. Plenty of other things are going on including the struggle and others. I am trying to confine my comments here to the compression.

52. I add the caveat "although I do accept that some could have done", because I think that is only fair.

53. I have been asked whether my conclusions on significant compression have been drawn from reading the evidence surrounding the Police Officers dealing with the deceased at the scene, as opposed to the findings of the autopsy. Yes, I have based

my findings on what the police officers have said and what independent witnesses have said as well.

54. If you see petechial haemorrhages at autopsy, then you try to find what the explanation is for them. There are occasions where the autopsy does not tell you. I think this is an example where the autopsy, in isolation, is not going to tell you what the cause or causes for those petechial haemorrhages was/were.

55. So, therefore, I come back to what I stated previously on being asked to provide an overview. I think that I am perfectly entitled to take these other things into consideration when offering a comment like that.

Definition of significant compression

56. I have been asked to clarify how I would define "significant compression". When I referred to significant compression earlier in my statement, I was meaning it in the sense that it, by itself, was sufficient to result in his being restrained.

57. If it had been insignificant, then he would not have been held in whatever way and by whoever long enough for restraint to be effective and to be effected. So it is significant in that sense.

Distinction between significant compression and asphyxia

58. I have been asked what, in my view, is the difference between the compression described and asphyxiation. One of the problems with this question, in my opinion, is the use of the word "asphyxia".

59. That is going to cause difficulties because you really need to know what the individual who uses “asphyxia” means by it.

Mechanical Asphyxiation vs Positional Asphyxiation

60. If one were to read through the documentation, there are people who distinguish between “mechanical asphyxia” and “positional asphyxia”.

61. Positional asphyxia is just what it says it is: It is the position of the body in relation to the environment, which interferes with the normal process of breathing. It is the positional aspects here which I notice Dr Steven Karch is very much against and which he refers to as ‘junk science’.

62. Now, I have not read all the articles that he quotes. I am aware of the fact that it was very popular in the late 1980s and early 1990s..

63. The problem of course is that a lot of early literature involved experimental work which was flawed for a variety of reasons, which I think is Stephen Karch’s point.

64. There may be an element of positional asphyxia in this case, but I think that is very unlikely to be the case. This is because it is a relatively short episode, and because there is clearly a dynamic where various people are moving around, it seems to me that there is very little time for the deceased to be in one fixed position to develop significant positional asphyxia.

65. The alternative is “mechanical asphyxia”. In this scenario and in this particular case, this is where a heavy police officer lies on top of the victim and prevents him from beathing.

Signature of witness…… [redacted]

66. Of course, in the Hillsborough case I referred to earlier, mechanical asphyxia was the essence of what we were dealing with there, where the individual had been compressed such as to interfere with the breathing. So those are things which need to be taken into consideration.

67. Although Mr Bayoh was held down by police officers, and additionally there is evidence, that is disputed, that a police officer lay across Mr Bayoh's upper body at one stage during the restrain, again it seems to me that it wasn't for very long.

68. We come back to that short time period as being important because cases where positional and/or mechanical asphyxia is/are thought to be of significance to the mechanism for death, are those where the individuals have been restrained for quite a long period of time and/or the position in which they have been held has interfered with their breathing.

69. None of that seems to have applied here, and we have got a relatively short period of time, which is why I come back to what I have previously stated. I do not think it can be concluded even on the balance of probabilities that the petechial haemorrhages have resulted from compression, whether it be positional or mechanical or both.

Report of Dr Maurice Lipsedge

70. I have been referred to page 12 of my Report that comments on Dr Lipsedge's report:

"This expert confirms what I, as an acknowledged non-expert in this field, had concluded: that the deceased was suffering from some form of severe acute behavioural disturbance on the morning of 3 May 2015 prior to his involvement with the police officers. Furthermore he opines that the deceased's acute psychosis was related directly to the drugs which he had taken."

71. I have seen Dr Lipsedge's report and I am aware that he does not use the term "acute behavioural disturbance", but provides a diagnosis of "psychostimulant psychosis" due to "psychostimulant intoxication".

72. I have been asked, against that background, what my understanding of acute behavioural disturbance is. I am not using it as a diagnostic label. I am saying that he had behavioural disturbance, that it was acute, and that it was severe, to look at those in reverse order.

73. As a pathologist, I am not too worried what label the psychiatrist puts on it. He can call it psychostimulant psychosis. From my perspective, the important thing is that Mr Bayoh undoubtedly had some sort of behavioural disturbance which was acute in that it came on over a relatively short period of time, perhaps a few hours. Clearly, it's not something that had been going on for days, weeks, months. So, it's acute in that sense, and it was severe.

74. I think that the evidence that I've read as to his behaviour, prior to and up until the time that he was restrained by the police, shows that it was severe psychosis of one sort or another. The second point in that paragraph, which I think is absolutely fundamental, is that, in Dr Lipsedge's view, that acute psychotic state was related directly to the drugs which he'd taken.

75. I have been asked whether my conclusions are based upon Dr Lipsedge's report or my own conclusions. In some respects it is both, but the initial view

which I drew from the evidence provided by the police officers and the civilians was that, clearly, there was a serious psychiatric problem. It's not as if this is a scenario which I have never encountered before. Therefore, when I read what I did, it seemed to me that this case fell into that category.

76. I accept it is a matter for the Chair to determining whether Sheku Bayoh suffered excited delirium or acute behavioural disturbance or some other condition in light evidence put forward. The Chair may think that it is of relatively little consequence as to what label is applied to it. It is both the causation and the consequent sequence of events which are of fundamental importance because they precipitated the contact with the police.

77.. It was because of that psychiatric problem or the acute behavioural disturbance, whatever term you wish to apply to it, that the police – rightly or wrongly – felt that Mr Bayoh needed to be restrained, and then we move on to the continuation of the sequence of events. I think that, had he not had that acute behavioural disturbance, then none of these events would have taken place.

78. I am aware of what the Royal College of Pathologists have said in relation to the use of "excited delirium" as a certifiable cause of death. Excited delirium or acute behavioural disturbance are not *per se* an adequate explanation for the death. You don't just die from the psychosis; you die from the problems that the psychosis creates. This is what we're dealing with here. So I have never used it as a cause of death for any of the cases that I dealt with, but I have dealt with cases where there has been a severe acute behavioural disturbance which has precipitated a sequence of events, at the end of which has been the death of the individual concerned.

Signature of witness…… [redacted]

Report of Dr Bleetman

Drugs, psychiatric observations and oxygen

79. I have been referred to page 14 of my Report commenting on Dr Bleetman's findings:-

"Dr. Bleetman provides what I, as a non-expert, consider to be a good review of the entity which he designates 'excited delirium' and, in particular, he addresses the sequence of events which occur with or without restraint, and how the restraint, however appropriate, may well inevitably make matters worse. In doing so, he has, in my view, tried to put the restraint into the context of the deceased's pre-existing abnormal physiological state caused by his psychosis – something which I consider to be very important."

80. I have been asked what is meant by the words "putting the restraint into context" and why it is important.

81. In answer to this, I refer to the bottom of page 12 of my Report, where Dr Bleetman talks about the psychotic state, and he says that these people become hyperthermic, acidotic, and hypoxic.

82. Dr Bleetman adds that:

"It is important to terminate these psychotic episodes as soon as possible" and that "*failure to do so significantly increases the oxygen debt, the acidosis, the dehydration, and the risk of developing potential life-threatening cardiac arrhythmias"*.

Signature of witness…… [redacted]

83. I think what he's saying that the deceased is already in a rather precarious physiological state, and that then, as I say in the next paragraph in my Report, quoting Bleetman verbatim:

> *"Before any restraint, the individual will have already accrued a significant oxygen debt, and any immobilisation carries the risk of restricting chest and diaphragmatic movement. This, even if modest, may compromise the individual's ability to restore adequate oxygenation and address the oxygen debt."*

84. So what I'm trying to say is that what Dr Bleetman has done is he's put the context of restraint into the precarious position that he maintains the deceased was already likely to be in before he encountered the police officers who had determined, rightly or wrongly, that the best way to treat the deceased in his best interests was to restrain him, and that's what I think I was meaning when I said that he has put the restraint into that sort of context.

85. I have been asked whether I accept that, based on Dr Bleetman's report, Sheku Bayoh was already in a state where he was already in oxygen debt, hypoxic, and acidotic, prior to police contact. I have been asked whether, if that were the case, the only reason for Sheku being in that state at that point of time would be due to drug consumption. That is my view because I think that the drugs that he has taken have precipitated the psychotic state that he was in.

86. I think it's the psychotic state which has precipitated the various changes, but that there is a direct cause-and-effect relationship between the drugs that he has taken, the acute psychotic state, and this precarious physiological condition that he had got himself into, because of his acute psychiatric state prior to his encountering the police.

Signature of witness..... [redacted]

87. I have been asked what would cause oxygen debt and what would make Sheku hypoxic and acidotic. Well, I think others are in a better state than I am to talk about the physiology, but there's no doubt, as Dr Bleetman has said, that the psychiatric state itself is likely to be associated with things like hyperthermia, acidosis, hypoxia, dehydration and cardiac arrhythmias, and I think that is a possibility prior to any involvement with the police.

88. The drugs themselves will increase the heart rate, the blood pressure and the risk of arrhythmias, and once you get the struggle, then all these things are compounded by the effects of the additional exercise which that struggle generates.

89. So I think you've got all of these pulling together and many of which will have already been established, though I don't know how severely, prior to his encounter with the police. This is all part of the acute psychiatric reaction that these people get, and, of course, because that psychiatric reaction is precipitated by the drugs. You've also got the potential toxic effects of the drugs themselves in addition to the problems that they create because of the psychotic state, and it, therefore, becomes a very multifactorial state of affairs which is compounded by the restraint and the struggle that's going on until in the end, of course, it proves fatal.

90. I note Dr Bleetman's conclusions where he says:-

> *"On first contact with the police, the deceased was already at a very high risk of cardiovascular collapse due to fatigue, the effects of excited delirium and powerful potentiating drugs even had there been no restraint. It is reasonable to assume the actions of the police officers are likely to have had a contributory*

Signature of witness…… [redacted]

role in the evolution of the deceased's collapse and subsequent cardiac arrest by adding one more factor to an already lethal brew. In effect, the restraint precipitated the cardiovascular collapse that was already likely to have occurred."

91. I have been asked whether I agree with Dr Bleetman's view that the outcome for Mr Bayoh would have been the same regardless of whether or not he had been restrained. That is very long and complicated.

92. Let's take it in stages. First of all, I am aware that these acute psychiatric problems, whether you call them excited delirium or whatever you call them, are associated with the sorts of problems that we've just discussed and that are documented by Dr Bleetman.

93. Where I'm reluctant to either agree or disagree is to the extent to which he has argued they were already in existence prior to contact with the police, because I don't know the answer to that.

94. I'm not a physiologist, I'm not a toxicologist, I'm not any of those. I come in after the individual has died and we're trying to piece things together looking back. I don't know what state he was in at that time, but we do know that these people do get into that state and they do so without being restrained.

In addition to the psychiatric problems, we have to take into consideration the direct cardiotoxic effects of the drugs consumed - they increase the heart rate, they elevate the blood pressure and they can precipitate arrhythmias.

95. So, if you've got somebody who is already in that state, they've already got an increase in heart rate because of the drugs, and you then get the psychiatric problems on top of that, it does make for compounding and complicating what is already there.

Signature of witness..... [redacted]

96. As to whether he would have died without the police involvement, there's no way that I know that anyone is going to be able to answer that with any degree of certainty.

97. What I do think and what I think I would be prepared to say is that the fact that he did get involved with the police, the fact that he was restrained and the fact that he struggled, I think makes it very likely that the police involvement caused him to die when he did.

98. I think those last three words are very important because it may be that Dr Bleetman is right when he is implying that he would have died anyway, but I think that it could be argued quite strongly that he died when he did because of the restraint and the effects of the restraint and, in particular, the struggle.

99. This is because we know that if the psychiatric state produces hyperthermia and acidosis and hypoxia and dehydration and cardiac arrhythmias, and we know that the drugs themselves cause similar problem.

100. You then have the individual being restrained and that causes, again, acute stress in every sense of the word. The layperson would say, "It winds him up" which it undoubtedly does.

101. The struggle compounds the problems that he's got with acidosis and with hypoxia and, to a lesser extent, with dehydration and increases even more the chances of his developing a cardiac arrhythmia.

102. So, my view, for what it's worth, is that whilst I don't know whether he would have died without the police involvement, I think it's reasonable to

Signature of witness…… [redacted]

conclude that he probably died with the police involvement when he did because of that police involvement.

103. That's not to imply, because I'm neutral in this sense, any criticism of what the police did or of their actions or anything else. The sheer fact that they had decided that he needed to be restrained, presumably for his own good, I think was a relevant factor in the totality of what ultimately went on.

104. I have been asked whether I would conclude that I agree that there is a possibility that Sheku Bayoh could have died without coming into contact with the Police, but that I cannot comment on the probability of it. Yes. I mean, I couldn't say "He wouldn't have died had he not come into contact with the police", because I don't think that is possible.

105. Equally, at the other end of the spectrum, I don't think that you can say, "He would have died even if he hadn't come into contact with the police."

106. I think we have to take the contact with the police in the context of everything else that was going on, and the reasons why the police were involved in the first instance is all part of the overall picture of the psychiatric state and the drug-induced problems that had occurred.

Rib fracture

107. I refer to Dr Bleetman's report, where it states:-

"I note Dr Bleetman's conclusions about the pneumatic chest compressions device with which I cannot disagree, and I agree with his comments about the possible causes for the deceased's petechial haemorrhages"

Signature of witness..... [redacted]

108. Dr Bleetman's conclusions here refer to the fact that the chest compressions were the most likely cause for the fractured rib.

109. I have been asked why it is that I state I cannot disagree with him on this point. I think my answer to that is that I made that comment not knowing what Professor Freemont's later views were about the fracture of the first rib.

110. I have since seen Professor Freemont's supplementary and more definitive report. I refer to the section of Dr Freemont's report:

"This is a structure right up high in the bottom of the neck and the force is being applied to the middle of the chest. But I can't envisage a situation in which that would lead to a fracture of the first rib unless there were fractures of lots of ribs"

111. I would agree with that. I've seen a very large number of people who've been subjected to resuscitation, some of whom have had the benefit or otherwise of the LUCAS machine.

112. It's quite right when he says that, by and large, they are far more likely to get fractures of ribs three, four, five or six than they are of rib one.

113. I think the point is you're presented with a case where there is an isolated fracture of the first rib and, therefore, people are wondering what the possible cause might be.

114. I think if you look at it in that way, then you have to wonder whether it could have occurred as a consequence of the LUCAS machine because these things are a bit variable.

Signature of witness…… [redacted]

115. I don't speak from experience. So, therefore, it's a possibility. I thought it not unreasonable to say it was a possibility. I'm not saying, "I thought that was the most likely explanation," And I do not think that Dr Bleetman was either. He was confronted with an isolated finding of a single rib fracture and he's trying to suggest what the possible causative mechanism for it might be. So, under those circumstances, I can't disagree.

116. I think that once I read Professor Freemont's second report, then I think that whatever the cause for the rib fracture was, it seems to me that we can exclude it as something which occurred after the initial contact with the police officers. Once Professor Freemont had carried out his further investigations, he concluded that the fracture occurred definitely within "24 hours of, probably within 6 hours of, and almost certainly no less than 2 hours before, death."[5].

117. If we do that, then in a sense it's not relevant to anything that then happened after that, and that's how I now read it and now look at it, and whilst we can debate, almost as an academic subject, the likely causes of an isolated first rib fracture, they then don't become relevant to the incident involving the police officers and/or subsequent events, including the resuscitation.

118. I have been asked whether I am in a position to provide an opinion on what the likely mechanism of injury to the rib was. I think Professor Freemont has looked at the possibilities and gone into the literature far more than I have.

[5] COPFS-00037 at paragraph 210

Signature of witness.....[redacted]

119. He provided a paper about isolated fractures of first ribs and talked about falling onto extended arms and so on. I think he's in a stronger position to be able to address that issue than I am.

120. I refer to the point that I made earlier in my statement when discussing autopsy techniques. It clearly wasn't apparent at that post-mortem and I probably wouldn't have found it, so I wouldn't have had the dilemma of having to try and offer suggestion as to its causation.

121. I have been asked whether I have come across first rib fractures during post-mortem examinations. I've seen plenty of rib fractures under a variety of circumstances and as a consequence of a variety of mechanisms.

122. The important thing is I don't think that I've ever found an isolated fracture of the first rib. In this context, I think that there are two points to address. The first is it's very difficult to find at post-mortem examination, so I may well have missed it. Secondly, as an isolated finding, it's very unlikely to give you much help as to what's actually gone on about the rest of the context surrounding the death of the individual.

Dr Jason Payne James report

123. I have been referred to page 15 of my report which comments on Dr Payne-James' report:

"I'm not in a position to comment as to the exact nature or the nomenclature for the deceased's psychotic state but I agree with Dr. Payne-James that it must have been related to the drugs which he had taken."

124. Similar to my comments above, it doesn't matter what name you apply to it, the fact is that the drugs have precipitated this severe acute behavioural disturbance, regardless of what name or diagnosis is applied. I think that we have an important sequence of events, which is: the consumption of the drugs, the development of an acute psychiatric state, and the consequences of that acute psychiatric state, which is the encounter with the police.

125. I have been asked whether I feel qualified to pass comment on the terminology of Sheku Bayoh's psychiatric condition. No, I leave that to those who are more clinically and psychiatrically orientated than I am. I wouldn't wish to be specific.

126. I have been asked whether I can provide an explanation regarding how consideration of acute behavioural disturbance and excited delirium have developed in professional forensic discussion in the past five years. No, I think it appropriate to leave that to others. The finer points of the psychiatric disturbance, I think, should appropriately be left to others who are experts in that field.

127. Continuing at page 15 of my report, I have been referred to the following paragraph:

> *"[petechial] Haemorrhages such as those seen in the eyes may be associated with mechanical asphyxia or chest compression"] Dr. Payne-James refers to 'mechanical asphyxia' and 'chest compression', I am uncertain as to whether he is using them as synonyms or whether he is implying somewhat different meanings".*

128. I have been asked about my observations about being uncertain about Dr Payne-James meaning here. I am uncertain as to whether Dr Payne-

James is using the terms “mechanical asphyxia” and “chest compression” as synonyms or whether he is implying a different meaning. Other experts who have been consulted have tried to draw a distinction between positional asphyxia and mechanical asphyxia.

129. I’m not quite sure what Dr Payne-James means in the context that he uses the term here. Maybe it’s me being rather pedantic, but I wasn’t quite clear what he was trying to say. I have been asked whether there can be a combination of positional asphyxia and mechanical asphyxia in some circumstances. Yes, I’m sure that’s right. I don’t think you get it very often, but I see no reason why in theory there couldn’t be an element of both occurring under certain circumstances.

130. I refer to my report statement in reference to Dr Payne James’ report:-

> *“There seems to be a slight imbalance between ‘haemorrhages such as those seen in the eyes may be associated with mechanical asphyxia or chest compression’ (paragraph 849), and ‘the petechial haemorrhages to the eyes may represent chest compression, although they can be incidental post-mortem findings. The history from the accounts provided and the presence of the petechial haemorrhages would be consistent with a mechanical asphyxia’. (paragraph 858). I cannot disagree with the essence of Dr. Payne-James’s conclusion, but I do think that it is important to emphasise that Petechial haemorrhages can indeed be an incidental post-mortem finding and that, if so, they need not reflect mechanical asphyxia or, in a more general sense, chest compression.”*

Signature of witness…… [redacted]

131. I have been asked to explain this. Petechial haemorrhages of the sort that are seen here occur as a consequence of the interference with the drainage of blood away from that part of the body. They are most classically seen in the eyes, the eyeballs, and the eyelids.

132. The most typical contexts in which we see petechial haemorrhages are when the neck is compressed, as in strangulation, whether by a ligature or by hand, because the strangling agent, the ligature or the hand, is compressing the neck and preventing the blood from draining away from the head. So that pressure in the venous side of the circulation rises causing these tiny little vessels to go 'pop', and they bleed on a local basis.

133. So that's one of the commonest mechanisms that I, as a forensic pathologist, see. The second commonest mechanism is where there has been severe and fairly prolonged chest compression so that the individual has been unable to breathe in and out adequately. That compression has then been sufficient to interfere with the blood draining from the head down into the heart; consequently, the pressure in the venous system has increased and petechial haemorrhages have resulted.

134. We come back to the Hillsborough disaster and the fact that the vast majority of the victims thereof had quite extensive petechial haemorrhages, but that's the mechanism.

135. You can do other things which may allow that mechanism to develop. Positional asphyxia is where the body is in a peculiar position to interfere with breathing and to interfere with the venous return.

Signature of witness..... [redacted]

136. The problem with this case of Sheku Bayoh is that we know that you can get petechial haemorrhages in other circumstances.

137. The commonest other circumstance that I saw as a practising pathologist, not necessarily a forensic pathologist, but as an autopsy pathologist conducting 'routine' autopsies of individuals who have died but the circumstances were non-suspicious, and they've died because they've had a heart attack.

138. What I think happens is that, as an immediate prelude to the heart attack, they get irregularities of the heartbeat because of the heart disease. That interferes with the venous drainage and therefore puts the venous pressure up and they get petechial haemorrhages.

139. So you can get them under those circumstances, and if, as we know, the psychiatric state that we're dealing with here and the drugs that we're dealing with here, if they give rise to arrhythmias, then there is the potential for those arrhythmias to do just that. In other words, to create circumstances whereby the venous draining into the heart is interfered with and you may get petechial haemorrhages, and probably not very many, but, of course, we haven't got very many here either. So there's that possibility.

140. The third thing that is said, it's very difficult to prove it because you often don't get enough evidence, but they do say that vigorous cardiopulmonary resuscitation may result in petechial haemorrhages developing, and that includes the use of the LUCAS machine, for obvious reasons.

141. Now, whether that is the case or whether it is that the resuscitation brings out those that were always going to be there but weren't when the patient came into hospital: Or, whether it is that the patient came into hospital and

because of the intensity and urgency of the resuscitation being carried out, nobody really looked closely in the eyes to see whether they had any petechial haemorrhages, but we know that after the resuscitation had been unsuccessful, some petechial haemorrhages were identified.

142. So these are the causative mechanisms and these are the contexts in which we see them and, of course, that means that if you take an individual case, as we are doing here, then you can't automatically presume – as all the experts seem to have said to a greater or lesser extent – that the petechial haemorrhages, which were identified, must have been as a consequence of problems arising during the restraint.

143. In other words, there are alternative realistic explanations for the petechial haemorrhages seen in this case (apart from chest compression), and I think that most of the experts say that, though some of them are a bit stronger about that problem than others.

Professor Mary Sheppard report

144. I had little to say about Professor Sheppard's report. I agree with her conclusions.

145. I have been asked if I have any particular expertise in cardiac pathology. No, other than I've looked down a microscope at many hearts over the years in my role as a pathologist. I don't profess to have any particular expertise. The basis for my comment regarding submitting the heart in its entirety to a cardiac pathologist is something that I did increasingly towards the end of my working career.

Signature of witness…… [redacted]

146. I just felt that it was better for the cardiac pathologist to get the whole heart and then they can do what they want with it, and they can then say with absolute certainty, "I've looked at this heart and there's nothing wrong with it," and it avoids the potential criticism.

147. However, Professor Sheppard clearly felt – because I'm sure she would have said so if it were not the case – that she was in no way limited by what had been provided to her. She wouldn't have said, "This heart is morphologically normal," if she hadn't thought that it was.

Dr Elizabeth Soilleux

148. I refer to page 17 of my Report where I refer to Dr Soilleux's conclusions stating:-

> *"I think that the various factors considered by Dr Soilleux are entirely fair and reasonable, and there is nothing here with which I can strongly disagree. In particular, I think that her dividing the effects of restraint into the potential for asphyxia and the consequences of the struggle are very important."*

149. I have been asked what I mean when I refer to the importance of dividing the effects of the restraint and the consequences of the struggle. It's impossible to restrain somebody who is unwilling to be restrained without their putting up a struggle. So, there's a lot of artificiality about trying to separate out the two.

150. Nevertheless, she talks about positional asphyxia, and she talks about mechanical asphyxia and deals with each of these, and also makes the point that the potential restraint and the effects of the stimulant drug could have given rise to the picture that we've got.

Signature of witness…… 

151. She then goes on to say, *"The struggle would have put considerable strain on the heart as it's likely it would have increased the blood pressure and heart rate"*

152. I think what she means here is that the struggle because of the restraint is going to make worse all the abnormal physiological problems that the deceased would already have had. I think that she is very strong in her views that the struggle has been very important.

153. I have been asked whether my understanding of Dr Soilleux's report is that she is trying to separate the matters of (a) the effects of restraint; (b) the potential for asphyxia; and (c) the consequences of the struggle, and discuss the effects of each of these in isolation.

154. My easy answer to that question is you really need to ask her that, but that's how I feel. I think that she is trying to create a theoretical approach, and she is saying, again, as I've quoted earlier in my statement, that restraint may have two impacts. The potential for asphyxia and the fact that it induced the deceased to struggle, and that undoubtedly is true.

155. What she's saying is that restraint itself may contribute to the reduction in oxygen either because of position, or because of mechanical chest compression.

156. She's saying, separate from that, that the actual physiological effects of the struggle are very important, and I think that that is fair.. The difficulty I think in practice and in reality is that, from the pathological point of view, it's really impossible to be able to separate those two out as easily as you can in theory.

Signature of witness…… [redacted] ……

Sickle cell trait

157. I am referred to the passage of Dr Soilleux's report that states: *"serious consideration should be given to testing for sickle cell disease, even at this late stage"*. I understand that this testing was subsequently carried out and the result confirmed that Mr Bayoh was a carrier of sickle cell trait. I have been asked whether I have seen the subsequent reports compiled by Dr Soilleux and Dr Lucas. I didn't know about the positive sickle cell trait until her second report and Sebastian Lucas's report landed on my desk last November.

Dr Nathaniel Cary's report

158. I have seen Dr Cary's report[6] and have been asked for my comments in relation to his findings in page 5 of his report, where he states:

"The petechial haemorrhages in the eyes may indicate a degree of asphyxia. In this case, most likely originating from compression of the trunk in a face-down position rather than any compression of the neck, for which there was no evidence.

As set out in my report, at page 21, *I personally think that it is important to appreciate that petechial haemorrhages can occur in contexts other than asphyxia and that they therefore need not reflect any asphyxia at all"*. I cannot disagree with Dr Cary's interpretation in respect of petechial haemorrhages. I accept that they are consistent with asphyxia but I would emphasise that they can also occur in other contexts. You can't therefore automatically presume that they *must* reflect asphyxia.

[6] COPFS-00033

Signature of witness..... [redacted]

159. I have been referred to Dr Cary's report at page 6 which states:-

"Restraint cannot be separately considered from struggling. As is commonly the case in acute behavioural disturbances, the deceased displayed remarkable strength and stamina. Ongoing restraint and struggling in these circumstances is very likely to lead to significant metabolic disturbances with early breakdown of muscle, releasing potassium, which can precipitate cardiac dysrhythmias and the development of metabolic acidosis."

160. I have been asked whether I specifically agree with any of the comments made here in terms of the struggle and the resulting symptoms as a consequence of the struggle. I do agree with that. I think that all of these factors, to some extent, each compounds the other, but they're all important when trying to provide an overview as to what's gone on. I agree with what he says about ongoing restraint and struggling in these circumstances making everything worse.

161. I have been asked to provide my view on how important the struggle was in the incident involving Sheku Bayoh and why. I think it's very important. I think it's impossible to separate out the restraint and the struggle, because they're both occurring at the same time. The restraint is making the struggling worse, and the struggling is making the restraint more difficult. So we can't separate them out anyway.

162. I do think that the struggling *per se* has to be important because of all these things that Nat Cary's just been talking about. The hyperthermia, acidosis, the hypoxia, which were already there, are going to be made worse by the struggling.

Signature of witness.....[redacted]

163. We know if you exercise, and if you push yourself and exercise hard, then you do get acidosis, you do get some hyperthermia. You may even get a bit of hypoxia. You certainly get dehydration, and in some individuals, there may be cardiac arrhythmias, particularly if you've got a susceptibility to it. So, we know that severe exercise, in the broadest sense of the word, is going to give rise to these things and, therefore, it's going to compound the problems that are already present.

164. So I think it is very important, which is why I felt, like Dr Cary, that the word struggle should feature as an integral part of the formulation of the cause of death, because I think it's that important.

165. I have been asked if it is my view that he struggle and the restraint both contributed significantly to Sheku Bayoh's death. Yes, I think that's right. Again, I come back to the pedantic point that I made earlier in my statement in relation to Dr Payne-James. I think they are very important when you are trying to explain why the deceased died when he did, and because he was being restrained and because he was struggling right up until the time he collapsed, then I think that that means that they were important factors in causing him to die when he did.

166. I have been asked but for the restraint of Sheku Bayoh, would he have died. No, I am not in a position to answer that question. The answer is I don't know. He might have done, because there is no doubt that these people do collapse without being restrained. So, yes, he may have done. But I don't think you can say with certainty in Mr Bayoh's case, "Yes, he would," or, "No, he wouldn't."

Professor Lucas' report

Signature of witness.....[redacted]

167. I have been referred to Professor Sebastian Lucas's report (COPFS-00084). I am referred to page 2 and 3 of his report:

"In evaluating the clinical pathology, the critical aspects are the amount of sickling of red cells and in how many critical organs. There is no rigid morphological case definition – we must acknowledge – that separates harmless sickling from harmful sickling: it is inevitably somewhat subjective, and informed by the observer's previous experience. And it must be acknowledged that changes in the body's tissue post-mortem can contribute to sickling of red cells. But the quantity of sickling here tells me that this is much more than just post-mortem sickling; it happened peri-mortem as part of the death processes.

In the BAYOH case, I am impressed by the quantity of sickling in the organs such as the heart, kidneys, liver, thyroid and adrenal – much more than I expect to see in the organs of those with HbAS who died of unrelated causes"

168. Continuing at page 3 of his report, Professor Lucas states an alternative cause of death of *"1a. sudden cardio-pulmonary failure 1b. sickle cell trait, recreational drug use, struggle against restraint ".* In relation to the three factors of sickle cell trait, recreational drug use, and struggle against restraint, Professor Lucas comments that *"I do not think we can quantify the contribution of the three factors and state with rigor that one is more or less important than the others. It is multifactorial."* However, I have been advised that Professor Lucas has now revised his opinion on this and considers that the reference to sickle cell trait in the cause of death should come under part 2 as he now considers it a minor contributory factor. I am asked to comment on this.

Signature of witness…… [redacted]

169. First of all, part two of the death certificate actually says, "Other conditions contributing significantly to death." It doesn't say they're less important or more important. It just says, "Other conditions contributing significantly to death," in addition to those that have been put down under 1(a) and 1(b) as being separate. Professor Lucas is entitled to put whatever emphasis he wants on the various components that he thinks should appear in the death certificate, but that is not implicit in what he has done. He has simply said that it's a significant contributing factor. Secondly, in putting sickle cell trait under part two, he is saying that it is separate from and different from the other factors that have gone under 1(b). Now, some people would argue – and I'm neutral here – that if you think that it has contributed together with those factors under 1(b), it should go alongside them under 1(b) rather than be under 2, but we've got a minor debate, maybe a minor disagreement, as to the emphasis that you should put on things on death certificates. He's perfectly entitled to that view, but I'm not sure that that's how I would interpret what his modified death certificate says.

170. In terms of the role of sickle cell trait in Mr Bayoh's death, I think that I would tend to agree with Professor Lucas' revised opinion. It probably is not as important as the other factors i.e. the drugs and the restraint. When you come to ask the question "Why did the deceased die when he did?" I think it's relevant because it would have made things worse once he became hypoxic, once he became acidotic, which he did because of the drugs that he'd taken, the acute psychotic state and the restraint and the struggling. You then add onto that the problems that you get when he becomes even more acidotic and even more hypoxic, and then you're going to get the sickling taking place and that's going to reduce any chances of successful resuscitation. It's going to reduce them quite significantly. So, therefore, if

Signature of witness..... [redacted]

you ask the question, "Did the sickle cell trait contribute more than *de minimis* to causing him to die when he did?", then I think the answer is yes.

171. My difficulty, if I can put it that way, is trying to quantitate it. I just don't know how you do that. Professor Lucas clearly has described a lot of sickling in his report, and if there was that amount as an ante-mortem phenomenon, albeit short ante-mortem timescale, then it sounds as if it is actually quite an important factor in causing him to die when he did. I suspect that if you were to ask me the question "Is the deceased likely to have died if he hadn't had sickle cell trait?", then I think the answer to that is yes. I think that the changes were already so well established that they were highly likely to be irreversible, and that, if anything, the sickle cell has merely compounded those difficulties and merely made things even worse.

172. I have been asked what experience I have had of cases involving sickle cell trait. It is something that I'm well aware of and ever since I did a case back in the early 1990s, I have always, in cases that I've been involved with, ensured that sickle cell was looked for when you have individuals of Afro-Caribbean origin because it's more common than we know and it can be an important factor – to come back to what I've been saying before – to explain why the individual died when he did, and I think it's important in that context here, but I can't say that I've dealt with very many cases, and I certainly haven't dealt with as many as I know that Professor Lucas has.

Dr Jack Crane

173. I have been referred to paragraph 5 of Dr Jack Crane's report[7] in which he states:

[7] COPFS-00134

Signature of witness.....[redacted]

"It is frequently not possible to determine from the post-mortem findings alone if positional/postural asphyxia caused or contributed to the fatal outcome. In such cases, it is consideration of the circumstances of death which are often of crucial importance in determining which role, if any, restraint played in the death."

174. I am asked if there is anything I disagree with in this report. There is nothing in his report that I disagree with. I think here Dr Crane makes the point which I'd like to think I've made in my report[8], and that is that we've got to be very careful as to what conclusions we can actually draw from the post-mortem examination and how we then have to take into consideration associated circumstances. I think he is absolutely right there. He says it's frequently not possible to determine from the post-mortem findings alone if asphyxia has caused or contributed to death. I think quite a few of the experts whose reports I read have actually made that point.

Dr Steven Karch

175. I have been referred to page 23 of my report where I have commented on Dr Karch's view that Mr Bayoh suffered from pre-existing heart disease, and that this could be fatal in its own right: *"I as a non-specialist in this area, am not in a position to comment or attempt to arbitrate"*

176. This is still my view. I would defer to individuals who have more expertise in this area than I have. You have Professor Sheppard, Dr Soilleux and Dr Cary (who was a cardiac pathologist before he was a forensic pathologist). I understand that Dr Karch has views which don't accord with those who claim to have that expertise. That dispute is for those individuals to comment on. I can only say that, if there was evidence of heart disease, then it would serve

[8] COPFS-00033

Signature of witness..... [redacted]

to add another potential predisposing factor. If it's not there, then I don't think that affects any of the conclusions that I have reached.

177. In my pathological experience, where I came across a case where the cardiac component may be relevant, I would send the heart to a cardiac pathologist. In the vast majority of cases I would take tissue to look at down the microscope. I could then have looked at it with someone else - exactly as the two pathologists in this case did. But if there was a case where I thought the cardiac pathology might be very important, either from a positive or negative point of view, then I always thought that it was better to get somebody who was more experienced than me to give an authoritative view.

178. Looking at the heart and looking at tissue slides under the microscope is a standard part of my role. But part of the skill of this role lies in looking down the microscope and being able to identify that there's something there with which I'm not happy, with which I'm not particularly familiar, and I need somebody else to have a look at it. I would say that in the vast majority of cases you look down the microscope and you realise there is no significant abnormality. Essentially, it is within my area of expertise, but I recognise that I don't have the level of expertise as someone who is a practising cardiac pathologist.

179. I've been referred again to page 23 of my report, where I state: *"I note Dr Karch's considerable strength of feeling about the subject of 'positional asphyxia' in the context of restraint in general, and the reasons why he dismisses it as a possible factor contributing to death in this particular case."*

Signature of witness..... [redacted]

180. I have been asked whether I've formed this opinion on the basis of the report Dr Karch produced in this case[9], or whether I have read the research to which he refers or both. I was referring here specifically and solely to the reports that he provided in this particular case. I know that he has strong views, but I've not studied them in any detail.

181. When considering a case in which restraint is involved and considerations of positional asphyxia, I think that you have to take each case on its merits. I think in this case the entity of positional asphyxia is not significant and not relevant, which is what Dr Karch is saying, but I think he's a bit stronger than that and is a bit more generic in what he says than taking each individual case on its merits. I don't wish to do him a disservice and to criticise him, but that's how I feel. It's just a matter of degree, I think, as with a lot of things in medicine – that you never say never, and you never say always.

182. I'm asked for my comments on Karch's dismissal of positional asphyxia, in the context of restraint, as unproven. I wouldn't go as far as that myself. I am aware that much has been written about positional asphyxia in the context of restraint, but much of it is at the physiological level and, as such, it is beyond my expertise as a pathologist. I understand that other experts, such as Dr John Parkes, have a different view of the research regarding positional asphyxia and that in their view, Dr Karch does not have the relevant expertise to interpret this research. I accept those arguments. I'm not in a position to assess the research to the same extent as Dr Karch or Dr Parkes and so I'm therefore happy to defer to those who have the appropriate expertise.

[9] PIRC-02526(a)

Signature of witness..... [redacted]

183. My only other comment, which I think is valid, and that is when we are talking about this particular case then I don't think that there is any non-pathological evidence which suggests to me that the deceased was in a compromising position, as far as potential asphyxia is concerned, for any length of time. We've got a dynamic situation with the deceased is moving as he is struggling against the restraint, and then in the overall context of the position that he may or may not have been in, I don't think he's been in any abnormal or unusual position for any length of time, nor could he have been given the totality of the timescale. So, I think that some of Dr Karch's points about positional asphyxia are in fact relevant. It's his overall dismissal of everything which I have my reservations about.

184. I have been asked whether I agree or disagree with his conclusions that there is no way to establish whether positional asphyxia actually occurred in this case. My view is that there is certainly, no way to establish whether it occurred in this case from the pathological findings. I think we've established that, and several others have said that, including, Professor Crane. What I think we as pathologists are entitled to do is to look at the rest of the evidence and my view, my interpretation of the rest of what I see, plus the pathological findings, would suggest to me that I don't think positional asphyxia has been a factor in, or a significant factor, certainly more than *de minimis*, in this man's death.

Professor Anthony Freemont

185. I have been referred to the report of Professor Anthony Freemont[10] dated 3rd July 2017. I am asked whether, given Professor Freemont's conclusions

[10] COPFS-00037

Signature of witness..... [redacted]

as to the potential causes of the fractured rib, I think that the rib fracture is likely to be relevant when considering the direct force applied by the police officers. My view is that I do not think that it is likely that the rib fracture is consistent with direct force applied by the police officers.

186. I'm not in a position to provide an opinion as to when the fracture occurred, and I would require an expert opinion on this point to allow me to form a conclusion about this. Professor Freemont has the expertise. I'm entirely dependent upon his interpretation as to what he sees. I think we're entitled to take somebody else's expert view into consideration when trying to draw our own conclusions, but it is a conclusion which is based exclusively on his interpretation of what he sees down the microscope.

187. I have been asked whether I would defer to Professor Freemont's opinion if his view on the timing of the fracture changed, so as to place it in the realms of something that happened during the incident at Hayfield Road. My answer to this is yes. I would be quite happy to defer to this view, and to alter my views accordingly.

Restraint

188. I'm referred to page 24 of my report where I state:

"At the time of his [Sheku Bayoh's] initial contact with the police, the deceased was suffering from some severe form of acute behavioural disturbance. Indeed, it was that abnormal behaviour which necessitated police involvement at the request of members of the public."

189. I have no doubt that Mr Bayoh was severely affected by acute behavioural disturbance. I note that all of the other experts consider that his behaviour was precipitated by the illicit stimulant drugs that he had taken, MDMA, MDA and alpha-PVP, also nandrolone. I think nandrolone is probably much less relevant than either MDMA or alpha-PVP in this context, and also,

Signature of witness…… [redacted]

the MDA, which is present in the deceased's blood, I accept the MDA may well have, but need not have been, derived from previously ingested MDMA. Although I think it's not necessarily appropriate automatically to presume that the MDA that is present must have been solely as consequence of metabolism of MDMA. I cannot disagree with the toxicologist's argument that the MDA concentration was lower than that of MDMA.

190. I have been referred to the overview section of my report at paragraph 7, page 25 in which I state:

"I think that it is important to note that less than four minutes elapsed between the deceased's being described as 'secure on the ground' and his becoming unresponsive and unconscious, because this must mean that any significant chest compression while lying on the ground could not have lasted very long."

191. I have been asked whether the duration of the compression applied is important. The point I make is that it's a very dynamic and a very fluid situation, and therefore it's possible that there may have been chest compression, but that Mr Bayoh then moves because he's struggling and gets in a position whereby there's less chest compression, and then struggles again and gets more chest compression. In other words, it's the continuity which is just as important as the entity. Therefore, I think this must mean that any significant continuous chest compression whilst lying on the ground could not have lasted very long.

192. I am asked if the position of the deceased – whether he was on his front or was able to move onto his side – is an important factor. I think it's an important factor when it comes not so much to the concept of positional asphyxia but the concept of mechanical asphyxia, i.e., the pressure on the chest reducing his ability adequately to breathe. One of the things that came out from Hillsborough was that it was far more important when you got front-

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to-back compression than if you got side-to-side compression when it comes to interfering with ventilation. So, you can withstand more pressure from side to side and still breathe adequately than you can if you are compressed front-to-back or back-to-front. That is more dangerous in that sense, and of course we're talking about mechanical or potential mechanical asphyxia here. In reality, it doesn't matter whether the deceased is face down and you've got somebody lying on his back or whether the deceased is supine, face up, and somebody's lying on his abdomen and chest. Either way, it's interference with respiration.

193. But neither of those seems to have been a prominent feature in this case and, from what I gather, it certainly didn't last for very long. It may well be that given his precarious physiological state, and given the fact that he almost certainly was going to be hypoxic and acidotic and dehydrated because of the psychotic state that he was in, and because of the struggle that was being carried out, you may not actually need much in the way of mechanical obstruction just to tip the balance even further in the wrong direction for the deceased. So, again, it's difficult to say unequivocally no, but I think, on balance, there hasn't been very much of that. I think the other factors have been far more relevant in the mechanism for his death.

Respiratory/Cardiac Arrest

194. I have been referred to paragraph 8, page 25 of my report in which I state:

"In very broad terms, I think the deceased collapsed and, of course, subsequently died because he developed some form of cardiac arrhythmia, and I am sure that this was as a consequence of several separate but interrelated factors."

195. I am asked if it is of any significance whether the deceased went into respiratory arrest or cardiac arrest first. I note that there is a lack of clarity as

to whether the deceased went into respiratory arrest at Hayfield Road and whether a trace of a pulse was found. I think this is approaching the limit of my expertise. What's gone on prior to respiratory and cardiac arrest is something which I don't have any dealings with or a great deal of understanding about. My view is not an expert view. I do think you've got to be a bit wary because lay people sometimes think they can feel a pulse when there isn't one because they're feeling their own. On other occasions, they can't feel a pulse because they're trying to look for a pulse in the wrong place. In the end, I'm not sure it makes a great deal of difference, because either can precede the other, but I don't think that it's going to assist in clarifying aspects of this man's death, but that's my personal view and I defer to the views of others.

196. I am asked whether, if Mr Bayoh was in respiratory arrest first, it would make the possibility of positional asphyxia more likely. I don't think that conclusion can be drawn at all. I think that's a *non sequitur* in my view because I think that if positional asphyxia were a feature, I think he's going to go into cardiac arrhythmias, which nobody seems to have mentioned. That may then result in either conventional cardiac arrest, i.e., the heart stops completely, as opposed to arrhythmias where the heart isn't functioning properly and may as well effectively be in cardiac arrest because it's not pumping anything around – or certainly by no means enough – and that will cause you to go into respiratory arrest as well.

197. Then, of course, you've also got the potential – and I put it no stronger than that because, again, I'm outwith my field of expertise – direct toxic effects of the drugs that he's taken and what effect they may have on respiration, and also the other problems affecting the deceased, like acidosis and hypoxia. As Dr Soilleux says, if you've then got some sickling taking place, which is going to affect all organs and tissues to a greater or lesser extent,

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you may get some sickling affecting relevant parts of the brain that are going to affect respiration and/or cardiac activity. So, whatever the sequence, it may be influenced by a whole host of factors, individual or in combination, and therefore, I can't see that it's going to help. I'm more than happy to defer to others on this point.

198. I have been referred to paragraph 9, page 25 of my report, in which I state:

"The drugs identified in the deceased's body are to a greater or lesser extent cardiotoxic, and under different circumstances, it is, I think, widely accepted that each could cause death, either individually or in combination with one or more of the others. In this case, therefore, I think it reasonable to conclude that they could (probably would: possibly must) have increased the deceased's susceptibility to developing an arrhythmia when other factors were introduced."

199. I have been asked how quickly the drugs, alone or in combination with the restraint, having caused cardiac arrhythmia, would stop someone breathing. I don't know the answer to that. The only comment I would make, and that is you've got to remember sometimes that these arrhythmias are intermittent. They can occur and then you go back to the normal cardiac rhythm, and then they occur again. So, the answer is I genuinely don't know.

200. I'm asked if at post-mortem, whether you can see any signs of arrhythmia. I confirm that you cannot.

201. I have been referred to paragraph 11, page 26 of my report in which I state:

"I think that the struggle, in its totality, is very important in this case because, per se, it must have contributed substantially to the various metabolic

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disturbances associated with the psychological and physiological stresses just referred to."

202. I have been asked how the psychological and physiological stresses that I refer to, contributed to metabolic disturbance. These stresses increase the secretion of adrenaline and noradrenaline. Both increase the heart rate and also the likelihood of developing a cardiac arrhythmia, particularly if there is a pre-existing susceptibility.

203. I think it was Dr Steven Karch, who mentioned serotonin syndrome, and hyperadrenergic syndrome in his report. Both of these can be caused by the acute psychiatric disturbance that has taken place. So, the psychology, and I use "the psychology" in the context of the acute psychiatric disturbance that the deceased had, they in themselves are going to create these sorts of problems as described by Dr.Karch. Then you've got the physiological problems, which the psychiatric state could also produce like the acidosis and the hypothermia and the hypoxia and the dehydration, and also the problems that the drugs themselves can create because they can have the same effect. I think Dr Bleetman referred to this as a "toxic brew". You've got all these things coming in from the side, all of which are creating these stresses, which are going to have an adverse effect on the heart and to develop the arrhythmias. So, I think, again, it's multifactorial, all related to the ingestion of the drugs and the development of the acute psychotic state.

204. I've been referred to paragraph 12, page 26 of my report in which I state:

"Under these circumstances, therefore, if it is accepted that the struggle, per se, contributed significantly to this man's death, then it must mean that the act of restraint, whether necessary or not and whether performed appropriately or not, also contributed significantly to his death, if only because it was a significant, albeit indirect, contributor to the total stress burden affecting the deceased in general, and his heart in particular."

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205. I mean that, in my opinion, the vigorous physical exercise produced by the restraint contributed much more than *de minimis* to this man's death. In her first report, Dr. Soilleux refers to his "lifting his body off the ground in what is described as a 'bench press', lifting up the weight of at least one police officer, who is described as being 25 stone". I strongly agree with her that "this would have put considerable strain on the heart, as it is likely it would have increased the blood pressure and heart rate" and that it would also "very significantly increase the risk of a [cardiac] rhythm abnormality developing". In other words, these effects of the struggling would have added to all the other factors previously considered as contributing to the already existing "toxic brew".

206. I think they're all adding together and, if that is so, then the struggle itself must be a significant contributing factor in the same way that all these other things are as well. I come back to what I've said many times, and that is: if we're looking to try to determine why this man died when he did, then I think that that is also a pointer towards the significant contribution made by the struggle. If you accept that, then you have to accept that the restraint, *per se*, has also contributed to death because he wouldn't have struggled had he not been restrained.

207. That is to pass no comment, as I've said here, on the necessity or otherwise of that restraint or indeed the adequacy of what was performed or not. It is the fact that he was restrained which caused him to struggle and, therefore, has been a factor in contributing to the toxic brew and to causing him to die when he did. That's what I'm trying to get through in that particular paragraph.

208. I'm referred to paragraph 13, page 26 of my report, in which I state:

"From a purely pathological perspective, I cannot determine whether the deceased's position during the restraint – lying prone or on his side with one

or more police officers lying on his torso and/or otherwise compressing his chest – may have contributed to his death. I realise that there was a relatively small number of petechial and some slightly larger haemorrhages on the conjunctivae of all four eyelids and on both eye globes, but I am impressed partly by the low numbers present and partly by the absence of such haemorrhages elsewhere on the deceased's face. Given these findings, both positive and negative, I certainly do not think that they must reflect some form of asphyxia. They could be an entirely non-specific finding, in association with cardiac arrhythmia, and they could even have been a consequence of the intense resuscitation which was carried out. In this context, I am also impressed by the relatively short time interval between the onset of the restraint and the deceased's collapse.

My conclusion, therefore, is whilst it is never going to be possible to exclude completely the possibility that this aspect of the restraint may have made a minimal contribution to collapse and death (being, perhaps, 'the straw that broke the camel's back', I think it very unlikely, and I do so particularly in light of the literature quoted extensively in his report by Dr Karch."

209. I am asked what aspect of restraint I am referring to when I state that "*it is never going to be possible to exclude completely the possibility that this aspect of the restraint may have made a minimal contribution to collapse and death".* Here I am referring to either a positional or mechanical component of asphyxia.

210. I am asked whether I have reviewed the literature referenced in Dr Steven Karch's report. No, I've not read it. I'm not desperately familiar with the recent literature in that context. When I refer to "recent literature" I mean a combination of the literature since my report has been drafted and the literature referred to by Dr Karch in his report. . Dr Karch has been involved

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in that side of things for a while and so therefore he will be far more familiar with the literature than I am, and I accept that.

211. I have been asked whether I can comment on what effect that the positions of the police officers would have had on Mr Bayoh's ability to breathe or correct the oxygen deficit that he had. The only comment that I would make, and that is that I'm impressed with the variability of the evidence of the relative positions of the police officers and Mr Bayoh during the restraint. I don't mean that in a cynical or in any way critical context, but it seems to me that it reinforces, at least to some extent, what I've been saying about the variability of the positions in which the deceased was and the relative positions with the police officers. It also comes back to the important factor of time, and I'm not convinced that there's anything there which persuades me that any of the physical aspects of the restraint, as opposed to the other components that we've been talking about, has made a great deal of difference.

212. My conclusion, therefore, is that whilst it's never going to be possible to exclude completely the possibility that this aspect of the restraint may have made a minimal contribution to his death, I think that's always going to be the case, but on the basis of everything that I've heard, including what you've just read, I happen to think that it's unlikely. I think that the restraint has contributed but not as a consequence of generating significant hypoxia in itself but by virtue of the fact that it has encouraged, understandably so perhaps, the deceased to struggle.

213. As a non-expert in this field, I would point out that there must be numerous instances of individuals being restrained by police officers and others on a daily basis, but we don't see the fatalities anywhere near as frequently as the incidents take place. So, I think you have to bear that in

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mind as well. The sort of restraint that they appear to have carried out, I suspect, is something that would not have been atypical in other circumstances, and yet we don't have the fatality. So if it has contributed, it may have made a minimal contribution, which I readily accept is the case, but on the basis of what I've heard I don't think it's going to be significantly more than that, or at least that's my interpretation of what I hear and what I see based on the pathological findings and based on everything else that I've heard about the case.

214. I have been asked if I am aware of the fact of a person being of muscular build being of increased risk of restraint asphyxia. I have been referred to page 2 of Dr John Parkes's report[11] dated 22nd January 2016 in which he states:

"Sheku Bayoh was a muscular man, which has been associated with restraint death. Heavily muscled persons may be capable of increased resistance, thereby prolonging restraint, and the large muscle mass may increase ventilatory demand, which would increase the risk of asphyxia if his ability to breathe was limited by restraint."

215. Well, certainly in the sense of being, without being disparaging, on the big side, but I think the same argument applies to the obese as applies to the well-muscled, but I come back to what we were saying earlier on about the timescale. I think that under those circumstances, had the restraint gone on for two, three, four times the length that we know it did, then I think some factors like that, and others will come into play, but I'm not convinced that that is going to be of much relevance with such a short timescale. That's why on several occasions I have commented upon the timescale because I do think that it is important when you're looking at things like that. He can't have been restrained for very long, whatever the mechanism of the restraint, and I

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wouldn't have thought that there would have been sufficient time for there to have been a significant problem created. Although, I come back to what I have said before: it's never going to be possible to exclude completely the possibility that it may have made a minimal contribution. I can't deny that, but I don't think that it's made more of a contribution than that. Had it gone on for longer, then I think we would have been having a different conversation.

216. In my report, at paragraph 14, page 26 I explained that I do not think that the contents of the CS and PAVA sprays used by the police officers, contributed significantly to the deceased's death. I have been advised that a chemical pathologist is looking into the role that these sprays played in the deceased's death. I would be happy to defer to their findings. Although, I would be interested in any arguments that they put forward in support of either of those sprays contributing more than *de minimis* to Mr Bayoh's death.

217. I have been asked whether the physical activity of the deceased prior to his contact with the police – having a fight, walking briskly for around 30 minutes – would in and of itself cause a cardiac arrest. we know that people who have taken these drugs die suddenly because of the toxic effects of the drugs that are in their system; and so therefore, it has to be, I think, a possibility.. Therefore, the answer may be yes, although we do know in this case that it didn't. In other words, there will be people who take drugs like this in these sorts of quantities and who've taken them before, who die as a consequence of the toxicity produced by the drugs. Almost certainly a cardiac toxicity, but they die from that without any other features and certainly without being restrained and without struggling and so on. We know that as a fact. Therefore, there is always, in theory, the possibility that anybody who takes these drugs, and particularly if they've taken them before, may die as a consequence of the drug toxicity. I think the answer to that question has to be, "Yes, that must be a possibility."

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Professor Eddleston

218. I have been referred to pages 4 and 5 of my supplementary report[12] prepared for COPFS, dated 13th August 2017, in which I comment on the report of Professor Michael Eddleston[13] dated 2nd June 2017:

> *"Although Prof Eddleston's area of expertise is significantly different from mine, I found his report very interesting. Overall, I do not think it affects my previously stated thoughts either about the deceased's condition prior to and at the time of his encounter with the police or about the role of drugs which he had taken in his subsequent death."*

219. I am asked whether there was anything in Professor Eddleston's report that made any difference to the views that I had expressed up until that point. From what I recall, there seem to be things in his report which support my thoughts and my interpretations, and certainly nothing which dissuades me from what I've already thought and I've already written, but I think he's actually supportive of my views, rather than is being neutral.

Restraint position of Mr Bayoh

220. I have been referred to a body positions document[14] dated 13 March 2018. My attention has been drawn to the fact that the document doesn't appear to include a representation of Sheku Bayoh in the prone position. I have been asked whether I have any comment on this omission. I can't

[12] COPFS-00034
[13] COPFS-00038
[14] COPFS-00061

honestly say that I do. I'm not sure that I recall that degree of detail as far as the body position documents are concerned.

221. I am asked, if it was accepted by the Chair that Mr Bayoh was prone throughout the restraint, whether this would change my conclusions at all in relation to the restraint. No, I don't think it does. I think if we're going to be slightly pedantic and separate out positional asphyxia from mechanical asphyxia, then I think that the positions that were described make positional asphyxia, i.e., the actual position that he was in, less important than the potential from mechanical asphyxia, i.e., whether he's lying prone or supine and somebody's lying on top of him. I think that had the whole restraint incident in its entirety, gone on significantly longer, then these factors may have been much more important than I think they are. But I think the short timescale argues against its being of great significance, though I'm never going to be able to say it hasn't contributed at all, because it just may have done. But in the overall scheme of things, I don't think that it's contributed very much at all.

222. I am asked whether I see any distinction between a person being fully prone or partially prone in terms of its effects with restraint. I can't say that I do, no. If you're prone then it means that you are at risk of having your respiration compromised if you get a considerable amount of force on your back squeezing you against the ground, and I think that applies whether you're fully prone or partially prone, but I think that's quite different from actually lying on your side. But I don't feel strongly one way or the other and I defer to others who may have more knowledge about restraint in all aspects.

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223. I have been referred to page 2 of my second supplementary report[15] dated 21 May 2018 in which I undertook a review of statements of the paramedics and doctors who attended the deceased:

"It is, I think, very important that I emphasize that I have no expertise in interpretation of cardiac arrhythmias. My view is that the rhythms identified and documented, together with the inexorable cardiac deterioration despite all advanced resuscitation procedures, reflect an irreversibly damaged heart which was never going to recover. There is nothing here which causes me to revise or in any way to alter my previously stated opinions and conclusions in this case."

224. I am asked if I have any further comments to add to this. I do not have anything further to add to this.

225. I am asked whether I consider that sickle cell trait as relevant to cause of death. I do consider it to be relevant, especially when considering why the deceased died when he did. I consider that the cause of death to be as follows:

Sudden death in a man with sickle cell trait intoxicated by MDMA (ecstasy) and alpha-PVP in association with struggling against restraint.

226. To clarify, I'm not convinced that the restraint per se has contributed significantly to Mr Bayoh's death, but I think the struggling which that restraint caused has been an important factor in his death, causing him to die when he did.

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227. I believe the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Date ..... May 8, 2023 | 10:11 AM BST

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