



**SHEKU
BAYOH
INQUIRY**

The Sheku Bayoh Public Inquiry

Witness Statement

Professor David Rees

Taken by [REDACTED]

Via MS Teams

on Thursday, 3 November 2022

Witness Details

1. My name is David Rees. My contact details are known to the Inquiry.
2. I am Professor and Honorary Consultant in Haematology, King's College Hospital, London.

Professional Background and Qualifications

3. I am paediatric haematologist with an interest in sickle cell disease, thalassaemia, porphyria and other inherited red cell disorders. I have prepared

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medicolegal reports on sickle cell disease and other red cell disorders, including thalassaemia and porphyria.


4. I have a MA (Hons) in Medical Sciences and Psychology and M.B.,B.S. (Lond). Thereafter I have the following: MRCP (Member of the Royal Colleges of Physicians - UK) in 1990, FRCP (UK) in 2004, MRCPATH (Member of the Royal College of Pathologists) in 1998, FRCPATH in 2005, and FRCPCH (Fellow of the Royal College of Paediatrics and Child Health) in 2013.

Letter of Instruction

5. I have had sight of an undated letter of instruction (COPFS-04293(a)). This is addressed to me albeit no address appears on the letter. I don't recognise this letter and I have no memory of receiving a letter like this. I have no recollection of being provided with any documents for consideration. I have been asked whether I was given any histology slides for review. No, I definitely was not. This is not in my area of expertise.

Consultation note dated 8 May 2018

6. I have been given sight of a consultation note dated 8 May 2018. This appears at page 3 and 4 of the Additional materials Index 3 Draft letter and consultation note of 8.05.18 (COPFS-05625). It notes the consultation with me took place in London. I recall the meeting and have a note in my calendar at four o'clock on that date that says Scottish lawyers. I think that must be it.
7. I have been asked whether I have any recollection of how long the meeting lasted. The entry in my calendar is for half an hour. This is consistent with my memory of the meeting lasting about 30 minutes. Again, I think they didn't come specifically to see me. I think they were in London to talk to someone else about the case. They were keen to see me while they were in London. I

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agreed to see them, to try and be helpful, but not in any official capacity. I did not get paid for seeing them.

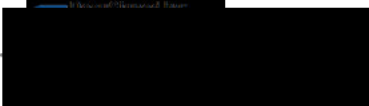
8. I am asked what information I was given at the consultation. It is difficult to remember – it was a number of years ago now. I remember them telling me that Mr Bayoh had taken drugs, and that he was running around. The police were called and he was hard to control, that sort of thing. I remember the drugs thing certainly.

9. I have been referred to the following paragraph that seems to outline some of the background information I was given, which is on page 3 of the document: *“In respect of the scenario in this case where there had been a fight, running around, dehydration, attacking the police, struggling and has taken steroids”*. I remember being given this sort of information, but cannot specifically remember the information about steroids, although it is certainly possible that I was told that.

10. I’ve not seen this consultation note before. A copy wasn’t sent to me following the consultation and I haven’t approved it. The content is not factually wrong. However, the wording is slightly inaccurate. If a copy had been forwarded to me for approval I would have corrected some of the wording.

11. I am asked about the following paragraph: *“The sickle cell trait has recently been linked with medical conditions, including sudden death, and there are two sources for this: the American military and American elite sports. The suggestion is that a carrier is more likely to suffer death if engaged in extreme exertion, but this is by no means certain.*

12. I have been asked whether I accept that this paragraph is accurate. Yes, I’m happy to stand by that statement. I have been asked whether, in the intervening years, there have been developments in medical research or understanding of these matters that would cause me to revise my opinion. I

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don't think there's been any major changes. I think the link between sickle cell trait and sudden death has been a bit more strongly established and characterised. When people undergo extreme exertion, for example, in military training, when you run in hot weather at high altitude for a long time, then there's a risk of sudden death in anyone, and that risk is increased if you're a sickle cell carrier.

13. The note continues *“The suggestion is that a carrier is more likely to suffer death if engaged in extreme exertion but this is not by any means certain. People have done more observations and there is a range of opinions. There is a link with rhabdomyolysis which relates to break down of the muscles. I consider there is no link with death.”* Rhabdomyolysis is a breakdown of skeletal muscle due to direct or indirect muscle injury. If not treated immediately, it can lead to kidney damage. I am asked whether I was this condition was a relevant one to this case. No, I'm not aware of that. I don't know quite why I would've said that, unless they said to me that that had occurred. While it is true, but I'm not aware that it's relevant in this case.

14. I have been asked to clarify the statement *“I consider there is no link with death”*. I doubt that these are the actual words I said, in that I don't use phrase 'I consider' and would not have been that definitive. I don't recall that the rhabdomyolysis was a big part of the conversation, and that condition is linked to death. So if he had rhabdomyolysis, which I don't think he did, then that would be relevant, but I think that statement must mean the general thing, that it's difficult to tie him being a sickle carrier into his death, I think.

15. I am asked whether I had formed an opinion that sickle cell trait had no link with Sheku Bayoh's death. I think I thought it was unlikely to be linked to his death. However, it wasn't a hugely considered opinion. This was a casual discussion in my office about a case that I wasn't going to provide a report on. Based on the information such as I had at that time. I still think that, but it

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seems unlikely that Sheku Bayoh being a sickle cell carrier was a big factor in his death, and I presume that's what that statement must be about.


16. The context of my comments recorded here are a conversation. I never agreed to give a formal, medico-legal opinion. The people I met with on this occasion were quite keen to come and speak to me. They were coming to London anyway, and I said I was happy to speak to them. My understanding was that it was a casual conversation, and I was not aware that there were notes taken about it. It never occurred to me that this might be used in a public inquiry. I had a small amount of information when I made these remarks. Having said that, I still think it's true based on what I've read. As a generic question, it's fairly easy to answer, without knowing the specific details of Mr Bayoh.

17. I have been referred to the following paragraphs from the note:

"In relation to the observed sickling in this case and whether it is ante or post mortem. Sickling is relevant if a person is exposed to very low levels of oxygen eg if a tourniquet is used. If one makes the oxygen level low enough there will be sickling and when a person has died then inevitably the oxygen level is low.

Looking to the cycle described at para 63 of Soilleux one could speculate that the cycle described is significant. One couldn't prove that it didn't happen but there is no evidence that it is true."

18. It is suggested to me that this paragraph suggests that I am making reference to the report of Dr Elizabeth Soilleux (COPFS-00031). This report was provided to me in advance of giving this statement. I'm aware that her report is around 49 pages long. I definitely didn't read the full report during the consultation. However, the wording of the paragraph suggests that some aspects of the report were discussed with me. I have no recollection of

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seeing the report during the consultation but I'm happy to believe that it happened. I can only assume that they may have shown me the report and read out specific sections or provided specific pages for me to read.

19. I have been referred to the following paragraph of the consultation note: *"It is possible that the deceased may have had a rarer form of the disease and he should be tested for S/Beta Thalassaemia as this would be a factor and could trigger sickling."* I am asked to comment on this. I think that was a suggestion. Sometimes you do see people who have been diagnosed as sickle cell carriers and they have lots of unexpected symptoms; in a very small number of those cases, DNA testing shows that they have in fact got a rare form of sickle cell disease, rather than being a carrier. In the circumstances, I was suggesting that they made sure he was a sickle cell carrier by doing DNA analysis would be helpful, at least in the medico-legal context of understanding what happened. If he did turn out to have sickle cell disease rather than being a sickle cell carrier then that makes him more fragile generally and would make the degree of force required to kill him less than if he was a sickle cell carrier.

20. There is about 15 different types of sickle cell disease, although some of them are very rare, and they're quite hard to pick up unless you do specific testing. Related to this, I have been shown I have been shown the results of DNA analysis for sickle cell disease and thalassaemia dated 31.05.18 (COPFS-03590(a)). The test result is convincing that Mr Bayoh is a sickle cell carrier. This document mentioned that a specific test called MLPA failed. For technical and statistical reasons, it is very unlikely that MLPA would have detected any DNA changes, such as very large deletions, which would change the conclusion that Mr Bayoh was a sickle cell carrier.


21. I have been asked about a reference within the consultation note of our meeting on 8 May to seeing consultation notes with Dr Soilleux. I am referred to the following paragraph *"Sickling of cells only occurs where a person is a*

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carrier or has sickle cell disease. In respect of the note I am shown summarising the consultation with Liz Soilleux I cannot sa[y] whether the sickling noted occurred ante or post mortem.” I am asked if I have any recollection of seeing a notes of a consultation with Dr Elizabeth Soilleux. No. The mention of it is sort of creating a memory. I think they probably had the documents with them that they then showed me. I'm sure I wasn't sent anything beforehand. I have searched through everything, including emails, and I haven't got any records of any sort of proper formal reports. They may well have shown me something during the interview that I commented on. I'm not sure, but I don't disagree. I'm happy to believe they did.

22. I have been shown the second report of Dr Elizabeth Soilleux (COPFS-00031) and asked to comment on the sickle cells trait aspects of her revised view of likely cause of death at pages 10 and 11. I disagree with her conclusions regarding sickle cell trait here. Although I am not a histopathologist, I think I understand the pathology of sickle cell disease and sickle cell trait. Sickle cell trait is associated with sudden death in extreme exertion and I don't know that there is any good evidence that death is always or often related to cardiac problems. I'm pretty sure there's no direct evidence, other than all death is cardiac in the end. I don't think there's any known link with alcohol, but I think she may be saying that alcohol causes dehydration, and dehydration might be a factor. I think for sickling to be the primary cause of death very low oxygen levels would have to be present, and the degree of restraint necessary to cause this degree of hypoxia is likely to cause death even without sickle cell trait.

23. I think the question is whether the sickle cells Dr Soilleux saw occurred before or after death, but seeing sickle cells is not surprising given that he is known to carry sickle. However, I don't think you can say, "I think that they definitely occurred before death or that they contributed to the death." In the report, there is a supposition that he was dehydrated and exerting and restrained, and that makes him so hypoxic that his red cells sickle. I don't personally think

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that's very plausible. I think if he's so hypoxic to cause that then he would have died anyway.

24. I am referred to specifically to the following paragraph at pages 9 and 10:

“The drugs taken (methylenedioxymethamphetamine (MDMA) and alpha-pyrrolidinovalerophenone (alpha-PVP)) and the exertion would both have substantially increased the heart rate and the strength of the heart's pumping (known in medical terms as the stroke volume). That in turn would have increased the heart's muscle requirements for blood due to increased demand for delivery of oxygen. This increased demand would have been difficult to meet because of red blood cell sickling, due to the acidic, highly concentrated (dehydrated) blood. Locally, in the small blood vessels (e.g., capillaries), which supply the heart muscle, one can imagine that the level of oxygen went down even further than elsewhere, due to the high oxygen requirements of the heart muscle, while the levels of lactic acid rose due to anaerobic respiration occurring, and thus the overall degree of acidosis in the heart vasculature rose, all set on a background of dehydration. Thus the very small blood vessels in the heart muscle are the site at which the sickling is likely to have been greatest. This would have prevented sufficient oxygen delivery to the heart muscle and caused rapid collapse and death.”

25. I am asked to comment on this. I think it's all speculation really. I personally think that's unlikely. I don't think she can say with certainty that it's true. That is a sort of story that on one level makes sense but, I think to get sickle cells forming in people who are sickle cell carriers like Mr Bayoh, the oxygen levels have to be very, very low. It happens in people who are having an anaesthetic that goes wrong. They put the tube down the wrong hole, and they get so hypoxic that they die. So I think the degree of hypoxia necessary to cause sickling would be so great that that would kill anyone, whether you were a sickle cell carrier or not.

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26. I think there's a possibility that the element of sickle that may have contributed a small amount. If the question is, "If he hadn't had sickle cell trait, would he have survived this episode?" I think my opinion would be probably not; sickle cell maybe caused some post-mortem changes, and maybe was a factor in some of the problems, but not a major factor. Millions of people in the world have sickle cell trait, and dying suddenly is very, very unusual. It's an incredibly common condition. There are maybe 100,000 people in the UK who've got it, and people just don't drop dead because they get slightly hypoxic or they're a bit drunk or they've taken drugs etc.

27. Dr Soilleux provides revised cause of death at the bottom of page 10 that "*In view of the sickle cell trait and visible red blood cell sickling in some vessels, I believe that the causes of death would be best given as: 1a Sudden Cardiac Death, 1b Sickle cell trait, use of recreational mugs, struggle against restraint.*" I am asked to comment on this. I am not a forensic pathologist. However, based on my experience of sickle cell trait, I think sickle cell trait is probably a factor here, but a very minor factor. Possibly there were circumstances that made Mr Bayoh so hypoxic, by restraint or otherwise, that he had some sickling, and that sickling then contributed to some of the pathology seen when he died. So I think that's probably true. I think, that's just an opinion again, the same as Dr Soilleux was giving an opinion. I'm aware that Dr Soilleux is a consultant pathologist specialising in autopsy pathology, and particularly cardiac pathology and haematopathology. However, I'm unclear as to her knowledge about sickle cells. I've never heard of her in that context.

Report of Professor Lucas

28. I have been referred to Professor Sebastian Lucas's report (COPFS-00084). I accept that he is a recognised expert in this area. Sebastian Lucas is the person who does all the post-mortems on people with sickle cell disease. I am referred to page 2 and 3 of his report:

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“There is no doubt that the vast majority of persons with HbAS who undergo life’s daily stresses do not suffer any such syndrome. The critical aspects are therefore the level of stress and accompanying elements such as dehydration, drugs, alcohol intake, muscle activity and body temperature.

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.”

29. Additionally at page 3, he also suggests a cause of death as *“1(a), sudden cardio-pulmonary failure; 1(b), sickle cell trait, recreational drug use, struggle against restraint.”*

30. I am asked to comment on this. Professor Lucas certainly is an expert in this area. He comments on seeing much more sickle cells in the post-mortem sample than you would expect to see in someone else who is a sickle cell carrier who had died; I think that is a relevant observation, and suggested that maybe some of the sickling, the damage to the red cells occurred before he died as a result of the combination of the restraint and the drugs and dehydration. I still think it’s unlikely to be a major factor and that if the argument is, if he didn’t have sickle cell trait, would he have survived? I think that’s very difficult to answer, but it seems to me unlikely.

31. I think the specific comment he makes about the amount of sickling is probably quite important in terms of interpreting it, but I don’t think anyone can

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prove it. It's not a definitive thing, and I think we saying the same thing. I would say sickle cell trait is part of it, but I would say it's not a major part, and probably not a critical part.

32. While I do not think that Sheku Bayoh died as a consequence of being a carrier of sickle cell trait. I do consider it possible that being Sheku Bayoh being a sickle carrier is more than a de minimis feature and may have played a small part in his death.

33. 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.

April 12, 2023 | 2:28 PM BST

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