1 Tuesday, 9 May 023
2 (10.00 am)
3 (Proceedings delayed)
4 (10.03 am)
5 LORD BRACADALE: Good morning and welcome to this hearing in
6 the Sheku Bayoh Public Inquiry.
7 This hearing begins a few days after the 8th
8 anniversary of the death of Sheku Bayoh, which was
9 marked by his family and friends. I know that
10 the anniversary of the death is a difficult time for
11 them. In this hearing the Inquiry will hear evidence
12 relating to the cause of death of Sheku Bayoh. That
13 will include evidence of the post mortem examination
14 which is a term used in Scotland for an autopsy.
15 Inevitably by its nature some of that evidence may be
16 distressing, but I am sure that everyone will understand
17 that it is important evidence which requires to be
18 examined thoroughly by the Inquiry.
19 Could we now have the witness, please.
20 DR KERRYANNE SHEARER (called)
21 LORD BRACADALE: Good morning Dr Shearer, you are going to
22 be asked some questions by Ms Grahame whom you have met.
23 Before that would you say the words of the affirmation
24 after me please.
25

1 DR KERRYANNE SHEARER (affirmed)

2 LORD BRACADALE: Ms Grahame.

3 Questions from MS GRAHAME

4 MS GRAHAME: Good morning Dr Shearer.

5 A. Good morning.

6 Q. You are Kerryanne Shearer?

7 A. I am, yes.

8 Q. What age are you?

9 A. I am 46.

10 Q. You are a forensic pathologist?

11 A. I am.

12 Q. Before we go into the details of your work and your

13 involvement with the matters we are considering today,

14 could I explain to you that there is a blue folder in

15 front of you on the desk. Feel free to open it up.

16 That folder is for your use during your evidence. And

17 you must feel free to use it or look at it, or take time

18 to consider it as you wish.

19 You will see there is a number of documents in it,

20 I'll take you through those in a moment, and you have

21 been given hard copies of those but if there is anything

22 missing from that folder you would like to see or you

23 wish to refer to, please tell me, and we will either

24 arrange to get it as soon as we can or we can maybe have

25 it brought up on the screen.

1 A. Thank you.
2 Q. In addition, you will see the screen in front of you.
3 Sometimes when I am referring to documents I'll ask that
4 they be brought up on the screen but you will maybe only
5 see a paragraph or two of an individual document.
6 You'll have the hard copy so if there are other things
7 on a different page, for example, you can look at those
8 in the hard copy. And we can bring anything up on the
9 screen that you would like.
10 A. Okay, thank you.
11 Q. It does mean that other people in the hearing room will
12 be able to see what is on the screen as well.
13 A. Okay.
14 Q. So let's just go through some of those documents to see
15 where we are. I think the first document in your blue
16 folder is probably your Inquiry statement, and the
17 number for that is SBPI 00304. In a moment you will see
18 that coming up on the screen. So there we are. You
19 will see the front page which is your Inquiry statement
20 which was taken by the Inquiry on 21 October last year
21 and via Teams on 13 January this year, so it was taken
22 over two sessions.
23 A. Yes.
24 Q. It is 60 pages long, on the final page we will see it
25 was dated 19 April of this year. Now, on the screen

1 version your signature has been redacted so no one can
2 see that but on your -- I don't know if your copy is
3 a redacted version also ... no. So you can probably see
4 that you have signed that on every page; is that
5 correct?
6 A. Yes, it is.
7 Q. If we could also look at the final paragraph which is
8 183. This reads:
9 "I believe the facts stated in this witness
10 statement are true. I understand that this statement
11 may form part of the evidence before the Inquiry and be
12 published on the Inquiry's website."
13 A. Yes.
14 Q. You understood that when you signed?
15 A. I did, yes.
16 Q. Lovely. Then, moving on from your Inquiry statement,
17 because that will be available to the Chair to consider
18 in the future, but we may make some references to
19 paragraphs as we go through your evidence. In addition,
20 can we look at your initial post mortem report. That
21 should be PIRC 01444. If you just move down on to the
22 first page of that, do we see this was issued on
23 6 May 2015? Do you see that at the top of the screen?
24 A. Yes.
25 Q. But you have the hard copy. And it's in relation to

1 Mr Bayoh and you give his details. He was pronounced
2 dead at 09.04 on 3 May 2015?
3 A. Yes.
4 Q. If we go down the page, do we see -- we will come on to
5 the cause of death and suchlike in due course, but we
6 see the date of the autopsy was 4 May, so that was the
7 day after he died?
8 A. Yes.
9 Q. And the examining doctors are listed as yourself,
10 Dr Kerryanne Shearer and a colleague of yours. That was
11 Dr Ralph Bouhaidar?
12 A. Bouhaidar.
13 Q. Tell us, who was Dr Ralph Bouhaidar?
14 A. He is the second pathologist, all of these types of
15 cases have to be done for a corroboration point of view
16 with two forensic pathologists, one leading the case
17 which was myself, and the second attending the case and
18 corroborating everything that I do in the report.
19 Q. Does that relate to the criminal justice requirement for
20 corroboration --
21 A. Yes.
22 Q. -- which is evidence from two potential sources?
23 A. Exactly, yes.
24 Q. So in theory both of you could give evidence about the
25 autopsy carried out, if there was to be criminal

1 proceedings?
2 A. Absolutely, yes.
3 Q. So on this occasion in relation to Mr Bayoh, the two
4 doctors were yourself and Dr -- I am not going to
5 remember how to pronounce it.
6 A. Bouhaidar.
7 Q. Thank you. I'm sorry. Let's move on to the next
8 document. We will be coming back to this in a moment to
9 look through the detail but let's look through the final
10 post mortem report, which should be PIRC 01445. This is
11 headed up, you will see on the screen, "Final report"?
12 A. Yes.
13 Q. Issued on 18 June 2015?
14 A. Yes.
15 Q. So a number of weeks after the autopsy was carried out?
16 A. Yes.
17 Q. It is dated -- sorry, I have just said, 18 June. If we
18 can move down the page slightly, again we will come on
19 to the cause of death in a moment, if we can move down,
20 please. Again, the examining doctors are listed as
21 yourself and Dr Bouhaidar.
22 A. Yes.
23 Q. Then can we look at -- that was the final post mortem
24 report. Can we look at the supplementary post mortem
25 report. This is COPFS 05138. This is a supplementary

1 report and this is 5 November 2015. Again, we will come
2 on to the details of this later but it is still by both
3 yourself and your colleague?
4 A. It is, yes.
5 Q. Then we will look at a further supplementary report,
6 COPFS 00040. This is dated 3 October 2017. So this is
7 two years after he passed away?
8 A. Yes.
9 Q. Again, both yourself and Dr Bouhaidar --
10 A. Yes.
11 Q. -- were involved in that. Can I start first of all --
12 before we go into the details of these various reports,
13 can I ask you to help the Chair understand a little bit
14 about your own qualifications and experience --
15 A. Yes.
16 Q. -- before we hear your actual evidence about what you
17 were doing. So let's look at your CV. WIT 00001. Is
18 this an up-to-date CV that you have provided the Inquiry
19 with which will allow the Chair to consider that in some
20 detail --
21 A. It is, yes.
22 Q. -- in the future? If we can just scroll through we will
23 see just briefly it is from September last year, so it's
24 reasonably up-to-date. Has anything changed
25 since September last year, would you say?

1 A. I will have done more courses, more continued
2 professional development but everything should basically
3 be the same.
4 Q. So is this a reasonably up-to-date summary of your
5 professional experience?
6 A. Yes.
7 Q. Thank you. It says that your current employment is as
8 a consultant in forensic pathology. I am interested in
9 what is the difference between a pathologist and
10 a forensic pathologist?
11 A. A histopathologist, or a basic pathologist, are the
12 medical doctors who are involved in looking at things
13 like surgical resection, so if you went to hospital and
14 had your gall bladder taken out, they would see that
15 specimen and they would have that specimen processed to
16 look at slides down the microscope and would give
17 a report about that specimen to give the reason why it
18 was required to be removed in the first place. They
19 look at various other specialties, kind of soft tissue
20 specialties, other tumours, the gastrointestinal system
21 will all be covered by histopathologists.
22 As forensic pathologists we have to have a basic
23 grounding in that in our initial training, but forensic
24 pathologists specifically look at how to work out how
25 someone has died through the tool of the autopsy or the

1 post mortem examination. So we are trained to look at
2 slides down the microscope but the main bulk of our
3 training is to discover what causes of death are, for
4 people in all different types of situations.
5 Q. So you have experience in carrying out autopsies?
6 A. Yes.
7 Q. Or post mortems?
8 A. Yes.
9 Q. And working out what the cause of death is. Is that
10 always for criminal -- possibly criminal case?
11 A. No, we also undertake post mortems for natural and kind
12 of non-natural deaths. So deaths in the community,
13 for example, if someone dies and the general
14 practitioner doesn't know why they have died but they
15 have died from a natural reason, a death certificate has
16 to be issued but if the general practitioner is not
17 comfortable issuing a death certificate because they are
18 not quite sure why they have died, that case will be
19 referred to the Procurator Fiscal and they will instruct
20 us to undertake a post mortem so we can give it
21 an accurate cause of death.
22 We are also involved in non-natural deaths, so
23 things like suicide, so anyone who has taken their own
24 life will automatically have a post mortem, a forensic
25 post mortem examination. So the vast majority of our

1 workload are non-criminal cases, be it natural or be it
2 non-natural causes of death.
3 Q. You deal with all those different types of deaths?
4 A. I do, yes.
5 Q. Is part of your work making sure that what might look
6 like a natural death there is nothing suspicious or no
7 interference from a third party that has brought that
8 about?
9 A. Absolutely, and we will have reasonable number of cases
10 that -- where it's not clear if it is suspicious, and
11 that is why the post mortem has been undertaken in the
12 first place to decide whether criminality is involved.
13 Q. Your involvement comes, as you mentioned, through the
14 Fiscal, the Procurator Fiscal?
15 A. Yes.
16 Q. Can you just explain to people briefly how that comes
17 about?
18 A. When cases are reported to the Procurator Fiscal it can
19 be from a variety of places. So it can be directly from
20 members of the public, it can be from medical doctors,
21 be it general practitioners, be it hospital doctors, it
22 can be directly from the police, and they will -- the
23 police will be involved in some shape or form and will
24 have to put together a report for the Procurator Fiscal
25 who will then consider that report, and consider if that

1 is a case that requires the input of a forensic
2 pathologist.
3 They will then refer the case to us, via the report
4 that has been put together by police officers, in
5 addition to an instruction sheet that will instruct us
6 what kind of post mortem they want done. And by that
7 I mean because of the double-doctor system, for example
8 if it is a homicide case it will be instructed as
9 a double-doctor, where two of us will have to undertake
10 that. But the vast majority will be referred to us just
11 for single-doctor post mortem, so just one of us will
12 undertake that and those will be the cases I was
13 speaking about, the natural deaths or non-natural deaths
14 like suicides. So we will get our instruction sheet
15 from the Procurator Fiscal with some information with
16 regards to the patient, with regards to the
17 circumstances surrounding their death, their past
18 medical history and we can then take that and use that
19 to move forward and undertake the post mortem.
20 Q. So are you dealing with all sorts of deaths in Scotland
21 or is it just in a particular area of Scotland?
22 A. I work for East Federation, so we cover the central
23 belt, we cover Fife out towards Falkirk area as well and
24 down towards the Borders, so we have a reasonably large
25 geographical area.

1 Q. How many years have you been a consultant forensic
2 pathologist?
3 A. 12 years now.
4 Q. Can you help people understand how many post mortems or
5 autopsies you are doing on an annual basis, on a weekly
6 basis?
7 A. On an annual basis each of us -- there's six of us in
8 our department now, we will do between 350 to 400
9 post mortems each -- on a weekly basis it is vastly
10 different. For example, this week because I have
11 obviously got other commitments I am not doing any
12 post mortems, but some weeks I could be doing kind of 15
13 or so a week. We work out of the City Mortuary in town,
14 and our usual quota is seven cases per day, so Monday to
15 Friday we don't work -- we don't do routine cases out of
16 hours but Monday to Friday there will be seven cases
17 that two of us will be down doing, so one doing four and
18 one doing three, and then anything suspicious or
19 double-doctor requiring will be done outwith that,
20 normally in the afternoons or in the weekends.
21 Q. So you can be asked to work at the weekends as well --
22 A. Yes.
23 Q. -- if something suspicious arises?
24 A. We are on call 24/7 so there is always a forensic
25 pathologist on call seven days a week, 24 hours a day.

1 Q. So you have built up it would sound like a lot of
2 experience in relation to carrying out autopsies?
3 A. Yes.
4 Q. Can you help people understand when you are doing maybe
5 a suspicious death or an unexplained death where there
6 is a double-doctor, as you say, can you explain to
7 people what you are doing as a pathologist. You have
8 talked about trying to work out the cause of death but
9 what are you looking for? What is the importance of
10 your role in that?
11 A. What we do initially is a very detailed external
12 examination. So we will look at every part of the body
13 very, very carefully, documenting anything that we are
14 seeing. So we will begin with a general examination, so
15 looking at things like height and weight, build, hair
16 colour, eye colour, so anything that potentially gives
17 us an idea of who the person is. Things like tattoos
18 and scars we will look for, again because that can be an
19 indicator of who the patient may be. After that we will
20 look in great detail for any injuries that are present
21 externally, down to tiny little things that might be 0.1
22 of a centimetre, everything that is on the body will be
23 documented.
24 Following that, we will then look internally, so we
25 will look at all of the organs, all of the rib cage,

1 inside the head, and what we are basically looking for
2 is a reason for their death ie is it natural, do they
3 have, for example, heart disease, do they have
4 pneumonia, do they have anything that we can explain why
5 they have died suddenly. But we are also looking for
6 internal injuries: do they have any internal injuries,
7 for example, have they broken some bones, broken ribs,
8 have any of those pierced the lung that could have
9 caused a collapsed lung. If it is a potential homicide,
10 if there has maybe been a stabbing or a shooting or
11 anything then we document everything, every injury
12 internally that has happened because of what has
13 happened during that potential assault.
14 We will also take a variety of samples from the
15 body, both externally and internally. Some of the
16 samples specifically for and under the instruction of
17 the Procurator Fiscal, so for example swabs may be -- if
18 you have a potential assailant and they have scratched
19 their perpetrator we would take nail swabs which would
20 be under the instruction of the Fiscal that would be
21 then given to the police as productions.
22 But we also take a number of samples for us, for the
23 completion of our report. And that is why you have
24 initially a provisional report and you have a final
25 report, because there is lots of investigations we take

1 that we then require a reasonable amount of time to get
2 that information back. So things like toxicology we
3 will take samples of ideally blood, urine, and we will
4 send that off for a detailed toxicological examination
5 and that may form part of our report, it may form part
6 of our cause of death.
7 Things like histology, histology is looking at
8 something down the microscope, so we will take some
9 very, very small sections of -- say a small section of
10 heart, that will be processed by our lab and put on
11 a slide and stained for us so we can have a look at the
12 actual structure of the heart to make sure there is no
13 damage that may be related to the cause of death. And
14 we do that with all of the lungs as standard -- sorry,
15 all of the organs as standard with all of our
16 post mortems.
17 We also have access to things like neuropathology,
18 virology, bacteriology, so there is lots and lots of
19 different investigations that we undertake that will all
20 form the basis of our conclusions and the basis of our
21 cause of death.
22 So it is a very detailed procedure, some
23 post mortems can take 12/13 hours, sometimes longer to
24 be fair, depending on what you are finding and how much
25 detail and how many injuries you are finding at the

1 time.
2 Q. There is a lot in that answer and we will come back to
3 much of this in more detail, specifically in relation to
4 Mr Bayoh. But can I just touch on a couple of things
5 you said there. You talked about looking externally and
6 internally. As well as looking internally for things
7 I think you mentioned like heart disease, would you also
8 be looking for signs of infection or inflammation, or
9 that type of thing?
10 A. Absolutely. Any disease process that potentially may
11 have played a role in death, to be fair not even
12 necessarily having had to play a role in death. Any
13 disease process we would be looking for.
14 Q. You have talked about taking samples. Is this
15 something -- you mentioned earlier that
16 a histopathologist would be taking samples and testing
17 tissue and that type of thing, you said you had
18 a grounding in that. So is that the experience you have
19 in that role, does that follow through with the type of
20 samples you are taking?
21 A. Absolutely. In our initial training I did four years
22 training in histopathology before I moved into forensic
23 pathology so my qualification allows me to look at my
24 own tissue samples, so -- and I take tissue samples in
25 all of my post mortem cases so I have -- I saw thousands

1 over the years so I have looked at a lot of tissue down
2 the microscope.
3 Q. You have talked about sending off samples and swabs and
4 tissue samples. You have talked about some of the areas
5 that are investigated after you have carried out the
6 autopsy: toxicology, histology. Are these sent
7 externally to other specialists?
8 A. They are. Our toxicology is sent to a lab in Glasgow,
9 so they have toxicologists that will process those
10 samples and give us results but the interpretation of
11 those results is really up to us and how we incorporate
12 that into our post mortem report but they will look for
13 the specific drugs and we will get a report detailing
14 what they have or have not found.
15 Q. Once they have prepared those or carried out that
16 investigation, would they prepare a report and send that
17 back to you --
18 A. They would.
19 Q. -- for you to consider?
20 A. Yes.
21 Q. And then you say that is part of your assessment when
22 you consider cause of death?
23 A. Yes.
24 Q. So the final assessment of cause of death, is that very
25 much dependent on all of these investigations and the

1 results of those investigations?
2 A. Exactly, yes.
3 Q. You mentioned histology. Tell us what that is?
4 A. So what happens is you take tiny pieces of tissue of
5 various organs and the lab take tiny slices, kind of
6 microtome, millimetre-thick slices of that and will
7 place it on to a glass slide. They will then use
8 special stains to stain that so we can look at that
9 under the microscope, so you see the cellular detail of
10 organs. So for example the heart, the heart is
11 a muscle, it is made up of muscle cells, and I can look
12 at sections of the heart down the microscope and look at
13 those muscle cells, look if there is any damage to them,
14 either acutely or chronically, if there is any scarring
15 or anything like that which can maybe give me an idea of
16 a disease process that may be happening in the patient
17 and potentially a cause of death.
18 Q. So is that what you were mentioning earlier, where if
19 someone dies suddenly you are looking at these samples
20 to say was it a heart attack, to use a layman's term?
21 A. Exactly.
22 Q. Or was it a cardiac arrest?
23 A. Yes, so in the vast majority of our routine cases we
24 will take a wide sampling, we will widely sample the
25 heart because you don't necessarily have to see changes

1 grossly when you are holding the heart in your hand, you
2 can see changes microscopically that are not necessarily
3 apparent so it's best practice to widely sample to make
4 sure you are not missing anything.
5 Q. You have used the word "gross" or "grossly" just
6 a second ago and "microscopically", can you explain
7 people who are listening to your evidence what that
8 distinction is?
9 A. Grossly is naked eye, it is having something in your
10 hand and being able to look at it. Microscopically is
11 having to do a series of things to the tissue to be able
12 to see the microscopic detail, so the tiny detail that
13 you would require a microscope to see.
14 Q. As part of your role in looking at everything are you
15 doing both those things, looking visually at things to
16 see if there is any differences and also looking
17 microscopically and considering the results of the
18 investigation?
19 A. Yes. Yes.
20 Q. Thank you. Can I ask you about post mortems generally.
21 People might be interested in the sort of timescale
22 involved in the instruction of a post mortem. You have
23 talked about the Fiscal being involved. Maybe there has
24 been something raised by a member of the public or the
25 police, the Fiscal is involved and they instruct

1 a post mortem. What about the timescale? Obviously you
2 are a busy pathologist, you are doing a lot of work on
3 a daily basis. How quickly would a post mortem
4 generally be carried out if there is a suspicious death?
5 A. In a suspicious death as quickly as we possibly can,
6 hence why we are on call 24/7 and we do cases at the
7 weekend. So in the vast majority of cases if we get
8 a call it's -- say if I got a call on a Saturday
9 morning, if there was a possibility, which doesn't often
10 happen now because the processing of scenes tends to
11 take a bit longer than it did maybe ten years ago, but
12 if there was a possibility of the body being able to be
13 transferred to the mortuary, and us being able to set
14 up -- because we need to organise things like
15 photographers who need to come and police officers for
16 productions, and so if we can do that we would do that
17 post mortem on the Saturday afternoon.
18 Nine times out of ten it probably would be the
19 Sunday but we would try and do that post mortem as
20 quickly as possible and that tends to happen in all
21 suspicious cases, it would rarely wait for a few days,
22 we tend to -- it happens as quickly as possible.
23 The other thing is we obviously do have another
24 workload, we have routine cases so we have other things
25 to do Monday to Friday, so often you want get a case

1 done as quickly as possible as well because you don't
2 want it to be delayed or have any knock-on effect to
3 your routine work during the week.
4 So if it is a weekend case nine times out of ten it
5 will be done on the weekend, if we are called on the
6 Sunday it would probably be the Monday, but all of these
7 cases tend to get done as quickly as possible.
8 Q. Would that be the position even in 2015?
9 A. Yes, yes.
10 Q. Called on the Sunday, probably done on the Monday?
11 A. To be fair even more so. Nowadays it does take longer
12 to process scenes, so it takes longer to get the body
13 from the locus to the mortuary. So there may -- that
14 can have an in-built delay of about a day or so, whereas
15 back in 2015 I don't think that was the case. So
16 I think the vast majority of cases we would have done as
17 quickly as possible, either same day or following day.
18 Q. When you use the phrase "processing the scene" what is
19 it you mean?
20 A. When a body is found at a locus, be it -- say, if it's
21 in a house, and there is potentially suspicious
22 circumstances there is a lot that has to happen at that
23 scene in terms of making sure that all evidence is
24 gathered. So forensic scientists, forensic biologists
25 police, police photographers, and sometimes ourselves

1 will go out to scenes, so there is a lot of things to do
2 at scenes before a body can actually be removed. And in
3 years gone by, certainly when I first qualified, it
4 tended to -- things happened overnight so this sort of
5 work was done overnight. But now reasonably frequently
6 I think from a -- for various reasons I am not privy to
7 things tend to get stopped and halted overnight, so
8 scenes are just closed and the investigation is kind of
9 taken up the next morning when I think people have more
10 of an idea about what is going on, so there is that kind
11 of in-built delay of the scene actually being processed
12 so that puts a delay to the post mortem happening.
13 Q. If the person did not die at a scene or at a locus but
14 was taken to hospital does that have an impact on the
15 timeframe?
16 A. Yes, because that would be much quicker because the body
17 would be able to be taken to the mortuary much quicker
18 because they are coming from one mortuary to another and
19 there will be a locus probably -- or there will be
20 a locus but that locus can be dealt with separately
21 because the body is not in the locus, so that would tend
22 to remove the in-built delay if they were taken to
23 a hospital, yes.
24 Q. Does that then allow the post mortem to take place more
25 quickly?

1 A. Yes.
2 Q. Why would it benefit the investigation to avoid delay in
3 the post mortem? What would the benefit be?
4 A. From my point of view it's much better to do
5 a post mortem as quickly as possible. Because the
6 minute someone dies they do begin to decompose,
7 different rates depending on the kind of climate or
8 circumstances but from my point of view I would much
9 prefer to get -- to do the post mortem, to do the
10 external examination, the internal examination and more
11 specifically get my samples, because when you are
12 taking -- when I was talking about histology, so little
13 bits of tissue, the tissue begins to break down very
14 quickly and if the body is left for a reasonable period
15 of time it can actually alter what I can see down
16 the microscope. So we would always prefer to do the
17 post mortem as quickly as possible because it may affect
18 how we are able to describe things, it may affect the
19 information we can give about cause of death if the body
20 has begun to decompose and it affects our sampling.
21 Q. Is there anything you can do to preserve the body
22 pending the post mortem?
23 A. All bodies will be refrigerated, hopefully as quickly as
24 possible, and will be coming from one refrigeration
25 situation in a hospital to the City Mortuary, so that

1 is -- would be automatic. But that doesn't completely
2 stop a body decomposing, it doesn't -- unless you freeze
3 a body you are still going to get a degree of breakdown
4 even if you are -- even if they are refrigerated, and we
5 cannot freeze bodies without very good reason because
6 that again, when you freeze a body and the body has to
7 be reheated, that will affect what we are seeing
8 grossly, it will affect what we are seeing
9 histologically and we may fail to get toxicology because
10 of that, so that is not an option in the short term.
11 The only bodies that tend to be frozen are after the
12 post mortem if there is an issue with the release of the
13 body or if there is no family to claim the body, the
14 body may be frozen to reduce breakdown but at that point
15 from our point of view it doesn't matter because we have
16 all of the information we need to be able to give
17 a cause of death and give family as much information as
18 possible.
19 Q. What difference does it make to that process if the body
20 has not initially been put in a fridge or
21 a refrigerator?
22 A. You mean ...
23 Q. So you talked about bodies being refrigerated and that
24 helps to avoid some of the elements of decomposition.
25 What if the body is not initially put in a refrigerator

1 or kept in refrigerated circumstances?
2 A. The body -- well, depending on what circumstances they
3 are kept in or what -- people will decompose more
4 quickly if they are in higher temperatures, if they are
5 fully clothed, if they have any concurrent infections of
6 the body before they die that increases their core body
7 temperature. So there are all sorts of situations that
8 can increase decompositions but if you don't refrigerate
9 the body as opposed to refrigerating the body reasonably
10 quickly then they will begin to decompose.
11 Q. Can I ask you in general about the post mortem. Who
12 would normally attend a double-doctor post mortem?
13 A. There's normally quite a long list. Back in 2015
14 pre-Covid -- it has changed since then with people not
15 being able to come in the PM room and all of the kind of
16 rules and regulations and it hasn't really reverted
17 back, but back in 2015 we would have -- it would be
18 myself and my second doctor, we would have a mortuary
19 technician in the PM room, we normally would have two
20 police officers who would be doing productions, so they
21 would take any productions that we would have to put
22 them in bags, and write the relevant information on
23 that, and we would have a Procurator Fiscal present.
24 Often we would have the crime scene manager, whoever was
25 managing the scene, if they were able to -- or certainly

1 the SIO, the senior investigating officer, so there
2 would be a few kind of senior police officers as
3 standard.
4 So it is -- it is quite a busy area, although the
5 vast majority of times most of those personnel would be
6 in the viewing gallery and not actually in the
7 post mortem room with us. I think in -- obviously in
8 this case PIRC were involved so it was two officers from
9 PIRC who were doing productions, from what I can
10 remember, rather than police officers.
11 Q. In relation to Mr Bayoh do you actually remember who was
12 at the post mortem?
13 A. Yes. Not names but certainly people, kind of
14 Procurator Fiscal, two PIRC officers, and
15 a photographer, myself, Dr Bouhaidar and one of our
16 mortuary technicians.
17 Q. What does the mortuary technician do?
18 A. They are there to help us, to help us with whatever we
19 need with the body. So getting the body from trolley on
20 to the post mortem table, helping us move the body if we
21 have to manoeuvre during the post mortem, kind of turn
22 the body over. They also tend to open the head in --
23 during the post mortem we look externally at the scalp
24 but we always open up the scalp to look underneath and
25 then the skull will be taken off for the brain to be

1 taken out and the mortuary technicians are trained to do
2 that so they will normally do that for us, and any other
3 detailed procedure that we require them to do depending
4 on what we are finding at the post mortem.
5 Q. Tell us about how the body is identified prior to you
6 conducting the post mortem?
7 A. There are -- again, there are a variety of ways of doing
8 this which has changed greatly since Covid also. But
9 back in 2015 the standard way would be that we would
10 have relatives or family or someone who knew the
11 deceased in life would come to the City Mortuary, we
12 have a viewing gallery, so we have a little room and
13 behind glass there's normally the trolley with the
14 deceased who will be fully covered up to the neck area
15 so it's really just their face that is exposed. And the
16 family members or friends will attend and I will
17 normally have a conversation with them beforehand and
18 just explain who I am, and what we're going to do, and
19 how the identification is going to take place. Then
20 I would take them through and let them see their family
21 member and I have to ask them to let me know that this
22 is definitely their family member.
23 That will all be kind of documented on paper,
24 exactly who they are, and who we are, and anybody else
25 involved. So that is one of the ways of doing it.

1 There are several ways that we can do identifications,
2 there are occasions where a deceased may not be
3 viewable, it may not be reasonable to expect a family
4 member or friend to see them if they are maybe very
5 decomposed or if they have lots of injuries, in which
6 case I would suggest to the Fiscal that we don't do it
7 that way and we find an alternative way. Whether that
8 is by DNA identification or dental identification, that
9 is a discussion that I normally have with the
10 Procurator Fiscal. We have had cases of identification
11 where people have been known to the police so they have
12 been able to identify to us. But the vast majority of
13 cases now post-Covid are being done by DNA.
14 So there are various methods of identification, and
15 the identification is instructed by the
16 Procurator Fiscal with a discussion with us as to the
17 best way to do it, if we are uncomfortable for people to
18 see the actual body, but it is something that is
19 ultimately -- we're told how it has to be undertaken by
20 the Procurator Fiscal.
21 Q. How common is it for -- or in 2015, how common was it
22 for family members to be involved in the identification
23 of the body before the post mortem?
24 A. Reasonably common. Reasonably common. Probably the
25 commonest way to do identification. Maybe -- because

1 these cases tend to be homicide cases, so family can be
2 very upset, so it was often not immediate family, maybe
3 kind of aunts or kind of someone outwith the family
4 because the immediate family would have been obviously
5 far too upset to come and have to do that. But some
6 sort of identification by friends or family was the
7 commonest way for it to be done, certainly as far as
8 I can remember, back then.
9 Q. If the family were not involved and the person was
10 capable of being viewed by a family member or friend, is
11 that something that you would have raised or questioned
12 with the Fiscal?
13 A. No. No. It is not -- again, it is not my remit, it is
14 not my job to decide how this is done. I am kind of --
15 we can have a discussion but ultimately how it is done
16 is decided by the Procurator Fiscal, so I can't remember
17 at the time having any discussion as to why it was being
18 done any differently.
19 Q. Right. You don't remember having any discussion about
20 that. Was there any reason why you would have raised
21 that at the time?
22 A. I mean I don't remember having any discussion, it is not
23 something I would document. I was probably -- my
24 thoughts would be that maybe family were too upset to be
25 involved. Because we have had that on previous

1 occasions, for very good reasons, so I am assuming my
2 thought process was probably that at the time; that the
3 family were far too upset to be involved. But again
4 I can't remember having a specific discussion about it
5 at the time.
6 Q. Was anything ever said to you by the police,
7 for example, about whether the family wanted to view or
8 wanted to make arrangements to view?
9 A. The viewing tends to happen after the post mortem
10 examination. The identification is not a viewing per se
11 because it is very, very brief, the family can't go
12 anywhere near the body and it is really solely for the
13 purpose of identification, so viewings do happen and we
14 do get a lot of requests for viewings for -- kind of
15 before the post mortem examination, and again it's up to
16 the Fiscal to allow that, we can't give the okay for
17 that, but I know lots of viewings do take place after
18 the post mortem examination.
19 Q. So there might be an identification process, a brief
20 identification prior to the post mortem?
21 A. Yes.
22 Q. But then a viewing separately?
23 A. The viewings tend to be -- because the family want to
24 spend time with their loved one and that is not really
25 possible where -- there is no pressure but obviously the

1 post mortem is about to take place and we try and give
2 the family as much time as possible but it certainly
3 wouldn't be as relaxed as it would be if they were
4 coming in after the post mortem where they would be
5 given as much time as they need and it's kind of a much
6 better, more relaxed circumstance. There is not two
7 pathologists standing there, and normally two police
8 officers standing there and a whole lot of people
9 standing outside waiting, it would be much more relaxed
10 where the mortuary staff would just take them into the
11 viewing room and leave them for however long they wanted
12 to stay.
13 Q. That is possible because by then the post mortem has
14 taken place?
15 A. Yes.
16 Q. Tell us about your awareness in 2015 of cultural
17 sensitivities and that type of thing when you are
18 preparing for a post mortem?
19 A. We are asked a lot if there are different cultures
20 involved and there are obviously specific religions that
21 do require bodies to be returned as quickly as possible,
22 kind of within 24 hours, so we are asked about this
23 reasonably frequently, and as much as we can we will try
24 and help, we will try and expedite the post mortem, do
25 it much more quickly. These tend to be routine cases

1 because in suspicious cases they are being done as quick
2 as we possibly can. In routine cases that we do on
3 a daily basis our waiting times can be anything from
4 a week to three weeks after the person has died,
5 depending on how busy we are. So if we do -- normally
6 it comes via the Procurator Fiscal that with the family
7 circumstances and asking if there is a possibility of
8 doing things quicker. We will try and do that as much
9 as we possibly can.
10 Q. Who would raise any cultural or religious sensitivities
11 with you and when would they do that?
12 A. It would normally come from the Procurator Fiscal
13 because they -- we don't have any -- we don't speak to
14 families, we don't have any input with families or
15 interaction with families. Unless, after the
16 post mortem has been done and the report has gone out
17 family members may ask to speak to us and we will have
18 a family meeting, and we do that reasonably frequently,
19 where they have questions about the post mortem but we
20 don't -- up until then we don't have any direct contact
21 with family, all the information that we get comes via
22 the Procurator Fiscal. So we will often, with our
23 routine cases we will often get an email just explaining
24 the situation, and asking if there is any way of this
25 being expedited. And nine times out of ten that is not

1 a problem, all of us will quite happily do the case
2 quicker in order to aid the body release to get back to
3 family as quickly as possible.
4 Q. So from what you are saying normally the information, if
5 there is information about any cultural or religious
6 sensitivities, that would come to you via the
7 Procurator Fiscal themselves?
8 A. Yes, yes.
9 Q. Are there any cases where the police would provide you
10 with that information or is it generally the Fiscal?
11 A. There may be -- I mean the police provide the police
12 report so there may be information in the police report
13 about the person being Muslim or some other
14 religious ... But I think unless we are --
15 I wouldn't -- if I had that in a report, without the
16 Procurator Fiscal getting in contact I wouldn't expedite
17 that myself at that point. I would wait for the
18 Procurator Fiscal to get in touch with family's wishes
19 and then move it from there.
20 Q. So would your expectation be that information regarding
21 those matters would come you to direct from the Fiscal?
22 A. Yes.
23 Q. If that information came from the Fiscal, you would then
24 act upon that?
25 A. Yes.

1 Q. Have you -- in 2015 did you have experience, prior
2 experience, of performing autopsies on the body of
3 a Muslim person?
4 A. Yes, I am sure I have done over the years a number of
5 cases, yes.
6 Q. Were there any particular issues that you were aware of
7 from that previous experience?
8 A. I think often we are made aware that families don't want
9 a post mortem being undertaken and we completely
10 understand that. But again it is outwith my control of
11 that being undertaken, when a case for particular
12 reasons is referred to the Procurator Fiscal a full
13 post mortem examination is legally mandatory and it is
14 very difficult for them to -- for that not to happen.
15 So we are aware of kind of family's wishes, we often
16 get information to say the family do not want
17 a post mortem and if there is any way that we can avoid
18 it from a -- but that would normally be in a natural
19 death where we may be able to do a view and grant
20 examination, that is a procedure that we have where we
21 do an external examination only to make sure there is no
22 injuries that we would be worried about. We would have
23 to have a significant amount of clinical information to
24 say that a person had specific -- a specific past
25 medical history that may explain why they have died

1 suddenly. And in that it tends to be in older people as
2 well, it tends to be in elderly people. In that sort of
3 situation if the family really don't want to have
4 a post mortem, and to be fair that is not always on
5 religious reasons, we see that in a lot of cases of
6 families who just don't want a post mortem, which is
7 completely fine, in those sorts of cases we will try and
8 do a view and grant examination so there is no cutting
9 of the body.
10 But that doesn't exist for potentially suspicious
11 cases, it is not possible. Those types of cases have to
12 have a full post mortem and I can't do anything about
13 that, I have to take instruction from the
14 Procurator Fiscal and undertake those post mortems.
15 Q. Thank you. From your prior experience are you aware of
16 sensitivities -- you have talked about avoiding delay,
17 and some religions wanting to deal with the body
18 quickly, are you aware of any sensitivities regarding
19 taking hair samples at all?
20 A. I think there are -- I wasn't aware of this until I did
21 some reading, I think there are some religions where it
22 does go against their religion to have that undertaken
23 as well and I know it was discussed in this case. But
24 again, if it is very, very important with regards to
25 cause of death or getting as much information as

1 possible, then it is something that we can't not
2 undertake, and we can't avoid doing it if it potentially
3 is going to be helpful with regards to the amount of --
4 the information that we want to give at the end of the
5 post mortem. So there was a discussion in Mr Bayoh's
6 case with looking at hair for toxicology, and what we
7 would do there is, when -- if someone is taking drugs
8 chronically, so over a period of time, the way the body
9 processes them it also grows in the hair, so we can take
10 a hair sample, and the hair grows at roughly
11 a centimetre a month, so if we got a few centimetres of
12 hair and it showed specific drugs in those centimetres,
13 it can tell us that that drug has been taken over
14 a period of a few months. I mean, occasionally I have
15 done it on people with 10-12 centimetres of hair, if
16 they have longer hair, it is something I do reasonably
17 frequently to look at chronicity. So that was discussed
18 at the time but his hair was very, very short so it
19 wasn't done. If the hair had been longer we would have
20 had to look at certainly doing that and that would have
21 been under discussion with the Procurator Fiscal to make
22 sure everyone was happy that that was happening. But it
23 wasn't -- we weren't able to do it in this case for
24 those reasons.
25 There are other hair samples that can be taken at

1 post mortem as police productions normally, so head
2 hair, can be plucked, public hair can be plucked. And
3 the main reason for that is to -- for comparison's sake,
4 if you have -- if police are finding hair at locus they
5 can do a comparison. But those are purely police
6 productions, they have nothing to do with pathology and
7 there are a number of samples we take at post mortem
8 that we take under instruction of the Procurator Fiscal
9 with the police that are handed directly to the police.
10 We will sign the bags because we have taken them but we
11 will never see those samples again, we don't process
12 them in our labs, I don't interpret any results from
13 them, they go to a police lab for interpretation. So
14 that would be another side to hair being taken
15 that I potentially might take just because I am the
16 person at the PM table but it is not samples that we
17 would take for our purposes.
18 Q. I would like to move on and look at your initial
19 post mortem report. So let's have that on the screen
20 please PIRC 01444. We looked at this very briefly just
21 at the beginning. You have the hard copy. We will see
22 this is issued on 6 May, and if we move down the page
23 you will see he is pronounced dead on 3 May at 09.04,
24 the date of autopsy was 4 May, the day after, and here
25 your report is dated the 6th, and the cause of death

1 here is:
2 "... Unascertained (pending further
3 investigations)."
4 You have talked about doing this initial report, and
5 can you just in general explain to us why this is issued
6 saying, cause of death:
7 "1a. Unascertained (pending further
8 investigations)"?
9 A. So this is the cause of death that is given immediately
10 after the post mortem with what I have -- the
11 information I have, that I have deemed from the
12 post mortem in the external and internal examination.
13 In this case there was no obvious cause of death at the
14 time of the post mortem. Hence why it is unascertained
15 pending investigations because I have taken various
16 investigations during the post mortem that I will then
17 look at for the final cause of death when I have all of
18 the information.
19 Q. For the purposes of a comparison what would in your view
20 be an obvious cause of death?
21 A. If we stick with potentially suspicious cases, if
22 someone has been stabbed seven times and one of those
23 stab wounds at the post mortem I have discovered has
24 gone directly through the heart, it has bled into the
25 sac that surrounds the heart and also bled into the lung

1 cavity, the cause of death there would be stab wound of
2 chest or stab wound of heart, so I would be able to give
3 a specific cause of death at the time of the post mortem
4 because all of the other investigations that I do --
5 I would still do histology, I would still do toxicology,
6 but none of them are going to add a huge amount because
7 at the end of the day the person would have died because
8 they have been stabbed in the heart, and I can
9 categorically confirm that at the time of the
10 post mortem.
11 Q. So in relation to Mr Bayoh it was unascertained, and
12 pending further investigations, and so was this the
13 initial report then allowed you to have those
14 investigations carried out and the samples and the swabs
15 sent to other specialists to do reports?
16 A. Yes, yes.
17 Q. The benefit to people of having this initial report
18 issued, what does that then allow?
19 A. It allows the police and the Fiscal to move forward with
20 their investigations. It also allows -- if there is
21 a defence post mortem, so in potentially suspicious
22 cases there will be -- another pathologist will come in,
23 and to be fair, back in 2015 defence post mortems tended
24 to be done with a separate post mortem being undertaken,
25 but it is always very, very helpful for that defence

1 pathologist to have my report or a report in front of
2 them to see exactly what has been found at the
3 post mortem because the post mortem does disrupt the
4 body, and also, as we spoke about previously, albeit the
5 person is refrigerated the body still can decompose,
6 still can begin to break down, so what they see when
7 they come to view the body may be slightly altered to
8 what I saw when I had the body at the very beginning
9 when it was very, very fresh.
10 So it is really, really helpful for the defence
11 pathologist to have the primary pathologist's report to
12 look at before they undertake their post mortem, if
13 indeed -- now things have changed and defence
14 pathologists don't tend to do a second post mortem now,
15 it is all done as a paper exercise with the -- with our
16 report and with photos. And also it means that if they
17 have our provisional report and they have the photos
18 from the post mortem, and there may be something that
19 they are thinking that we potentially missed they can
20 then decide to go to the body and have a look at the
21 body themselves but if they think all the information is
22 there from what we have provided then it stops a second
23 post mortem having to be undertaken which is more
24 destruction of the body and also stops the deceased from
25 being released to the family for a longer period, so it

1 means the proceedings can be finished slightly earlier
2 which means the body can be released and the family can
3 move on with the funeral and things. So it's a much
4 better way to do things.
5 Q. So in this initial post mortem report or provisional, as
6 you have coined it, what information is put in this
7 report by you?
8 A. I will put in -- obviously the front sheet --
9 Q. We will come through that in a minute but just in
10 general?
11 A. I tend to put in -- in the background circumstances
12 I will put in information that I have thus far
13 available -- been made available to me which will
14 normally be by police, and in this case by PIRC, so any
15 information they have given me, normally we have
16 a briefing report, I will tend to include that. So any
17 information that I have that I think is important
18 beforehand, before the post mortem examination was
19 undertaken will be put in the background circumstances.
20 And the actual post mortem report will be kind of what
21 I said previously as to what I do in every post mortem,
22 a thorough external examination, a thorough internal
23 examination, and then there will be a list of
24 investigations that I'm going to undertake and the list
25 of samples that I have been asked to take for the

1 Procurator Fiscal, a very brief conclusion, which will
2 normally be just a line because I don't have
3 a conclusion at that point, and whatever my cause of
4 death is initially.
5 Q. Before we move away from this page we see medical cause
6 of death is listed as 1a unascertained. Can you explain
7 to us what it means that it is number 1a, and it's
8 unascertained? Can you give us a little bit of
9 information about the numerical system?
10 A. This is how deaths are certified in Scotland. The death
11 certificate that has to be issued on -- every person who
12 dies has to have a death certificate issued, in order
13 for the family to register the death and for the person
14 to then have a funeral. On that death certificate there
15 are numbers and letters, 1a, 1b, 1c, 1d and then a part
16 2. And 1a is the primary cause of death. It's the --
17 for example I was talking about a stab wound, 1a would
18 be stab wound of heart or stab wound of chest. If you
19 had someone in a natural disease, that had died of
20 a heart attack say, and that is what I was finding at
21 post mortem, my 1a would be myocardial infarction, which
22 is the medical term for a heart attack and 1b would be
23 coronary artery disease or coronary artery atheroma and
24 the reason for that 1b is what leads to the 1a. So if
25 you have narrowing or furring of your arteries you get

1 blockage, oxygen doesn't get to the heart, and you have
2 a heart attack, so it's the coronary artery disease that
3 is causing the heart attack, so 1a, 1b. The vast
4 majority of cases will just be a 1a but you can get --
5 for example, if someone dies of a pulmonary embolism, so
6 that is a clot in the lung, I will find that at
7 post mortem, I will also look for clots in the legs,
8 deep vein thrombosis, because that is the commonest
9 place that the clots will come from, that will give me
10 a 1a of pulmonary thromboembolism and a 1b of deep vein
11 thrombosis because the clots have originated in the
12 legs, they've gone up to the lungs, they have blocked
13 the lungs and they have had the clot in the lungs and
14 that is ultimately what has killed them.
15 If they, for example, had two weeks before broken
16 their leg, and had been unable to walk so had been quite
17 immobile that is a huge risk factor for getting a clot
18 in your leg. If I was able to -- I am able to say cause
19 and effect, so that would be 1a pulmonary
20 thromboembolism, 1b deep vein thrombosis, 1c fractured
21 leg, lower leg or whatever it was. If that fracture was
22 due to a fall, that would go into 1d. If that fracture
23 was due to surgery it would -- so it's kind of this
24 causes this, causes this, causes this. This is the kind
25 of list you get from 1a to wherever it goes.

1 Then under part 2 you have other factors that may
2 have played a role if the death but are not directly
3 related. So things like I was talking about the heart
4 disease, if you are diabetic you are more prone to
5 developing heart disease, you have a much higher risk of
6 developing heart disease so although the diabetes has
7 not directly led to the heart attack it has indirectly
8 because it is given you a reason or a risk factor if you
9 like. It's things like if you have got lung cancer in
10 the 1a and you are a smoker it will go under part 2,
11 it's things like that, so 1 is -- 1a to 1d are direct
12 cause and effect whereas the part 2 tends to be factors
13 that could have played a role but are not directly
14 related.
15 Q. So the smoking at part 2 doesn't -- smoking a cigarette
16 doesn't cause to you develop -- to kill but it would be
17 an underlying risk factor?
18 A. It's a risk factor exactly, yes.
19 Q. Thank you. Can I move down this page, please, on to
20 page 2. Thank you. So here this is your provisional or
21 initial post mortem and I want to go through this in
22 some detail with you, if I may. We see at the beginning
23 you have detailed who you are, and the instructions you
24 have received, and then you talk about the
25 identification of Mr Bayoh and the people who were there

1 to identify him. We have already discussed the fact
2 these are not family members. One of them was
3 Peter Grady, a Detective Constable from MIT, and both
4 scene managers dealing with the deceased at
5 Victoria Hospital and that was DC Grady and
6 John Ferguson who was from PIRC, so they were both there
7 and assisted you with the identification?
8 A. Yes.
9 Q. Then we see background history and if we can look at
10 that. Here if we just stop there for the moment,
11 please, we see a number of paragraphs that we will look
12 through, but these are -- are these your notes about the
13 circumstances that caused Mr Bayoh to be -- to require
14 a post mortem?
15 A. Yes, taken from the information that has been provided
16 to me, yes. I have kind of summarised what I thought
17 were the kind of important points.
18 Q. Where was that information coming from to you?
19 A. From a briefing paper that was given to me by one of
20 the members of PIRC.
21 Q. Right. So this is paperwork that you are given in
22 advance of the post mortem?
23 A. Yes, I got that prior to the post mortem.
24 Q. Prior to the post mortem had you had a chance to
25 consider that information?

1 A. Yes.
2 Q. Yes. Then we see here also in bold:
3 "The general practice notes are awaited.
4 "The hospital notes are awaited."
5 A. Yes.
6 Q. What does that mean?
7 A. It means that they have been asked for, as in I have
8 asked for them to be got, but I haven't actually seen
9 them prior to the post mortem examination because they
10 have not been able to get them prior to the post mortem
11 examination, which is a fairly frequent occurrence.
12 Q. When you say "fairly frequent", does it cause you --
13 what issues does it cause you if they are not available?
14 A. It doesn't cause me -- if it caused me any issues
15 I wouldn't do the post mortem. I have had cases in the
16 past where the medical notes specifically haven't been
17 made available, and I have -- I have not undertaken the
18 post mortem until they have been given to me which can
19 delay the post mortem by a day or so. There are some
20 cases where categorically I would not undertake the
21 post mortem examination if I don't have these notes.
22 Those mainly are cases where people have undergone major
23 surgery, after having been assaulted or stabbed
24 and I want to know categorically what a surgeon has done
25 because I am going to have to differentiate potentially

1 what they have done with what the assailant may have
2 done, so I need that information prior to the
3 post mortem examination, so that is one of the main
4 reasons I would not continue to do the post mortem if
5 I didn't have that information.
6 In this case I didn't think that that was required,
7 I had a reasonable amount of information given to me,
8 and I didn't think it was going to alter what I was
9 going to do at the time of the post mortem, and that is
10 often what will happen, I will always get the notes and
11 I will have a really good read of them afterwards and
12 make sure there is nothing that I've missed. But if
13 I needed to stop I would have stopped.
14 Q. Can we briefly have a look at your Inquiry statement.
15 We will come back to your report in a moment, but this
16 is SBPI00304 and I'd like to look at paragraph 6 to 8,
17 please. This is headed:
18 "Information provided regarding the circumstances of
19 death."
20 And you talk about receiving a call and the Fiscal
21 and there will be a discussion. Do you see that section
22 of your statement?
23 A. Yes.
24 Q. Then you are asked at 7 about some notes, the Chair can
25 read this in due course and if we can look at --

1 actually can we go back to 6 for a moment, at the very
2 end, the final sentence in paragraph 6 says:
3 "I remember it was a very dynamic situation and
4 there was insistence for the post mortem to be done as
5 quickly as possible."
6 I wonder if you could explain a little bit more
7 about that for the Chair?
8 A. I remember at the time because I took the phone call on
9 the Sunday and already there was a lot of kind of media
10 interest, there was a lot of kind of information, kind
11 of already out there, so -- and there was obviously
12 questions because there had been police involvement as
13 well. So I do remember there being a reasonable amount
14 of stress surrounding that, and also a reasonable amount
15 of pressure to get the post mortem done as quickly as
16 possible. But bearing in mind these sorts of
17 post mortems I would have done as quickly as possible
18 anyway. But I do remember because of the circumstances
19 surrounding the case, there was pressure that I have
20 never felt before I suppose, but again it doesn't change
21 the fact that it would've been done as quickly as
22 possible anyway because these types of cases tend to be.
23 Q. You use the word "insistence" there you have talked
24 about pressure, where was that coming from; do you
25 remember who that was from?

1 A. I honestly can't remember, I remember the feelings at
2 the time but the kind of situation was so kind of quick
3 in unfolding I can't remember exactly where it was
4 coming from or if it was just generally the whole kind
5 of atmosphere.
6 Q. Right. When you talk about the atmosphere can you
7 remember the people that were contributing to that
8 atmosphere or the nature of their roles?
9 A. Specifically no, I can't remember exactly who -- I spoke
10 to the Procurator Fiscal on the Sunday because they
11 would have been the person that would have phoned me,
12 I can't remember if I had spoken to anyone from PIRC on
13 Sunday or not, I didn't make a note of that. I could
14 have done but I honestly can't remember.
15 Q. Did you have any conversations with individual officers?
16 A. Again, on the Sunday I don't know, I don't think so. It
17 wouldn't be common for me, I mean I occasionally on
18 cases if I need to go to scenes I will speak to the SIO
19 because I can get a better idea of timings and it means
20 I am not hanging around for ages, I honestly can't
21 remember if I did or didn't speak to anybody. I know on
22 the Sunday we had decided that we were doing the
23 post mortem on the Monday, which is what I would've done
24 anyway, it couldn't have been the Monday morning because
25 we already have routine cases on the Monday morning and

1 we cannot cancel routine cases because that would have
2 a knock-on effect for several families who are obviously
3 waiting for loved ones to have funerals. So very
4 quickly the post mortem was organised for the Monday
5 afternoon, which to be fair is what would've normally
6 happened, I just remember at the time that there was
7 a lot of stress involved with that.
8 Q. Was there any conversation with DC Grady?
9 A. I honestly cannot remember if I spoke to anybody
10 specifically, I didn't document anything but I wouldn't
11 have done, to be fair, I wouldn't have written anything
12 like that down to be put in my report if I had spoken to
13 them, if it was about the circumstances of setting up
14 the post mortem. But I honestly cannot remember.
15 Q. Can we look at paragraph 11. You mentioned earlier
16 having:
17 "... a briefing prior to the post mortem and written
18 information was provided."
19 There isn't a document reference in that paragraph
20 but could I ask you to look at WIT 00003 please. And
21 just confirm if this is the briefing note that you were
22 provided with. We can maybe bring that up on screen.
23 Does this look familiar?
24 A. Is this in ...?
25 Q. You've not got a hard copy, sorry. You will have to

1 look at the screen. If we can scroll up very slowly and
2 let you see that, if you would prefer a hard copy we can
3 arrange that at the next break.
4 A. Okay.
5 Q. But if we just scroll through and let you have a look at
6 that and see if it looks familiar to you.
7 A. I think the best way to correlate is to look at the
8 language and what is in that and what's in the
9 background circumstances of my provisional report, and
10 I think it is very, very similar because I very much
11 take what is there, I don't tend to change the language
12 I tend to keep the sentences very specific to what is in
13 the information that is provided to me and I think it is
14 very, very similar, so I think I have taken the
15 information directly from here.
16 Q. Thank you. Would it help if we do provide you with
17 a hard copy of this?
18 A. Possibly.
19 Q. We can do that at the break. But, thank you, that's
20 great, we will maybe come back to that once we've got
21 the hard copies. We'll come back to that.
22 Can I ask you -- I asked you a moment ago about
23 DC Grady. DC Grady in his Inquiry statement recalls
24 a meeting with you on the 4 May, which was the day the
25 post mortem was carried out?

1 A. Uh-huh.
2 Q. I wondered whether you remembered having a discussion
3 with DC Grady. He is obviously named as one the people
4 who was present in your provisional report --
5 A. I think there was a briefing before the post mortem,
6 because I remember sitting down in the room in the
7 City Mortuary where I was provided with a briefing
8 paper, so -- I can't remember if that was his name to be
9 fair but I am assuming that is who it was, yes, so
10 I think -- I presume both myself and Dr Bouhaidar would
11 have sat down -- we normally, before any sort of
12 suspicious case, we normally sit down with the police
13 and get as much information as we possibly can which
14 ideally is provided in a paper copy. And they normally
15 talk through what they have so far.
16 Q. At any point did he ask or any of the gentlemen there
17 ask if you could give a provisional view on whether the
18 cause of death was due to a blunt-force head injury?
19 A. Was this prior to the post mortem?
20 Q. Yes. As far as I am aware, yes. He mentions that in
21 his statement that there was a meeting at 12.40 on
22 4 May?
23 A. Because that would have been prior to the post mortem.
24 I don't remember specifically being asked that but
25 I would imagine I would have said I couldn't comment

1 without having actually undertaken the post mortem.
2 Q. Let's go back to the provisional report, please,
3 PIRC 014444. If we can go back to page 2 we were
4 looking at the background history. You have told us
5 a little about that, and you've said you summarised here
6 what you considered to be the important elements that
7 had been drawn to your attention. Then in paragraph 2
8 down there after the 07.15, so if we can turn on to the
9 next page, you mentioned 07.15 hours, that is on the
10 morning of 3 May 2015, there were reports of a male in
11 the area in possession of a large knife:
12 "Witnesses reported him kicking out and chasing cars
13 and police officers were dispatched. [He] engaged with
14 officers and a physical confrontation ensued resulting
15 in him being restrained to the ground, handcuffed with
16 leg restraints being applied. During the restraint he
17 became unresponsive and resuscitation was commenced. An
18 ambulance was called and he was~..."
19 Taken to A&E and later pronounced dead.
20 There is no mention in there of -- at that stage, in
21 your initial report, of the use of CS spray or PAVA
22 spray or batons?
23 A. I don't know if that was in the initial briefing but
24 I was definitely made aware, if it was them orally, that
25 there was potential for batons to be involved and PAVA

1 and CS spray. The reason I know that is because of the
2 different actions I have taken during the post mortem
3 examination in terms of looking for subcutaneous
4 haemorrhage around where handcuffs may have been applied
5 and also taking specific samples, as we were going to
6 try and get samples analysed for those things.
7 So even though it is not mentioned I presume that is
8 probably because it is not in the briefing paper or it's
9 an oversight on my part but I was certainly made aware
10 that that was the case prior to the post mortem
11 examination.
12 Q. Thank you. Then we see that you come on to external
13 findings, and here you say:
14 "The body was that of a dark brown skinned adult
15 male, of heavy build, measuring approximately 178 cm
16 (5ft 10in) in height ... 81kg (12st 10 lb) - BMI of
17 25.6."
18 Were those measurements that you took prior to the
19 post mortem?
20 A. Yes, they were provided to me by the mortuary
21 technicians, they will do those standard measurements on
22 all cases.
23 Q. Right. Where you say "heavy build", what did you mean
24 by that?
25 A. Muscley built, he obviously wasn't overweight at all, he

1 had a BMI of 25.6 but he was very muscly built.
2 I probably should have used the term muscly rather than
3 heavy built, to be fair.
4 Q. So "heavy" is not a reference to his weight or his BMI,
5 it's more muscular --
6 A. No, just his general size. Muscular.
7 Q. Right. Is this a visual description of the colour of
8 his skin where you say "dark brown"?
9 A. Yes, very much so.
10 Q. Then in the next paragraph under external findings
11 I would like to understand what you are talking about
12 here. You say:
13 "Within the right upper conjunctivae were at least
14 eight fine petechial haemorrhages and in the lower right
15 conjunctivae a collection of course and fine petechial
16 haemorrhages~..."
17 Obviously the Chair can read this paragraph but
18 I wonder if you can explain, perhaps just in more simple
19 language, what it was you were noting in the area of
20 eyes?
21 A. In all of our cases regardless of potential causes of
22 death we will always look very, very carefully for
23 petechial haemorrhages, petechial haemorrhages are tiny
24 little dot haemorrhages that you often see in the lower
25 parts of the eye and in the upper parts of the eye, in

1 the mouth or behind the ears. And it tends to be in
2 kind of -- these are mucosal membranes where the blood
3 vessels are very kind of small and slight and reasonably
4 easily damaged. What happens is these tiny little blood
5 vessels basically pop, so the haemorrhage or the blood
6 that is within them escapes around and you just see tiny
7 little kind of dot haemorrhages, and we can see these
8 for a variety of reasons, hence why we always look for
9 them.
10 In our forensic practice everything is a homicide
11 until proven otherwise so we want to absolutely
12 categorically know that there is nothing we are worried
13 about with regards to those haemorrhages because one of
14 the main reasons can be asphyxia, or a lack of blood
15 supply for various reasons can cause these little blood
16 vessels to pop. But you can also see them in perfectly
17 normal natural reasons, you may all have -- if you have
18 vomited, if you have vomited for a period of time you
19 may actually have noticed yourself you get little
20 haemorrhages sometimes and that is basically because as
21 you are vomiting you are increasing the pressure in the
22 blood vessels in your face and head and these blood
23 vessels are so small and slight they just pop and you
24 can get lots of little dots even around your eyes if you
25 vomit, you can also see them in -- the commonest way

1 I see them is in people who have been resuscitated, so
2 people who have had -- been in cardiac arrest, so
3 have -- their heart is not pumping and their lungs are
4 not working and you see people having to basically pump
5 on their chest with their hands. Because in the process
6 of doing that again you are pushing blood at
7 a reasonably high pressure up towards the brain, because
8 that is the purpose of it, the purpose of it is to get
9 blood to the brain, get oxygenated blood to the brain so
10 the person will hopefully not have any degree of brain
11 damage if you are successful in your resuscitation, so
12 that is commonly when we would see them as well.
13 So they are just tiny little haemorrhages in
14 different parts of the eyes, you can see them in the
15 mouth, you can see them behind ear, that we see
16 reasonably commonly in some situations but they are
17 a more worrying sign if we see them with the potential
18 of asphyxia being a cause of death.
19 Q. What is asphyxia?
20 A. Asphyxia is a lack of oxygen, it is name is "a" asphyxia
21 so it's a lack of oxygen to the brain, but there are
22 lots of potential reasons for asphyxia. Kind of one
23 example is positional asphyxia, so if you can imagine if
24 you are sitting up kind of in a chair your airway is
25 fairly protected, you can breathe fairly easily, but if

1 you are suddenly maybe turned upside down, head down,
2 head is on the ground with your legs behind you, you can
3 imagine that that is going to make it a bit more
4 difficult for you to breathe because your neck is in
5 an odd situation, you may be covering your mouth, you
6 may be covering your nose, your inner airways may be
7 obstructed and that is a type of positional asphyxia, so
8 it's a person getting into a position that will alter
9 the oxygen going to their brain, hence the word
10 positional asphyxia.
11 We have other types like mechanical asphyxia and
12 that is when you have something that is stopping you
13 from breathing be it maybe an object, for example, we
14 see it unfortunately reasonably frequently in
15 industrial-type accidents if people get stuck in
16 machinery, so the machinery is kind of maybe pushed
17 against their chest so they cannot breathe, they can't
18 extend their chest, they can't get oxygen in which means
19 that oxygen -- if they can't oxygenate their tissues the
20 oxygen cannot go to the brain so you get a type of
21 mechanical asphyxia. So there are different reasons but
22 ultimately it is a lack of oxygen going to the blood
23 that can cause someone's death if it is for a prolonged
24 period of time.
25 MS GRAHAME: I would like to explore these things with you

1 in a little more detail, but I am conscious it is
2 11.30 am.
3 LORD BRACADALE: That would be a convenient time to have a
4 20-minute break.
5 (11.30 am)
6 (A short break)
7 (11.54 am)
8 LORD BRACADALE: Yes, Ms Grahame.
9 MS GRAHAME: Thank you. Before the break we were talking
10 about asphyxia, and you had given us a brief explanation
11 about positional asphyxia and mechanical asphyxia.
12 I wonder if you could just help people who are listening
13 in today to understand how oxygen would normally flow
14 through the body, if someone's well. You have talked
15 about how it can be interfered with through position or
16 mechanical means but I wonder if you could explain how
17 it would normally work.
18 A. Okay. So when you breathe, you breathe in air, you
19 breathe in oxygen, and that is taken in through your
20 lungs, and there are tiny little blood vessels, little
21 capillaries in the lungs that will take out that oxygen
22 from the air, and transfer it into your circulation, so
23 into the blood vessels in your body. That will be taken
24 to the heart and then the heart is the pump that pumps
25 the blood out to the rest of the body, so it gets the

1 blood with the oxygen in it and nutrients to your other
2 organs. So when the heart pumps, in every kind of
3 heartbeat you will get a pulsing of the blood which will
4 go up the blood vessels going towards the brain and will
5 oxygenate the brain and give the brain its nutrients.
6 So if you get any obstruction to that oxygen getting
7 there, then the brain is not getting the required amount
8 of oxygen and the tissues will become hypoxic, which
9 just means there is a lack of oxygen and will begin to
10 shut down and die off.
11 Q. In terms of positional asphyxia, what hindrance does
12 that give to the normal flow of oxygen around the body?
13 A. If you are in a particular position where you maybe
14 can't breathe properly, so you can't get the oxygen from
15 the air kind of into your mouth going into your airways
16 and into your lungs to be transferred around the rest of
17 the body, if there is something that is stopping that
18 from happening, for example if you are in a particular
19 position where your airway is compromised because it is
20 maybe the shape of your neck or the possession your neck
21 is maybe kinked slightly so the oxygen can't flow
22 properly through because there is maybe a blockage
23 because of the shape of your airways, or if your mouth
24 is covered or your nostrils are covered and you are not
25 able to take in the required oxygen, you can also -- if

1 you're in a particular position and your neck is at
2 an odd position, you may be kinking the blood vessels
3 that are taking blood up to the neck and bringing blood
4 back from the neck as well, which is another mechanism
5 of a positional asphyxia-type pattern.
6 Q. We heard evidence last year from an officer who
7 described someone slumped in the back of a police car,
8 and that position caused the person to have issues and
9 positional asphyxiation; would that be a recognised way
10 if someone is lying slumped and not breathing
11 efficiently?
12 A. Potentially, yes. Often in those types of cases there
13 is also the problem of drugs being on board which can
14 effect how you manage your own airway and also put you
15 into that sort of position because you are unaware. But
16 yes, that is a perfectly reasonable explanation, if they
17 are a particular position that is affecting their airway
18 they could have had a degree of positional asphyxia.
19 Q. Obviously as part of the Inquiry we have been gathering
20 in a lot of documents, and witness statements and I just
21 want to ask you for your comment on this. One person
22 has suggested that positional asphyxia is junk science,
23 that is a phrase that is used. Do you have any comment
24 about that?
25 A. I would completely disagree. There is a lot of

1 literature out there about positional asphyxia, I have
2 seen cases myself of positional asphyxia, and it makes
3 perfect sense from a medical point of view as to why it
4 may happen.
5 Q. Is that the explanation that you have given today, this
6 perfect sense that you talk about?
7 A. Yes.
8 Q. In terms of mechanical asphyxia, can you remind us what
9 does that interfere with in terms of the normal flow of
10 oxygen around the body?
11 A. It tends to be when there is something or an object
12 stopping the normal breathing process, so typically
13 maybe an object on the chest, where you -- when you
14 breathe, if you take a breath in now you can feel your
15 rib cage expanding and that is your ribs and the muscles
16 in between there kind of relaxing and contracting, and
17 that's the first part of the breathing process, that has
18 to happen for the oxygen then to be taken in to the rest
19 of the system. So if you have something that is
20 impinging that or stopping that from happening, ie if
21 there is an object on your chest, and you can't actually
22 physically breathe, so you can't get the same breaths
23 in, then you are not able to take the same amount
24 of breaths and the amount of oxygen in that you would do
25 normally and that is kind of a classical mechanical

1 asphyxia.
2 Q. So something that prevents your chest or rib cage
3 expanding and contracting in the normal way?
4 A. Yes.
5 Q. Right. Thank you. Before the break I said that we
6 would get WIT 00003 for you, this was the briefing note
7 just to let you have a quick look at that. And I think
8 you should now have been given a copy of that. Is that
9 the briefing note you were given prior to the
10 post mortem?
11 A. Yes, it is.
12 Q. You will see it is three pages and it prepares
13 a history, it says at the beginning:
14 "... to be updated by PIRC."
15 A. (Witness nods).
16 Q. And then there is a medical history and it details the
17 circumstances ie the locus of death and the
18 circumstances of death and there are three pages
19 detailing those?
20 A. Yes.
21 Q. On the final page, around a third of the way down, it
22 talks about:
23 "The deceased engaged with the officers and
24 a physical confrontation ensued. This resulted in the
25 deceased being restrained to the ground, handcuffed and

1 leg restraints were applied."
2 A. Yes.
3 Q. So certainly this briefing note did give you information
4 about the use of handcuffs and leg restraints. And you
5 said that you incorporated that into your examination in
6 the post mortem?
7 A. Yes.
8 Q. The next paragraph after that talks about:
9 "During the restraint to the ground he became
10 unresponsive and CPR was commenced."
11 So you were aware that CPR and resuscitation had
12 been part of that process?
13 A. Yes.
14 Q. But again there was no mention there of baton or sprays
15 at that time. I think in your statement you have
16 indicated that that would probably have come from
17 a verbal or a discussion --
18 A. Uh-huh.
19 Q. -- with PIRC and the police officer before the
20 post mortem?
21 A. Yes, I was definitely aware of it.
22 Q. That is lovely, thank you.
23 I would like to move back on to your provisional
24 report, please, so if we can go back to that and have
25 that on the screen. That is PIRC 01444. I think we

1 were about to move on to page 3 if that is possible. So
2 we had gone through the initial process. We have come
3 to the external findings but if we stay on that page,
4 please. Just move further up. Thank you. So you have
5 talked to us about the external findings, I had asked
6 you about the petechial haemorrhages and you gave us
7 an explanation about that. Then do we see that you went
8 on to the section on scars?
9 A. Yes.
10 Q. And you have -- you said previously that you were very
11 detailed, so actually you have detailed 14 potential
12 scars and as part of your report, we are now moving on
13 to page 4. Can we just stay there for a second. Then
14 we see signs of medical intervention, we see that on the
15 screen and that is on page 4. You have four things
16 here. Is this where you note things like injection
17 sites and that type of thing?
18 A. Yes.
19 Q. So your examination covers, as you said earlier, even
20 very small things that you can see --
21 A. Yes.
22 Q. -- on the body. You will see the first one:
23 "Over the back of the right hand, a needle puncture
24 mark and this was associated with swelling of the hand."
25 A. Yes.

1 Q. That is through medical intervention?
2 A. Yes.
3 Q. How is it you decide that something is through medical
4 intervention as opposed to some other cause?
5 A. The signs of medical intervention are normally fairly
6 obvious, especially when it comes to needle puncture
7 marks. There are specific sites that medics will use
8 when trying to resuscitate patients or when trying to
9 take blood from them as well, so often we will see marks
10 on the back of the hand as they have tried to cannulate
11 and often because it has been done in such a dynamic
12 situation they will puncture the vein so there will be
13 a reasonable amount of bruising or there will be
14 swelling associated with that. The crease of the elbows
15 and the kind of front of the elbow are quite common
16 places that medics will try and get access kind of
17 during resuscitation, and the neck, places like this if
18 they put in larger lines. So there are very specific
19 places that I know as a medic, and having done emergency
20 medicine in the past, as to where you need to look.
21 They are very specific in how they actually look as well
22 as opposed to other injuries that we may see that are --
23 kind of specifically have occurred prior to the
24 resuscitation.
25 Q. Can I ask you before we look at the injuries which is

1 the next section on page 4, can you explain -- you talk
2 about head and neck and trunk and right arm, left arm,
3 we will go through those in a moment but the
4 introductory paragraphs on the external findings
5 detailed the petechial haemorrhages and I am wondering
6 if you can explain why there is not a separate section
7 in the head and neck or perhaps eyes where you note
8 those? Why are they at the preliminary part of this
9 section?
10 A. Because they are one of the first things that we are
11 looking for and one of the first things that we are
12 documenting and they are documented in the external
13 part. We are not looking at them specifically with
14 regards to the injuries, so we don't differentiate them
15 out. Occasionally on post mortem reports if they are
16 very florid and there are lots of other things to notice
17 in the eye I will do a separate maybe eye examination
18 and I will document them separately, but in the vast
19 majority of cases they are included under the initial
20 external examination when we are looking at eye colour
21 and things like that.
22 Q. So are they not viewed as injuries in terms of that
23 section --
24 A. Yes, they are not a specific injury, they are a response
25 to something. They are not actually a specific injury

1 that has been sustained, yes. So they are not -- hence
2 why they are not under injuries.
3 Q. So they viewed as a distinct aspect of your examination
4 compared to actual injuries?
5 A. Yes. Yes.
6 Q. What would injuries be then?
7 A. So there are two different types of injuries, there are
8 blunt-force injuries and there are sharp-force injuries.
9 Blunt-force injuries are broken down into three
10 different main types from the kind of simplest to the
11 more complex. So the simplest blunt-force injury --
12 sorry, I should say blunt-force injuries are sustained
13 from an impact of some sort, so something has come into
14 contact with the skin, be it -- it could be an object,
15 it could be the ground, it could be a wall, it could be
16 a fist, it could be a foot, but something solid has come
17 into contact with the skin and that makes it
18 blunt-force. So abrasions are the simplest type of
19 blunt-force injury, and they are just basically scrapes
20 or scratches to all intents and purposes, that is
21 the simple term for them, a scratch, where they are
22 very, very superficial so it's just the very, very top
23 layer of the skin, the epidermis, and that part of the
24 skin is not very vascular, there is not a lot of blood
25 vessels there, so abrasions -- and you will all have

1 noticed if you have scratched yourself, it tends not to
2 bleed because it is so superficial, it is just kind of
3 there at the very tip of the skin surface.
4 So that is the most minor of blunt force injuries,
5 then you have bruises. Everyone will have bruised
6 themself at some point. Again, another blunt-force
7 impact so something has come into contact with the skin
8 and when it is pushed against the skin the blood vessels
9 that are underneath the surface of the skin burst. So
10 this is kind of just slightly worse than abrasions and
11 because these blood vessels have ruptured, the blood has
12 leaked out into the tissues that are underlying the skin
13 and that is why you see kind of redness or purpleness
14 when you bruise yourself that will go through various
15 stages of colouring as it heals and then just disappears
16 and won't leave anything in its wake. The same for an
17 abrasion, it won't leave anything, it will heal
18 perfectly normal, shouldn't scar.
19 Then the third type of blunt-force injuries are
20 lacerations, so they are tears of the skin, so when
21 something presses against the skin it basically twists
22 the skin and rips the skin apart. Again, they can be
23 different degrees of severity, you can have a very
24 superficial laceration which is just involving the top
25 layer of the skin right down to full thickness where you

1 are going through all of the layers of the skin and
2 potentially if it has been a significant blunt-force
3 impact you can damage underlying structures like bone,
4 so potentially if you had -- a common place is on the
5 scalp because the skin is quite thin there and the bone
6 is quite close to the surface so if you have something
7 hitting against the scalp, the skin tears. If the
8 impact has been heavy enough you can get a fracture of
9 your skull so it gives us a different way of
10 interpreting how much force has been used in the impacts
11 that have been sustained.
12 So those are the three types of blunt-force
13 injuries. Then we have sharp-force injuries, and they
14 are sustained, as you would imagine, with a sharp
15 object, so commonly with knives we would see that,
16 a stab wound is a sharp-force injury. It is when
17 an implement that is used cleanly cuts through the
18 tissues, so it is not this blunt-force where there is
19 twisting and scraping, it clearly cuts through the
20 tissues and anything else kind of underlying that.
21 And the wounds look very different. With
22 blunt-force injuries you can often have a combination so
23 in one blunt-force injury I may see abrasions, bruises
24 and lacerations, because they all have a similar
25 mechanism, whereas it would be rare to see a blunt-force

1 injury around sharp-force injury, you tend to see kind
2 of relatively nicely cut skin, very -- a clean-cut wound
3 rather than a very irregular wound that you would get
4 when it's blunt-force, so those are the kind of two big
5 categories that we differentiate when we are describing
6 wounds.
7 Q. You distinguish between those categories when you are
8 doing your examination?
9 A. We do, as much as we possibly can. There are
10 occasionally wounds where it is very difficult to
11 differentiate. In those cases we will be very
12 descriptive rather than specifically saying it is
13 a laceration or a -- even with -- occasionally with
14 abrasions and bruises it can be difficult to
15 differentiate. But as much as we possibly can,
16 absolutely, we will state exactly what kind of injury
17 each thing is that we are finding.
18 Q. Both these categories, blunt-force injury and
19 sharp-force injury, use the word "force" in there and
20 you suggest these assist you in interpreting the force.
21 To assist the Chair, I am wondering if you can help him
22 understand how the different types of injury assist in
23 interpreting the level of force used?
24 A. As I said abrasion and bruising is -- abrasion
25 specifically is kind of at the other level of very, very

1 minor force. Bruising you can -- underlying bruises you
2 can see fractures, you can see injury to underlying
3 tissues, and if that is the case then we are looking at
4 a higher degree of force so kind of force is -- we tend
5 to measure it as mild, moderate to severe on a scale,
6 and obviously mild being the least, severe being the
7 most, and if you have for example someone who has
8 a large laceration on their head with an underlying
9 skull fracture then I would be putting that up towards
10 severe force has been used because the skull is quite
11 a thick bone and it takes a reasonable amount of force,
12 again with the caveat that it depends on what weapon has
13 been used, it would be -- less force would be required
14 if someone is using a heavy hammer to fracture the skull
15 as opposed to something that is lighter.
16 So that is -- there are lots of caveats when we are
17 talking about force. But to all intents and purposes it
18 really depends on what has been damaged, in terms of
19 bones and in terms of organs as to where we would put
20 the degree of force underlying, and the main thing we
21 use it for, to be fair, is sharp-force injuries so if
22 someone has been stabbed and they have -- say someone
23 has been stabbed through the chest and it is has gone
24 directly through their intercostal muscle, which is the
25 little muscle between the ribs, and it has gone through

1 the heart, it doesn't actually require a huge amount
2 of force to do that, the most difficult thing to get
3 through is probably the skin, that is the kind of
4 firmest because you are just going through muscle and
5 soft tissue. Again, with the caveat it will depend on
6 how sharp is the blade, what type of blade has been used
7 but if you have someone who has been stabbed and they've
8 gone directly through the sternum and then managed to
9 penetrate the heart then that is severe force because
10 the sternum is a big, thick very, very hard bone, and to
11 get a knife all the way through it would be really,
12 really difficult, so severe force has been used.
13 Those are kind of the parameters we use and it very
14 much depends on what has been damaged and what has been
15 injured underlying the external injury that you are
16 describing.
17 Q. We will come on to this later but we will hear evidence
18 about a possible fracture to the first left rib. Can
19 you assist the Chair in understanding the level of force
20 that would be required to fracture that rib?
21 A. It is much more difficult to fracture that rib than it
22 is any other rib because it is hidden way behind the
23 clavicle kind of in the shoulder girdle, there's lots of
24 muscles around there. Fracturing of the actual rib cage
25 is not actually that difficult and if there were rib

1 fractures involved I would be kind of looking between
2 mild to moderate force normally but because this rib is
3 really well hidden -- we very, very rarely see fractures
4 of these ribs -- then I would suggest that kind of more
5 force would be required so we would be kind of moderate
6 going up towards the severe end of the spectrum even
7 though it is a rib, just because of where it is and how
8 much it is hidden and protected.
9 Q. Thank you. If a rib is fractured during some other --
10 if a rib is fractured in the rib cage, say 4 to 6, that
11 would require less force to fracture a rib there?
12 A. Yes. Uh-huh.
13 Q. Thank you. Just to return then to the external
14 findings, before we move on to the specific injuries, we
15 were talking about the petechial haemorrhages, and you
16 said these aren't categorised as injuries as such. Can
17 you provide an explanation of what can cause these
18 petechial haemorrhages? I am interested in particular
19 in relation to Mr Bayoh.
20 A. Yes. So there are several reasons with Mr Bayoh, we
21 have to consider his position, we have to consider, with
22 the information that we were given, how he was
23 restrained in terms of him being face down, kind of
24 chest down, there could have been a degree of positional
25 asphyxia as to how he was, so I think that is one of

1 the things we have to consider.
2 We also have to consider the mechanical side of
3 things as well, and I spoke about pressure being on the
4 chest, and we were given information about pressure
5 being put on his back with kind of knees, or police
6 officers on his back so that could have impeded his
7 breathing.
8 The third thing to consider is that he was
9 resuscitated quite extensively, and as I have said
10 previously the commonest cause that I see for petechial
11 haemorrhages is resuscitation, so that is another kind
12 of third factor as well so I think all of these things
13 have to be considered.
14 Q. So for the Chair, when he comes to consider the evidence
15 that he has heard about the circumstances, you would
16 recommend that he consider the position that Mr Bayoh
17 was in?
18 A. Yes.
19 Q. And would that be the position shortly prior to
20 a significant event like he is unconscious or not
21 breathing or is it just generally his position during
22 the whole restraint?
23 A. Generally his position but more so in the lead up to him
24 having a cardiac arrest because something has obviously
25 happened in that period, in that timescale, so that

1 would be the important part to look at, yes.
2 Q. You mentioned him being prone or chest down. Again, can
3 you explain to the Chair quite simply how that impedes
4 the breathing?
5 A. So if you are prone or kind of lying down on your front
6 with your neck kind of slightly extended, it is much
7 more difficult to breathe properly. There could also be
8 a degree of the mouth or nose being obstructed if you're
9 lying face down potentially against a surface, so it's
10 the air is not able to get in the way it normally would
11 do.
12 Q. If you're face down but your face is not directly down
13 but maybe to the side, does that make it better
14 easier --
15 A. Again, if your neck is slightly altered in position as
16 well, and your throat is down, the top of your chest is
17 down it can all impede the oxygen actually being taken
18 in, in the first place.
19 Q. So if your head is to the side, can that also impede?
20 A. It could do, yes, because you are altering how your
21 airway is kind of moving in your neck.
22 Q. If you are on your side, could that cause any issues
23 with breathing in oxygen?
24 A. It would depend on how the rest of your body is. If you
25 were kind of lying on your side then potentially not.

1 Q. We have heard some evidence about perhaps Mr Bayoh being
2 on his back. So in terms of positional asphyxia would
3 there be any issue if someone is lying on the pavement
4 on their back? Would that cause any difficulty?
5 A. It shouldn't do if his airway is protected. It
6 shouldn't do if you are lying on your back, you should
7 be able to breathe and get air in reasonably well. If
8 there is nothing kind of obstructing.
9 Q. It may have been suggested that that would prevent the
10 back of your body and your lungs from expanding slightly
11 even if you are on your back.
12 A. If you are just lying on your back and there is
13 nobody -- I mean, if you had something on you or someone
14 on you then potentially, but if you are just lying on
15 your back with nobody altering what you are doing or
16 altering your breathing I don't see how that would
17 impair your airway.
18 Q. So it would depend on the particular circumstances
19 whatever the Chair considers?
20 A. Yes.
21 Q. In then the second element you talked there about
22 mechanical pressure on chest or back could impede your
23 breathing. Can you give the Chair a little bit more
24 assistance in understanding that factor and the
25 importance of that?

1 A. So anything that is pressing down on the chest, either
2 front or on the back because your rib cage goes all the
3 way around, it is not just at the front, it's kind of
4 a cage if you like. So if there is something on your
5 back pressing against your rib cage or on your front
6 then you are not able to breathe, you are not able to
7 expand your lungs the way you would normally, so you are
8 not able to take in oxygen the way you would normally.
9 That is -- hence the mechanical, because there is
10 something, there is an object of some sort impeding you
11 from being able to breathe properly.
12 Q. What sort of things could be that object that would
13 cause that restriction in the expansion of the lungs?
14 A. Anything that is heavy on the chest. In this case
15 reports of people kneeling on the chest or a person
16 holding -- even just holding down, not necessarily even
17 being on, if someone is -- if you're kind of on your
18 front and someone is holding you down to restrain, then
19 it is going to impede you from being able to breathe.
20 Similarly if you were the other way and they were
21 holding you down at the chest area it would impede you
22 being able to expand your lungs.
23 Q. So could that be weight being placed --
24 A. Anything that causes a weight to press against the chest
25 or the back. Be it an object, be it someone. Be it

1 potentially the ground if there is someone -- or if
2 there is something at the other side.
3 Q. Or pressure being applied?
4 A. Yes.
5 Q. Is there any way to assess that level of weight -- in
6 terms of pathologically, is there any way for you to
7 assess significant compression or ...?
8 A. It is really difficult. Again, we can look at external
9 findings, so we can look at bruising, we can look at
10 abrasions, we can look at laceration because again
11 anything that is on is potentially a blunt object. So
12 we can look at external injuries, we can look
13 internally, so we can look at any bruising in the
14 subcutaneous tissues underlying the back or on the
15 chest, we can look for fractures of the ribs, we can
16 look for damage to underlying structures, and we do, we
17 look for all of that to see what there is to support
18 a particular scenario.
19 Q. In this particular case were there any significant signs
20 that you noticed in your examination that were
21 indicative of weight being applied or pressure being
22 applied?
23 A. There wasn't anything that was categorically indicative.
24 I would have to look at my notes but we looked at the
25 back and there was some subcutaneous haemorrhage

1 underlying the skin of the back, so that suggested kind
2 of blunt force had been applied to that. I can't
3 categorically say what that form of blunt force took
4 place as but if it is postulated to me could this be in
5 keeping with someone pressing down, then yes it could.
6 Q. We will come on to the individual injuries in a moment.
7 Thank you. Let's move on in the report that we have
8 here, again this is your preliminary initial report, and
9 we see that on the "Injuries" section, so if we can move
10 down, it says:
11 "A provisional description of the injuries is being
12 described prior to receipt of the post mortem
13 photographs."
14 Tell us why that is there?
15 A. Normally when I do my provisional report I prefer to do
16 it with the post mortem photos, so normally I correlate
17 my description that I have done in the post mortem room
18 with my post mortem photos. Here I was asked to provide
19 my provisional report as quickly as I possibly could,
20 and for that reason I hadn't access to the post mortem
21 photos to be able to correlate. So that is why I have
22 put the caveat, to make sure it's clear to the reader
23 that this has come from my descriptions in the
24 post mortem room that would have been scribed by
25 Dr Bouhaidar but I hadn't had the opportunity to compare

1 that to the photographs. Because sometimes I may change
2 a measurement or something if I look at a scaled photo
3 and think I have underestimated that, so just little
4 bits and pieces. So that would be my normal practice in
5 a suspicious case but because I was asked to do this as
6 quickly as possible I didn't have that opportunity.
7 Q. Who asked you to do it as quickly as possible?
8 A. The Procurator Fiscal.
9 Q. Thank you. Let's move on to head and neck. You have
10 ten injuries noted here. We could only see one page at
11 the moment which is 1 to 4 and the first one relates to
12 the forehead, the second to the eyebrow and then I think
13 after that they all relate to the mouth area. Let's
14 look at the forehead first of all if we may. What is
15 the first injury you have noted there?
16 A. "Over the left forehead its upper end 1 cm front of the
17 hairline an inner end 3 cm to the left of the
18 mid-line~..."
19 So kind of over the front of the left side of the
20 head:
21 "... an irregular abrasion measuring 3.5 cm across
22 x 3.5 cm up/down."
23 So an abrasion being, as I said, the kind of
24 simplest, a scratch. But often I will describe
25 abrasions depending on how I think they may have been

1 caused ie you can get a scratch abrasion where it is
2 obviously something has scratched along the skin but in
3 this case it was irregular just because it looked
4 a little bit ragged so that is why I have given that
5 description but to all intents and purposes it is
6 a scrape across the front of the forehead.
7 Q. Before we go through all of the details can I just come
8 away from this for a second. You have very helpfully
9 prepared a glossary of all the terms that you are using
10 haven't you? Can we look at WIT 00041. You may have
11 a hard copy of this. This is to assist the Chair when
12 he comes to reflect on your evidence and your report.
13 Does this contain a number of definitions of the words,
14 the language you use?
15 A. It does.
16 Q. Thank you. Let's go back to page 4. So we were just
17 talking about the forehead. The first injury that you
18 have noted on head and neck. Can you explain how
19 an irregular abrasion such as the one we see here is
20 caused on the skin?
21 A. So it's a blunt-force injury so it's impact with
22 something blunt. It could be an object, could be the
23 ground, so something has come into contact with the skin
24 and basically scraped across the skin.
25 Q. So if someone was face down or with their head to one

1 side, is that the type of contact?
2 A. Yes.
3 Q. Or if someone was struck with a baton, could it be that
4 type of contact?
5 A. That would be unusual. That would tend to be bruising
6 with a laceration and potentially a fracture underneath
7 as well. But abrasions are more scrapes, more in
8 keeping with kind of contact with an irregular surface
9 like the ground.
10 Q. Thank you. Then we look at the second injury, what do
11 you note there?
12 A. So:
13 "0.5 cm in front of [the first injury], directly
14 above the outer half of the left eyebrow, an abrasion
15 measuring 3 cm ... by 2 cm~..."
16 Q. Can you point to your own eyebrow and show us?
17 A. Just kind of above the middle part. (Indicating).
18 Q. The same sort of area you were describing before?
19 A. Yes.
20 Q. You have described that as an abrasion, is that -- you
21 don't use the word "irregular" there, does that make
22 a difference to the possible causes?
23 A. Not in particular. Most abrasions will just be
24 described as abrasions unless there is a difference. As
25 I say I use "scratch abrasions" sometimes but it doesn't

1 correlate to anything else specifically.
2 Q. Then you move on to the remaining injuries which relate
3 to the mouth. I wonder if you could go through these
4 injuries and explain to us what you found on your
5 examination?
6 A. So within the upper mouth at the border of the upper lip
7 and mucosa, so if you just turn your upper lip inside
8 out your lip ends and you get the kind of darker kind of
9 fluidy bit of your mouth and that is your mouth mucosa,
10 and there there was a very superficial -- so, as
11 I explained previously at just the surface of the
12 mucosa, it means it is very, very superficial, it hasn't
13 gone further through other layers of the tissue. And
14 this is a laceration which was S-shaped, 1.2 cm. So
15 S -- just to give you an idea of how it looked on the
16 mucosa, a laceration being a blunt-force injury so
17 something has come into contact with that mucosa and
18 caused a twisting for it to tear very superficially.
19 Q. When you say something has come into contact, can you
20 help us understand what that could be?
21 A. It could be blows with something, with an object. It
22 could be with the ground. It could be related to him,
23 his tooth, we often see if people have injuries to their
24 mouth, if they have kind of bitten down sometimes they
25 bite through their mucosa of the inner part of their

1 mouth and it can cause a small laceration. It could be
2 related to medical intervention, we often see if people
3 have had quite extensive resuscitation and been
4 intubated, which was the case here -- intubation is
5 where the medic or the ambulance personnel have to put
6 a tube into the mouth in order to help with breathing.
7 So you can sometimes see injuries to the mouth because
8 of that. So there are a number of reasons that these
9 could have happened.
10 Q. For the Chair is there anything he could look for which
11 would assist him in deciding which was the possible of
12 all these causes?
13 A. Not -- not in particular. To be fair, I think if you
14 take it in the context with the other injuries, and
15 there's quite a few injuries affecting the mouth, as
16 number 4 in the right upper lip there is up to 7
17 superficial lacerations, so again 7 kind of very closely
18 orientated little kind of tears in the skin, the longest
19 being about 1 cm. When you start to see lots of
20 injuries in the mouth it makes me less inclined to think
21 it is because of resuscitation, and more inclined to say
22 that it is because of blunt-force trauma to that rather
23 than from being -- intubation being the issue.
24 So you can't say for definite but it kind of pulls
25 me away from that and towards is it blunt-force trauma,

1 have they had blows to the mouth, have they had -- with
2 an implement/fists, have they come into contact with the
3 ground or other blunt-force area.
4 Q. You have said you would move away from medical
5 intervention or intubation as you have said. What are
6 the specific factors that cause you to move away from
7 that?
8 A. I think because there is so much of it. I see a lot of
9 injuries from medical intervention so this is my own
10 practice and my own experience and I -- in those cases
11 I don't tend to see as much injury as what I saw in this
12 case. So that is what would make me think at the time
13 we are maybe looking more blunt-force than actual
14 medical intervention. So it is very much
15 experience-based, I have seen thousands of cases of
16 people who have been intubated and been managed by
17 paramedics and by hospital staff and you don't tend to
18 see them with this many injuries in terms of those being
19 sustained while a tube is being put down the throat.
20 Q. You mentioned one of the possible causes could be
21 contact with the ground. In what way would contact with
22 the ground cause these types of injuries?
23 A. If the face is against the ground, against a hard
24 surface and kind of moving you can get -- it basically
25 pulls at the skin and can tear the skin. So that is

1 a possibility.
2 Q. We have also heard evidence last year not simply about
3 the medical intervention in the hospital, the intubation
4 and that type of thing, but we also heard evidence about
5 something called a one-way valve face shield and that
6 officers had initially attempted to use this shield at
7 the scene but they had experienced difficulties in using
8 that. Let me just read out some of the evidence that --
9 it will be a matter for the Chair but I will read out
10 some of the evidence that we have heard about this.
11 This was on 21 June last year. That an officer had
12 taken out his valve, one-way valve, he was trying to get
13 the face valve into Mr Bayoh's mouth:
14 "... but his teeth were gritted shut, so I tried my
15 best by putting my fingers in and pulling it open. That
16 probably accounts for quite a lot of the scratches and
17 what you have around about the boy's gums and I couldnae
18 get it to go in. I done the best we could and then
19 another officer had tried to get a couple of breaths in
20 but it was leaking around the sides and then he was
21 getting contaminated."
22 So his teeth were gritted shut, he couldn't get the
23 valve to go in, he was trying, and he was putting his
24 fingers in and trying to pull down his jaw and separate
25 his teeth and get between his teeth.

1 So that is a description that has been given by
2 a witness. I wonder if you could comment on that as
3 a possible cause for any of these injuries?
4 A. It sounds plausible. If they have had difficulty and
5 they have had hands in the mouth moving around with
6 nails and things like that and pulling, because
7 blunt-force is tearing, so potentially if there's
8 movement of the head at the same time as they are doing
9 things inside the mouth I can't see why that couldn't
10 potentially be a cause of causing such injuries within
11 the mouth.
12 Q. So there's the contact with the ground, possible medical
13 intervention, which you are less inclined towards, or
14 this possible use of the one-way valve face shield; they
15 would both be consistent would they, with the type of
16 injuries?
17 A. I would say so, yes, given what they have described that
18 they've done, that would be consistent with causing at
19 least some of these injuries.
20 Q. As would contact with the ground?
21 A. Yes.
22 Q. Thank you. Is there anything between those two possible
23 causes which would distinguish them which the Chair
24 could look out for when he considering the evidence?
25 A. I think because a lot of the findings are within the

1 mouth there is not a lot kind of around the mouth or any
2 kind of I suppose visible part that you would see if
3 someone was just standing, so in terms of being on the
4 ground, the mechanism to get problems internally would
5 probably mean that the lips would have to be squashed
6 against the ground to a certain degree and the mouth
7 would have to be kind of open slightly in order to
8 expose the inner part, which would be a bit more
9 difficult to do but not outwith the realms of
10 possibility. So if what they are describing is actually
11 putting hands into his mouth, pulling and things like
12 that, and with great difficulty, then that is probably
13 more of a reasonable explanation as to what you are
14 seeing internally.
15 Q. So an important factor is the actual location of these
16 mouth injuries that you have noticed?
17 A. Yes.
18 Q. And you have detailed those in this section of your
19 report?
20 A. Yes.
21 Q. Thank you. If we can move on to the trunk please.
22 Sorry, I should have asked you one last question in
23 relation to the head and face. Did you see any injuries
24 in your examination that may be consistent with a slap
25 to the face?

1 A. So the ... all of the injuries described are
2 predominantly lacerations which wouldn't be caused by
3 a slap. A slap to the face wouldn't necessarily leave
4 an injury, to be fair, but a slap to the face would tend
5 to cause bruising and quite extensive bruising if you
6 have the whole kind of palm of the hand. So there is
7 certainly nothing specific that I saw that would relate
8 to that.
9 Q. Is there anything noted in this section that would
10 assist the Chair in assessing the level of force used
11 and required to cause any of these injuries?
12 A. Everything is down at the minor end here. They are kind
13 of superficial lacerations, there's tears, there is no
14 underlying injury to the facial bones -- which we will
15 probably come on to later -- so there is nothing to
16 suggest significant force has been required to sustain
17 any of these injuries.
18 Q. Thank you. Let's move now on to the trunk. You have
19 one injury noted here. Could you tell the Chair what
20 this is?
21 A. "Over the right mid-chest from the mid-line its upper
22 end 8 cm below the right clavicular head~..."
23 Your clavicle is just the bone that sticks out at
24 the top of the chest here, so just slightly further on
25 down there is:

1 "... patchy irregular abrasion measuring 8 cm
2 up/down x 5 cm across comprising numerous intermittent
3 abrasions, the largest 1.5 cm x 0.1 cm, and the smallest
4 0.1~..."
5 So this is just a reasonable sized area of scratches
6 that -- intermittent is -- tends to be seen when
7 something is scraping along something, so you get
8 a scratch, nothing, a scratch, nothing, and we do tend
9 to see that if -- in scratch abrasions, or more
10 specifically in people who have been on the ground and
11 maybe moved across the ground, their skin has moved
12 across so the irregularity of the ground surface has
13 scratched and then they come to a part of the ground
14 that is not against the skin, and then come to another
15 part, so you get a scratch, a space, a scratch a space,
16 and that is kind of what was here.
17 Q. Was the injury that you saw on the trunk consistent with
18 that type of injury where someone has been on the ground
19 and their skin has moved along?
20 A. Yes.
21 Q. Can that occur when someone is clothed?
22 A. It can do, yes.
23 Q. So if someone had even just a T-shirt on, is that the
24 type of thing --
25 A. Yes, you can still -- you might see some dirt on the

1 T-shirt, you might see an injury to the T-shirt, but yes
2 you can get such injuries through clothing.
3 Q. Thank you. Is there any other possible cause of that
4 type of injury in that location other than what you have
5 described about moving across the ground?
6 A. Nothing specifically. At the end of the day it is
7 a scratch abrasion, it's at the kind of minor end of the
8 blunt-force injuries and blunt-force injuries, as I have
9 said, can be caused by a number of different things, it
10 is not specific but just the pattern of this would be
11 more in keeping with him being on the ground and it
12 occurring secondary to the ground.
13 Q. This is the only injury that you have noted on the
14 trunk. Can I be clear, what area do you mean when you
15 say the trunk?
16 A. The trunk is from the neck to the pelvis, front and
17 back.
18 Q. So were there no other injuries that you noted?
19 A. No.
20 Q. No injuries to the left side of the chest?
21 A. No. The caveat with that is that people with dark skin
22 it can be really difficult to see injuries, specifically
23 bruises, scrapes are a bit easier, and that is one of
24 the reasons that we have to look internally, we have to
25 look underneath the skin to make sure there is nothing

1 that we are missing. Because they -- it can be
2 notoriously difficult, because of the colour of the
3 skin, to be absolutely sure that that is definitely
4 a bruise and it is not just the contour or colour of the
5 skin.
6 Q. Is that something that you bore in mind when you were
7 carrying out your examination?
8 A. Yes.
9 Q. We mentioned earlier and we will come back to the left
10 first rib; is that part of the trunk that you are
11 talking about or is it a different area?
12 A. It is an internal examination of the head -- well,
13 chest, it would have been an internal examination of the
14 chest, it wouldn't be --
15 Q. Not part of the --
16 A. -- taken into with the external examination of the
17 trunk, no.
18 Q. Were there any injuries you noticed in the vicinity of
19 where the left first rib would be; would that be noted
20 in the trunk area?
21 A. In the external examination it would be noted in the
22 trunk area, and certainly on the skin there was nothing
23 obvious.
24 Q. So over, around, in the vicinity of that left first rib
25 nothing obvious on the actual skin externally?

1 A. Yes.
2 Q. Were you looking in that area as part of your
3 examination of the trunk?
4 A. Yes.
5 Q. Thank you. Let's move on to the next section, right
6 arm. So again one injury noted here, tell us about this
7 injury?
8 A. So over the back of the hand just proximal to the
9 knuckle of the little finger, so (indicates) just in
10 front or below the knuckle of the little finger, there
11 was a very superficial flapped laceration measuring half
12 a centimetre by 0.5 cm so this is a laceration so there
13 has been tearing of the skin, as I have described it's
14 superficial so just the top layer of the skin, but
15 flapped is when you still have the skin there. Often in
16 lacerations you just get a splitting of the skin so you
17 just see an injury.
18 Occasionally when they are flapped it just means
19 that it shows you the direction of the force that has
20 come on to the superficial part of the skin and it has
21 kind of almost undercut the skin and leaves the flap of
22 the skin, so if you popped it back down again it would
23 kind of go back into its normal position. Whereas the
24 vast majority of lacerations tend to just be a mark
25 through the skin directly and the skin opens up, but

1 occasionally you do get these flapped areas which just
2 show us the direction that the injury has kind of
3 happened.
4 Q. Looking at that injury what are the possible causes of
5 that abrasion, the flapped laceration sorry?
6 A. Potentially it has been when he has been on the ground,
7 and if he has -- the finger has gone against the surface
8 of the ground. Potentially if he has -- we often see
9 injuries on the back of the hands in a defensive-type
10 pattern if someone has put their hands up to defend
11 themselves and impact has been sustained to the back of
12 the hand, we often see bruises and things in those sorts
13 of scenarios but that is something we always think of
14 when we have any sort of injuries on the upper limb as
15 a potential defensive-type injury. So it could be
16 a number of scenarios.
17 Q. You mentioned defensive injuries or putting someone's
18 hands up, can you explain to those listening what
19 a defensive injury is?
20 A. These are the types of injuries we see when someone is
21 basically trying to protect themselves, often it is in
22 the cases of people who are being attacked with a sharp
23 weapon, and they will put -- your kind of human nature
24 is to protect your face, protect the upper part of your
25 body so people with often put their hands up either

1 backwards or forwards and we can often see injuries to
2 the palms, to the backs of the hands and often the backs
3 of the arms as well. In terms of blunt-force injury, if
4 an assailant is using a blunt-force implement and
5 someone will automatically try and protect their head,
6 they will put arms up, you can often see bruises to the
7 front or the back of the hands and arms and lacerations
8 as well if a significant amount of force has been used.
9 Q. So in terms of the force used, you have said this is
10 a laceration. Can you give an indication of the nature
11 of the force used here?
12 A. It would just be very mild, because it's a very
13 superficial laceration. It's just a tiny little area,
14 so I don't think it would have taken much for that to
15 happen. And it looks as if something's come across the
16 skin, the way it has flapped and I have said it has kind
17 of flapped to the left, which means the way it's kind of
18 been cut across, the flap opens up like this (indicates)
19 so something has just come along very superficially
20 under the surface of the skin to cause that injury. But
21 it wouldn't have required a great deal of force.
22 Q. If the Chair is considering evidence that he has heard
23 about the nature of the events at Hayfield Road, the
24 restraint, Mr Bayoh being on the ground, is there
25 anything in particular about this injury that would

1 assist the Chair in determining what is the possible
2 cause of this?
3 A. I think it is more likely to have happened on the ground
4 because that's all you really have. You've only got
5 that. We don't have any other injuries to the hand. We
6 don't have any other bruising to the hand. And
7 normally, if someone has put their hands up to defend
8 themselves, the bruising would be the mainstay of what
9 you would see. So I think it is probably more likely
10 that it has maybe happened when he has been on the
11 ground and he has just come in contact with an irregular
12 surface on the ground, especially with the flapping of
13 it as well, which would make that more likely I think.
14 Q. So no bruising is an important factor in determining --
15 A. Yes.
16 Q. -- the possible cause? Could it be consistent with
17 a punch having been thrown at some point?
18 A. With him having thrown a punch?
19 Q. Yes.
20 A. Potentially, if he has come into contact with a blunt --
21 some area then, yes, that would potentially be a cause.
22 Q. Are there any particular factors that make that a less
23 likely option or more likely?
24 A. Again lack of bruising, because we often see with those
25 sorts of scenarios, with the punches, you often see

1 bruising associated with that, and you can also see
2 fractures underlying that as well if the punch is thrown
3 with hard enough thought. So that would probably make
4 it less likely that again there's not the other factors
5 that are there, but it's a possibility.
6 Q. What about the application of handcuffs during
7 a struggle; could that potentially be a cause for
8 an injury to the hand?
9 A. Absolutely. Because the -- especially if it has been
10 done in a struggle, potentially if the handcuffs come up
11 towards the knuckle and kind of taken off -- because
12 they can be quite sharp in areas, handcuffs. So, yes,
13 that's a potential mechanism of it being caused as well.
14 Q. So possibly contact with the ground, possibly contact
15 with the metal handcuffs?
16 A. Yes.
17 Q. Thank you. Again, is there anything particular about
18 the nature of this injury for the Chair to look out for
19 in terms of deciding which of those possibilities is
20 maybe more likely?
21 A. I think the handcuff's probably more plausible than some
22 of the other scenarios, apart from being on the ground,
23 because you probably would be less likely to see
24 extensive bruising if there's just been a -- if it's
25 kind of passed on and taken the skin from the surface.

1 So it probably would be nearer the top of my list if
2 I had to list them in order of what I think is more
3 likely. But, again, in these sorts of scenarios it's
4 impossible to be definitive as to exactly what has
5 caused it.
6 Q. Obviously if you are looking at handcuffs, they are
7 generally metal, they are cleaner, whereas the ground
8 you may expect grit or dirt or whatever --
9 A. Yes, potentially.
10 Q. If it was the ground, would you expect to see signs of
11 grit or dirt or anything in the injury?
12 A. It's a possibility. Again, it depends on what the
13 contact has been with and how long it has been for. So
14 that is a possibility, if there's no grit or even
15 associated abrasion, that's often what you see with them
16 coming into contact with the ground; you see more
17 scrapes than lacerations. So that maybe would make it
18 less likely as well.
19 Q. And if you had found scrapes or abrasions or grit or
20 dirt, is that something you would have noted in relation
21 to that specific injury?
22 A. If I'd have found it, yes. The problem is that, from
23 a grit and dirt point of view, he has obviously gone
24 through various medical procedures in hospital, so
25 there's a possibility that anything like that had been

1 cleaned off. So just because it's not there doesn't
2 necessarily mean that it hasn't been there, but
3 certainly, when we do our external examination, we do
4 a "dirty" external examination, if you like, initially
5 and then clean; the body is thoroughly cleaned before we
6 have a much more detailed look. So I would always note
7 things like dirt staining, grit, if there had been
8 anything like that.
9 Q. Would that include grass staining?
10 A. Yes. Yes, any staining on the body at all, if it's
11 there it would be noted in the external examination and
12 should be photographed. Because we have -- we always
13 take photographs before the body is cleaned as well and
14 then we would clean the body thoroughly before we then
15 look for our injuries.
16 Q. So if there had been anything like that, that is
17 something you would have noted?
18 A. Yes.
19 Q. Thank you. Let's move on to the next area, which is the
20 left arm. There are seven items here. So they move on
21 to the next page, so it's injuries 13 up to 19. I would
22 like to take you through those injuries and ask you to
23 describe the different injuries that you discovered on
24 his left arm, please.
25 A. So over the back of the lower half of the upper arm --

1 Q. Can you show us where that area is?
2 A. The upper arm is from your kind of elbow to the shoulder
3 and your forearm is from your elbow kind of down to your
4 wrist. So in anatomical position this is the kind of
5 front of the arm and this is the back of the arm, is how
6 you kind of would stand anatomically. So over the
7 back of the -- would be the back of the arm, lower half
8 of the upper arm would be kind of just above the elbow
9 and there is an irregular abrasion measuring 8 cm
10 up/down by 5 cm across. So quite an extensive sized
11 scrape over the back of the arm, which again it's
12 blunt-force, could have been when he's on the ground and
13 he has kind of scraped against the ground as a potential
14 mechanism.
15 Q. So that would be contact with the back of his left arm
16 with the ground?
17 A. Yes.
18 Q. So if he had been on his left side for example, is that
19 the type of contact that --
20 A. Yes.
21 Q. And moving?
22 A. Yes, uh-huh. Uh-huh.
23 Q. You've described that injury, or those injuries, as
24 abrasions.
25 A. Yes.

1 Q. Again, in terms of the level of force, are you able to
2 give any assistance?
3 A. Again, they are just simple scrapes to the superficial
4 part of the skin. So just the kind of mildest force.
5 Q. And if someone was wearing a T-shirt with short sleeves,
6 was it in the area that would be beneath the sleeve of
7 the T-shirt?
8 A. Yes.
9 Q. So any contact would be skin to ground rather than
10 through clothing?
11 A. Yes.
12 Q. Would that make any difference to the nature of that
13 injury?
14 A. It can make it a bit more pronounced if you don't have
15 the kind of protective barrier of the clothes
16 in between. It can make it just a bit more raw looking
17 potentially.
18 Q. And is that something you would note in your
19 examination?
20 A. I would describe it if there was any other different
21 appearance that was kind of outwith what I normally
22 would do, and I haven't done.
23 Q. Then moving on to other areas of the left arm?
24 A. Over the ulnar aspect of the elbow, so the hand or the
25 arm is split into different sections depending on what

1 nerve supply the different sections, and the ulnar part
2 is the inner part with the little finger, ring finger
3 and half of the middle finger. So if you draw kind of a
4 line from that middle finger up the centre of your arm
5 everything on this side is ulnar and everything on this
6 is radial. So it's just a way of us describing
7 anatomically where things are, where we know exactly; if
8 we're asked, we can go back and say "it's just here".
9 So over the ulnar aspect of the elbow is just on the
10 inner part of the elbow here, and again it is another
11 irregular abrasion 4 cm by 2.5 cm, so a superficial
12 scrape that would be consistent with him -- being
13 sustained while he was on the ground and going against
14 a rough surface.
15 Q. Are there any other potential causes for the type of
16 injury that you are describing to the left arm?
17 A. Again it is blunt-force, so impact with an irregular
18 object is always a possibility, and impossible to kind
19 of differentiate.
20 Q. Then the next injury, number 15, over the front of the
21 middle third of the forearm?
22 A. So this is the front of the arm. We often separate into
23 kind of middle third, lower third and upper third, just
24 again to differentiate so we know exactly where the
25 injuries are, and this is on the middle part of the

1 forearm, another irregular abrasion 4 cm by 2.5 cm.
2 Q. How would that abrasion be caused on that aspect of the
3 arm?
4 A. Again it can just be scraping against -- that arm is
5 easily turned over, so just because it's on the front
6 doesn't necessarily mean that the front hasn't been in
7 contact with the ground. So it would be similar to the
8 other ones on the arm.
9 Q. And still superficial --
10 A. Yes.
11 Q. -- level of force? Then injury 16. Tell us about this
12 injury on the forearm?
13 A. Around the lower third of the forearm it is distal end
14 5 cm from the wrist, so lower third is the area that is
15 just above the wrist, probably for about maybe 7 cm or
16 8 cm. It is distal end 5 cm from the wrist tells me
17 that it's lower end, so the area that is closer to the
18 fingers is about 5 cm from the wrist, and there is this
19 band of brown discolouration extending over the back of
20 the arm and measuring 1.9 cm in maximum width. So
21 there's a -- width being -- so 5 cm up to about here and
22 then for almost 2 cm there's this band that is going
23 right round the back of the forearm.
24 Q. What would that be consistent with?
25 A. We're thinking about the handcuffs at that point.

1 That's kind of typical for a handcuff-type injury.
2 Again, because of the dark colour of the skin, it's --
3 what we would normally see would be bruising, but
4 because of the dark colour of the skin, what we are
5 seeing is bruising but having to describe it as a dark
6 band because the kind of prominent blue or red colour is
7 not kind of able to be seen on the skin. But we're
8 thinking handcuff injury for that.
9 Q. So in terms of the location and the nature of the injury
10 and the dimensions that you have given, is that
11 consistent with the application of the handcuff --
12 A. Yes.
13 Q. -- to that area with struggling or moving in relation to
14 that?
15 A. Yes. Yes, exactly.
16 MS GRAHAME: I wonder if that would be an appropriate
17 moment.
18 LORD BRACADALE: We will stop for lunch until 2 o'clock.
19 (1.01 pm)
20 (The short adjournment)
21 (2.00 pm)
22 LORD BRACADALE: Ms Grahame.
23 MS GRAHAME: Thank you. We were on page 6 of your
24 provisional report, and I would just like to finish the
25 last injury that you have noted on the left arm.

1 A. So --

2 Q. We will just get that on the screen. Over on to the

3 next page, number 19, please:

4 "Over the back of the proximal phalanx of the index

5 finger~..."

6 That one.

7 A. "Over the back of the proximal phalanx of the index

8 finger~..."

9 So the index finger is your forefinger, the finger

10 is made up of three different small bones, the three

11 different phalanxes, you can see -- if you can see the

12 lines on the joint of your finger, in between each of

13 those is a tiny little bone. So we normally classify

14 them as being the proximal, the middle or the distal

15 phalanx. In this case it's the proximal phalanx, so

16 it's the one closest to the knuckle, so over the front

17 of that there was another flapped superficial laceration

18 measuring 0.6 cm in length and the flapped superiorly,

19 so that just means the flap is at the upper part of the

20 finger rather than towards the knuckle.

21 Q. So you just used the word "front" and your report says

22 back --

23 A. Sorry, back.

24 Q. Can you explain what the front is and the back?

25 A. The front of the hand is the palm of the hand and the

1 front of the fingers are the palmar aspect and the back
2 of the hand is the back with the back of the fingers.
3 Q. So this says:
4 "Over the back of the proximal phalanx of the index
5 finger~..."
6 A. Yes, so that would be kind of over the back here.
7 (Indicates).
8 Q. That is a flapped superficial laceration. I think you
9 used that expression when you were describing injury 12
10 on your report which related to the back of the right
11 hand?
12 A. Uh-huh.
13 Q. Irregular superficial flapped laceration on the right.
14 So here where you say on the left, is it a similar cause
15 that ...?
16 A. Yes, exactly the same causes as previously discussed.
17 Q. Right. Just remind the Chair what that could be?
18 A. So it could be from being against a blunt surface so
19 potentially on the ground. Again, it's the back of the
20 hand so another potential defence-type injury as well.
21 Q. And any possible connection with handcuffs?
22 A. Potentially. Depending if -- how the handcuffs have
23 been put on, if it -- obviously it's a bit more distal
24 but if the handcuffs had been around that area and kind
25 of taken the top layer of skin off, that would be

1 a possibility as well.

2 Q. Thank you very much. Then let's move on to right leg,
3 please. Right leg, there's two items noted here 20 and
4 21, both on the shin of the right leg. One is described
5 as a healing wound and one is described as a scabbed
6 wound. Tell us how these differ from the other injuries
7 you have spoken about?

8 A. These are older injuries so they have been there for
9 a period of time that would have pre-dated the incident
10 and kind of in the lead up to death. Healing means that
11 the wound has begun to heal, you can see the tissues
12 around the wound change slightly as it begins to heal,
13 so it's a way of differentiating a fresh injury from one
14 that has been there for a longer period. Similar with
15 scabbed wounds, you will know yourself if you injure
16 yourself there is different stages of healing, and you
17 will see a scab forming over the wound, maybe after
18 a couple of days of having the wound, so when we see
19 something like that we know it pre-dates any injuries
20 that we have seen that may be related to the death.

21 Q. Thank you. Then left leg, 22 and 23:
22 "Over the inner aspect of the knee~..."
23 There is an abrasion, can you describe to us what
24 the inner aspect of the knee is?

25 A. So the knee is a joint, so a kind of a ball joint, if

1 you like, you have the front, you have the back. The
2 inner aspect is the one that is going to the inner part
3 of both legs. If you are standing up and you have the
4 right leg and the left leg the inner aspect of that will
5 be the area of the knee that is kind of facing the other
6 leg.
7 Q. When it says, "inner aspect of the knee", what area
8 would that be?
9 A. That would just be the inner part of the knee, so the
10 kind of medial side, if you like, of the inner part.
11 Q. And this is described as an abrasion?
12 A. Yes.
13 Q. So I think you have previously described that as
14 superficial?
15 A. Yes.
16 Q. What sort of mechanism can cause an abrasion on that
17 position of the knee?
18 A. Again, like any other blunt-force injury, it's impact
19 with something be it -- it could be the ground, it could
20 be an object, so anything that can cause a blunt-force
21 injury. It is an odd site because it is quite well
22 hidden but again impact with the ground would probably
23 be at the top of the list.
24 Q. Could it be consistent with a baton, a strike from
25 a baton?

1 A. It would be unusual again because I would expect
2 bruising rather than abrasion because batons are quite
3 smooth, so probably not.
4 Q. 23:
5 "Over the front of the upper third of the shin,
6 an area of superficial skin loss~..."
7 Tell us about this injury?
8 A. So this is just a very tiny non-specific injury that
9 I can't really put into the abrasion or the bruising
10 part. You just -- you basically just see the surface of
11 the skin that has been slightly removed but there is
12 none of the kind of colour that you see normally with
13 an abrasion, so it's -- technically it probably isn't
14 even an injury but it is easier to kind of describe it
15 when you are looking at these in the different parts but
16 it is just the kind of most minor of things, very, very
17 non-specific.
18 Q. So included but not even really an injury as such?
19 A. Yes. Uh-huh.
20 Q. Thank you. Can we move on to the internal findings.
21 You have taken us through your external findings, and
22 this is the part of the autopsy or post mortem where you
23 describe the internal -- would these be internal
24 injuries or findings from that?
25 A. Yes.

1 Q. Let's look at head and neck first of all. You describe
2 an area of left frontal subgaleal haemorrhage underlying
3 injury number 1. This morning you talked about an
4 injury on the left forehead as injury number 1?
5 A. Yes.
6 Q. Tell us what you found internally in relation to that
7 injury?
8 A. When you retract the scalp, the scalp is basically skin
9 with some underlying connective tissue and we always
10 pull it down in order to look underneath to see if there
11 are any injuries there, and often underlying injuries
12 that you will see externally, like the abrasion on the
13 forehead, we will see underlying -- to all intents and
14 purposes it is bruising but within the subcutaneous
15 tissues underlying the external injury. That is what
16 it's, it's an area of bruising that corresponds -- it
17 would have been caused by the same thing that has caused
18 the abrasion in the first place.
19 Q. So externally it appears as an abrasion and underlying
20 there's also bruising that you can see?
21 A. Yes.
22 Q. It's described as haemorrhage and you use the word
23 bruise. For members of the public who are listening to
24 your evidence should they understand that there is
25 a distinction to be drawn there?

1 A. Haemorrhage and bruise we kind of use interchangeably
2 because bruises, as I said previously, are kind of where
3 the actual blood vessels tear and the blood leaks out
4 into the tissues so what you are seeing is haemorrhage.
5 In an external bruise the skin is not distorted, the
6 skin is not disrupted and that is why the skin is intact
7 and you see the haemorrhage underneath but it's --
8 whereas subcutaneously, because you are actually looking
9 into the tissues you see the haemorrhagic change. If
10 I dissected -- say if you had a bruise on the back of
11 your hand, if I dissected that bruise, ie I cut into it,
12 what I would see is haemorrhage underlying it. So it's
13 a kind of interchangeable term but we tend to use
14 haemorrhage when we are talking about the findings
15 internally in the body with bruising being the external
16 description of it.
17 Q. Thank you. You describe the haemorrhaging, the bruise
18 there, and then you say:
19 "The main arteries [in that area] appeared normal."
20 And the brain, you give the weight. Is that
21 a normal weight?
22 A. Yes.
23 Q. You then talk about the cerebral hemispheres showing
24 cloudy or white discolouration and arachnoid
25 granulations. I wonder if you can explain to us what

1 that means?
2 A. It's a completely normal finding that you can see in the
3 brain, it doesn't mean there is any definite pathology.
4 In this case I have been quite specific because there
5 was the question of the behaviour of Mr Bayoh prior to
6 the incident, and one of the causes of that can be
7 an infection on the surface of the brain can make you
8 behave quite out of character. So I was very mindful of
9 that when I was doing the description. When I looked at
10 it, it didn't look abnormal, it didn't look obviously as
11 if there was an infection but I wanted to make sure
12 that I described everything absolutely precisely. So
13 this is a normal finding, it doesn't mean there is any
14 pathology there but we try and give as much description
15 as we possibly can.
16 Q. So it was something you were conscious of, you were
17 looking for, but you didn't find anything abnormal?
18 A. No.
19 Q. And then you have indicated there that it was going to
20 be further tested by a neuropathologist?
21 A. Yes.
22 Q. You have talked today about a histopathologist and
23 yourself, a forensic pathologist, can you explain to us
24 what the distinction is with a neuropathologist?
25 A. Neuropathologists specifically look at the brain and the

1 spinal cord, and in any case that we do where the brain
2 may be significant in a cause of death or significant in
3 the case as a whole, we will always either retain the
4 whole brain or retain parts of the brain for
5 a neuropathologist to look at it, comment and provide us
6 with a report that we will then incorporate into our
7 final post mortem report.
8 Q. Is this someone with specialist training in the brain
9 and the pathology of the brain?
10 A. Absolutely. The same way that I did histopathology
11 before I was specifically trained in forensic pathology,
12 they would have done histopathology before they were
13 specifically trained in neuropathology. So what they
14 will do is offer opinions purely on neuropathology.
15 Q. But there are areas of overlap in terms of the basic
16 training that you will all have received?
17 A. Yes, we have to have a grounding in neuropathology, we
18 have to have a grounding in paediatric pathology. So
19 I can, and I do, in my routine cases routinely take
20 pieces of brain and look at it myself down the
21 microscope but in cases, medico-legal cases
22 specifically, double-doctor cases, we would always defer
23 to the neuropathologists for their expert opinions
24 because they are experts in neuropathology. I am not
25 an expert in neuropathology.

1 Q. Thank you. Before we move on from here, you have
2 described bruising and haemorrhage and explained to us
3 the distinction. Is there anything the Chair should be
4 aware of in relation to the haemorrhaging you saw under
5 the skin that would assist in assessing force and the
6 level of force required to cause these injuries?
7 A. Again, no I don't think so. It is distinctive of
8 blunt-force injury, there weren't any underlying
9 fractures, the skull wasn't fractured or anything like
10 that so it is certainly not a kind of moderate or severe
11 force that has been applied for these injuries to have
12 been sustained.
13 Q. Thank you. The next paragraph goes on to talk about the
14 mouth and you have given a detailed note of your
15 examination of that you and say that the tongue was
16 normal, the pharynx was normal, you have talked about
17 different areas being intact, was there anything
18 significant as far as you were concerned in relation to
19 this area, the mouth, the tongue, the neck dissection,
20 at that stage, that you noted?
21 A. Just that it was normal with no evidence of injury.
22 Which is important when we are taking it in the context
23 of petechial haemorrhages. With different types of
24 petechial haemorrhages or different causes of petechial
25 haemorrhages you may get something positive in the neck

1 dissection ie there may be injury to the muscles if
2 there has been pressure applied around the area of the
3 neck or there may be injury to the throat structures,
4 the bones and the cartilage in the throat, that may be
5 indicative of pressure or blunt-force applied to the
6 neck that may give you an indication that asphyxia has
7 played a role in death. But in this case the neck
8 dissection was completely normal so there were no
9 injuries to the neck structures that I was worried
10 about.
11 Q. So nothing that you found that caused you any concern
12 about that aspect?
13 A. Yes.
14 Q. You say here:
15 "... no evidence of haemorrhage into the strap
16 muscles of the neck~..."
17 What area is that?
18 A. When you move your neck from side to side, that requires
19 the contribution and relaxation of a number of muscles
20 that are in your neck, there are several muscles that
21 run from the area of the chin down to the clavicle and
22 these muscles allow you to turn from side to side, put
23 your head up and down, if you got damage to these
24 muscles then you wouldn't be able to do such movements
25 and these are -- they are specific muscles that attach

1 from various structures that we always look at routinely
2 in all of our post mortems just to make sure there is no
3 bruising or any damage to them.
4 Q. You say that the laryngeal skeleton was intact, what
5 part of the skeleton is that?
6 A. The larynx is the piece of the neck that sits just
7 behind the throat. You have the back of your throat,
8 your little thing that sits at the back of your throat
9 that kind of wobbles sometimes, your uvula, just
10 directly behind that is the pharynx which is cartilage
11 and soft tissue. Directly below that is the larynx and
12 then below that you have things like your windpipe start
13 to come from there. So these are the structures that
14 are in your neck that can be injured in kind of specific
15 situations that we always look at really, really
16 closely.
17 Q. Thank you. You say here:
18 "The thyroid gland (90g) appeared uniformly
19 enlarged~..."
20 I wonder, is that unusual?
21 A. It is. It is not something that we see terribly often,
22 especially in someone young, so it's normally
23 an indication that there is some sort of thyroid disease
24 happening. The fact that it's uniform takes things like
25 tumours and cancers out of the equation, and normally it

1 means there is a diffuse problem with the thyroid gland
2 but often people can have that and have absolutely no
3 symptoms and not even know they have it and they may
4 present later in life with various symptoms. So it is
5 an unusual finding.
6 Q. What sort of symptoms would someone with an enlarged
7 thyroid gland -- if they were experiencing symptoms what
8 would be noted by them or what would be something that
9 might be observed?
10 A. It completely depends on the cause of the enlargement.
11 You can get conditions where you have an overactive
12 thyroid so you are producing too much of thyroid
13 hormones so you can have things like quite a fast heart
14 rate, you can be really hot all the time, you can be
15 losing weight, things like that, your metabolism is in
16 overdrive so everything is working too hard. Whereas
17 people can have underactive thyroids, both of them are
18 causes of an enlarged thyroid and that is the complete
19 opposite where you can be gaining weight and you can't
20 explain it or you can feel very cold all the time, it is
21 very difficult to get warm, your heart rate can be a bit
22 lower than normal, it might affect your skin and things
23 like that. So there are all sorts of symptoms.
24 Q. Was there anything you found in your examination that
25 would have indicated the cause of that enlarged thyroid?

1 A. No, no.
2 Q. Thank you. Let's move on to the next section. I wonder
3 if you can explain what this related to. You have
4 described a facial dissection?
5 A. This is what we have to do sometimes in order to look
6 for injuries underneath the skin of the face.
7 I wouldn't do it in all of my post mortem examinations
8 but I do do it fairly frequently, especially in
9 double-doctor examinations. Often you can have very
10 little externally on the face, so no bruising or
11 abrasions, but when you look underneath the skin you can
12 see haemorrhage which would indicate blunt-force trauma
13 and you can also see injuries to the facial skeleton
14 that wouldn't be apparent from external examination.
15 So --
16 Q. So you can actually get haemorrhage underneath the skin
17 on the face without there being an external indicator of
18 that?
19 A. Yes, absolutely. And especially in this case with
20 Mr Bayoh's skin being so dark as well, and as
21 I explained previously the difficulty of seeing specific
22 bruises would be another reason. But to be fair, even
23 in a Caucasian person I would have done a facial
24 dissection in this sort of case. That would be
25 a routine and would be best practice.

1 Q. Is that because it's a double-doctor post mortem, as you
2 have said?
3 A. Yes.
4 Q. I think in your Inquiry statement, without going to --
5 I don't need you to turn to that for the moment but you
6 talk in paragraphs 36 and 37 of your statement that --
7 where you had been given information about him being hit
8 with batons and maybe being face down, and having dark
9 skin, that that would be a reason why you would want to
10 carry out the facial dissection?
11 A. Absolutely, and he had facial injuries as well. He had
12 external facial injuries, so categorically I would 100%
13 have had to have done a facial dissection.
14 Q. And then I think at paragraph 37 of your Inquiry
15 statement you were asked about the family perhaps
16 wanting to carry out a viewing, after the post mortem,
17 and your views on that having carried out the facial
18 dissection. Do you want to explain to the Chair
19 a little bit more about the considerations you bear in
20 mind?
21 A. Yes, absolutely. As I said previously, routinely
22 families do not tend to see our patients until after we
23 have done the post mortem examination and routinely
24 families will come and view the body after the
25 post mortem examination and it is -- one of the jobs of

1 the technicians that I was speaking about previously is
2 to reconstruct the body afterwards, and basically allow
3 the person to look exactly as they did prior to the
4 post mortem examination, that is certainly the gold
5 standard we always strive for. So I personally have
6 never had any problems before or had any -- anyone
7 complaining that there was an issue with viewing the
8 body afterwards, having done that. It is not something
9 that we can't do, we categorically have to do these
10 sorts of dissections unfortunately but I have never
11 heard of there being a problem afterwards, having
12 undertaken that.
13 Q. Thank you. Can I ask you about something separate.
14 It's understood that a quasar examination was carried
15 out before the post mortem began. Can you explain to
16 people what a quasar examination is?
17 A. Yes, it's a special light examination where the body is
18 looked at under different UV lights. It is supposed
19 to -- if there are any injuries on the body that are
20 potentially patterned, the kind of things we tend to
21 think about or see are foot marks, if someone has been
22 stamped upon and if they may have a -- have a foot mark
23 or a shoe mark or a boot mark, something like that, then
24 we would be asked for that to be undertaken prior to the
25 post mortem examination. Because after you have

1 undertaken the post mortem examination because you have
2 open tissues it can distort anything that quasar may
3 offer.
4 In my experience it is not a terribly useful
5 procedure but it is something that the Fiscal and the
6 police like to do if there is that sort of story, and
7 I think in this case they quasared the body prior to~...
8 Q. Do you know what the results were?
9 A. Negative because there was nothing to find, which is
10 nine times out of ten. To be fair, if there is a foot
11 mark on a body a plain photograph is perfectly
12 reasonable for showing that, obviously with scale. So
13 in my experience quasar never produces any better
14 quality than what our photographers produce, but as far
15 as I can remember -- well, there wasn't anything because
16 if there was then it would have been picked up at
17 post mortem and further looked at.
18 Q. So if -- the findings were negative but if they had been
19 positive in some way, is that something you would have
20 incorporated into your report?
21 A. Yes.
22 Q. And investigated further?
23 A. Yes.
24 Q. Thank you. Can we just be clear, what can cause
25 a haemorrhage under the skin but not have any signs at

1 all on the external body?
2 A. A blunt-force impact. You can get blunt-force impacts
3 where they have had an impact with something an object
4 a fist, that you don't always see something externally
5 but can see things internally and that is unfortunately
6 why we have to do further internal dissections of the
7 body to look underneath the skin to make sure there is
8 nothing that we are missing.
9 Q. Does it make any difference to that process how quickly
10 after that blunt-force impact the person maybe dies?
11 Does blood stop flowing into the tissues underneath?
12 A. If you -- if you -- once you die you obviously don't
13 have a circulation, so the development of injuries
14 shouldn't happen. It has been proven and I have seen
15 that people who have bruises sustained while they are
16 alive, after they die there can be a change in the
17 bruise, it can get slightly bigger, not by any huge
18 amount. So there can be some development in injury
19 progression after someone dies but you can't injure
20 a body after a person is dead so if you have
21 something -- if you have injury underlying the tissues
22 it is kind of telling you the injury is likely to have
23 been sustained before the person has lost their
24 circulation and lost their output. Otherwise there
25 wouldn't be a blood supply to get to that area for the

1 haemorrhage to occur.
2 Q. If there is haemorrhage is that indicative of an injury
3 during the person's life?
4 A. Yes.
5 Q. If we hear the phrase "ante mortem" would that be the
6 sort of thing that means?
7 A. Yes.
8 Q. Thank you. Can we look at the next section which is
9 "Chest", on page 7. Here you say that the ribs were
10 intact. Tell us how you visualised the ribs and how
11 many ribs you were able to visualise during the
12 post mortem?
13 A. What happens is you make an incision from kind of the
14 lower part of the neck down to the pelvis, and you use
15 a knife to basically pull back the tissues that are over
16 the chest so when you pull back those tissues you can
17 see the soft tissue all the way down to the front of the
18 back. That will expose the anterior ribs so you will be
19 able to see from that, you will be able to see the
20 clavicles, you will be able to see the sternum and
21 you'll be able to see the cartilage that attaches to the
22 sternum and then the ribs that are coming from there,
23 and -- but what we then do is we take off the sternum,
24 so we will use very sharp scissors to take the sternum
25 off as a kind of a triangle down either side of the

1 chest and when we take the sternum off, and take organs
2 out we can see the whole rib cage, so I can see all of
3 the ribs and every part of them. And when we do a back
4 dissection we can also see the posterior aspect of the
5 ribs as well so I can see every part of all of the ribs
6 that most people have a set of twelve or thirteen, some
7 with free hanging ribs, but we can see all the ribs.
8 Q. What are you looking for when you look at ribs?
9 A. I am looking for injuries, I am looking for fractures of
10 the ribs, and I am looking for any reaction to that
11 fracture, any haemorrhage that is associated with it.
12 Also old rib fractures as well. Not all rib fractures
13 need to be new, there can be some that are old and
14 healing that may give an indication of previous trauma.
15 But the main thing that we are looking at in the rib
16 cage is trauma.
17 Q. What signs do you look for if there is a rib fracture;
18 what signs would you expect to see in a post mortem?
19 A. If the fracture has happened in life or indeed during
20 resuscitation, you would expect to see some haemorrhage
21 associated with it, because if you fracture something so
22 if you break something you -- the mechanism that has
23 caused that break, the force that has been required to
24 do that, will also damage the tissues around it, so will
25 damage the little blood vessels that are around it and

1 that is when the blood leaks and you see the haemorrhage
2 associated with that. So often the first indicator of
3 rib fractures is some haemorrhage that you see. And
4 that draws your eye and then you look at it kind of more
5 closely to see if it is actually broken.
6 Q. You talked earlier, I think this morning, about the
7 level of force required to cause a fracture of a rib,
8 and I think we have got your evidence on that.
9 Can I also ask you about what you say here about
10 the lungs. The right was 860 grams, the left 790 grams
11 and they were congested and oedematous. I wonder if you
12 could explain to people what that means?
13 A. So they were both heavy. You would expect -- the
14 measurements for weights of various organs do vary from
15 the sex of an individual, what an individual's height
16 and weight, so there are longs charts of these sorts of
17 thing but as rule of thumb I would expect the lungs to
18 be up to maybe 450 grams at a maximum, maybe up to 500,
19 so these were very heavy lungs. And congestion and
20 oedema is basically the lungs are fluid locked, so when
21 you look at them, when you squeeze them, lots of fluid,
22 kind of congested blood comes out of the lungs and this
23 finding at post mortem is very, very non-specific, it
24 doesn't mean anything. It doesn't tell me
25 pathologically really anything terribly useful about

1 the lungs in terms of cause of death. You can see it
2 just as a terminal response if someone dies of heart
3 disease, you see it especially prominently in people who
4 have been resuscitated because normally whilst they are
5 resuscitated there may be lots of fluids being given to
6 them intravenously. You can see it in people who have
7 been -- maybe if they have drugs on board and they have
8 been unconscious for a period of time the lungs can get
9 locked and congested, so it's a very, very common
10 finding that I probably see in 90% of my post mortems.
11 It is non-specific and it's really just a descriptive
12 term.
13 I suppose the more telling thing is what I am not
14 seeing because I am not -- I could put lots of negatives
15 in as in there is not pneumonia, there's not a tumour,
16 there is not all of this but I don't tend to do that in
17 my post mortem reports. The fact that I haven't said it
18 means that is not there because it would be described,
19 so it's a descriptive term but it is very non-specific.
20 Q. Then you talk about the pericardial sac being normal.
21 Where is that?
22 A. The pericardial sac is a lining that sits around the
23 heart. It's protection basically for the heart, and it
24 can be injured in trauma cases and it can also -- things
25 like if someone has a heart attack and their heart

1 muscle ruptures they can bleed into the pericardial sac
2 so we always note that if it is normal and if it is not
3 normal describe why it's not normal.
4 Q. Then you say:
5 "The heart (430g) was of normal size and
6 configuration."
7 What did you mean by that?
8 A. So 430 grams is a reasonable weight, it's not too heavy
9 for what I would expect of someone of Mr Bayoh's weight
10 and size and sex. And normal size and configuration
11 just means anatomically it was normal, everything was
12 where it was supposed to be, there weren't any
13 congenital abnormalities. It looked completely how
14 I would expect a normal heart to look.
15 Q. You say:
16 "The coronary arteries myocardium and cardiac valves
17 were normal."
18 Again, can you tell us what these are?
19 A. The coronary arteries are the arteries that lie on the
20 surface of the heart and those are the arteries that
21 carry the oxygenated blood to the heart, so if you have
22 any sort of obstruction in these, for example, like
23 I was talking about previously, coronary artery disease
24 with furring of the arteries, that would cause a lack of
25 blood supply to the heart and potentially a heart

1 attack. So in all of our cases regardless of cause of
2 death we always look really closely at all the coronary
3 arteries, the three main coronary arteries, because
4 significant disease in any one of these could
5 potentially be a cause of death.
6 The myocardium is the heart muscle, it's just the
7 fancy word for heart muscle and the heart has four
8 chambers, it has two big chambers in the two ventricles
9 and two smaller ones the atrium and we always look at
10 the slices through the heart to make sure there is no
11 damage to the myocardium which could be things like
12 scarring if someone has had a previous heart attack or
13 there can be acute changes that may suggest a current
14 heart attack or tumours or anything like that that can
15 happen. So that was completely normal.
16 Q. And the cardiac valves?
17 A. The cardiac valves, you have four of those in your
18 heart, and they basically open and close as the heart --
19 as the blood moves around the heart to the various
20 chambers, so the blood will come back to one side of the
21 heart, and has to make its way through to the other side
22 in order to go to the rest of the body. These are very
23 clever, they basically open and close when required, to
24 trap blood when it needs to be trapped, let it out when
25 it needs to flow and if you get damage to any of these,

1 for example if you get things like valvular heart
2 disease, you may get calcification of one of the valves
3 where it gets very narrowed, and it's not opening and
4 closing properly. That can cause the heart to have to
5 work really, really hard because it is trying to push
6 blood through an enclosed space so it has to work
7 really, really hard, and when muscle works really,
8 really hard, as you see if you lift weights or you work
9 your bicep, your bicep gets bigger and bigger, which is
10 a normal and good thing to happen but in the heart, if
11 your heart muscle is having to work really hard and it's
12 getting bigger and bigger, then the muscle that it's
13 being replaced with isn't good -- well functioning
14 muscle so the heart begins to fail and that is when you
15 get things like heart failure that can kill people. So
16 it's really important to look at the valves carefully to
17 make sure there is no disease in those valves which
18 there wasn't here, they were completely normal.
19 Q. So in terms of your own examination of the heart,
20 everything was completely normal?
21 A. Yes.
22 Q. "The aorta was normal."
23 Which part of the body is that?
24 A. It's the biggest blood vessel in the body, it's
25 a massive artery that runs basically the whole length of

1 the chest into the abdomen, where lots of little
2 arteries come off to go to various organs so for example
3 you will have the renal arteries which are the kidney
4 arteries will come off the aorta to go to the kidneys to
5 supply oxygenated blood to the kidney. So it is the
6 most important and largest blood vessel in the body.
7 Q. Then the oesophagus contained fluid and mucosa was
8 normal. So again is his windpipe normal?
9 A. Sorry, the oesophagus is the gullet so it's where your
10 food goes, which was completely normal, and we often see
11 little bits of bilious fluid just as things come back up
12 from the stomach, especially when people are
13 resuscitated because resuscitation tends to produce
14 pressure which can bring food back up the way if there
15 is anything in the stomach. So that is a completely
16 normal finding and nothing to worry about.
17 Q. Then looking at abdomen again you rule out adhesions,
18 you say the intestines were normal. You talk about
19 the liver appearing congested and showed focal pale
20 areas. Was that something of concern in relation to --
21 A. Again no, it's a very normal finding at post mortem
22 especially when people have been resuscitated,
23 congestion is a really common finding. It doesn't
24 suggest any particular pathology but it just tells me
25 kind of this is what I have seen and then I can

1 correlate that with what I am seeing down
2 the microscope.
3 Q. Again, the Chair can read this section in due course but
4 really everything in the abdomen was normal, within
5 a normal range?
6 A. Yes.
7 Q. Moving on to the musculoskeletal system. Here you talk
8 about a subcutaneous dissection undertaken on the trunk
9 and limbs, and you give your detailed results in
10 relation to this. I would like to ask you about the
11 first one of these, please. You mention the back
12 earlier. We were talking about weight on the back and
13 that type of thing:
14 "Over the left upper back, an area of subcutaneous
15 haemorrhage extending into muscle and measuring 1 cm in
16 diameter."
17 Could you help the Chair understand that entry in
18 your report?
19 A. What we do is we look underneath the skin on the back so
20 we tend to make a T-shape incision in the back and
21 a line across the lower part of the shoulders, and then
22 we peel the skin back, looking initially at the
23 superficial layer of muscles, and we document any
24 haemorrhage that may be present there. We then take
25 back the superficial layer to the more deeper layer of

1 the muscles of the back. The back is a very muscular
2 part of the body, there are lots and lots of big thick
3 muscles there so we tend to take the superficial layer
4 and then look underlying that just to see if there is
5 any haemorrhage.
6 Often the back, just because of the nature of the
7 skin and the kind of fatty tissue similar with the
8 abdomen you don't necessarily have to see anything
9 externally for there to be underlying haemorrhage into
10 the subcutaneous tissue, so again it's another thing we
11 have to do to definitively confirm or exclude if there
12 are any blunt-force injuries to the back.
13 Q. I think earlier today you talked about there being no
14 external injuries on the trunk other than the one you
15 described. You said that the trunk included the back
16 and there were no injuries visible externally on the
17 back. Here we see that you found haemorrhage
18 subcutaneously and I wondered if you could help the
19 Chair understand what the possible causes of that could
20 be?
21 A. Again, the haemorrhage is blunt-force in origin, so some
22 sort of blunt-force has been applied to that area for
23 the underlying tissue to -- or the little blood vessels
24 to have broken and caused the haemorrhage, so again the
25 usual caveat of blunt-force injury with an object

1 potentially if they are on the ground and any of the
2 other kind of parameters that can cause blunt-force
3 injuries.
4 Q. Is there anything in your findings here that would
5 assist -- when the Chair is coming to consider would
6 this injury have been caused if Mr Bayoh was on his
7 front or on his back, is there anything that could help
8 him distinguish or assist him?
9 A. It's difficult to be certain because obviously if he was
10 on his front pressure could have been applied with
11 something to the back, but in the same vein if he is on
12 his back and there is something underneath potentially
13 that area that is irregular or blunt, then it could have
14 happened kind of either way.
15 Q. If there is no evidence available to suggest that there
16 was something underneath and if there is evidence to
17 suggest that Mr Bayoh was on his front, would that be
18 indicative of something on his back then?
19 A. Yes.
20 Q. Right. Looking at this description, you say this is
21 1 cm in diameter. So what type of pressure could be
22 applied to the back that would cause an injury on the
23 left upper back of around 1 cm in diameter?
24 A. Again, it could have happened with minimum force it is
25 just a tiny little area of haemorrhage within there, so

1 it wouldn't have required a great deal of force I don't
2 think for that to happen.
3 Q. Was there anything about the shape of that haemorrhage
4 that could assist the Chair?
5 A. No, no, it's non-specific. There is not any kind of
6 pattern to it.
7 Q. Thank you. Then moving on, I also see in the
8 musculoskeletal system section of your report that you
9 mention injuries to the shin area and if we can move on
10 to page 8, please. For example if we see the third
11 bullet point there:
12 "... the outer middle third of the right shin
13 an area of subcutaneous soft tissue haemorrhage which
14 superficially extended into the muscle and measured
15 7 cm~..."
16 At the very final bullet point again an injury to
17 the left shin area. I am wondering if you could help
18 the Chair understand what could have caused this type of
19 injury, this type of haemorrhage in that area?
20 A. It's blunt-force in origin again, so a blunt-force
21 impact with something, for example batons if those have
22 been in use, something like that would be kind of
23 classical of causing -- because there is a reasonable
24 amount of haemorrhage on both sides, the right more than
25 the left, so potentially anything that is blunt-force

1 that could have been applied to that area.
2 Q. So if there is evidence available to the Chair about
3 baton strikes to the legs, is that the type of thing
4 that would be consistent --
5 A. Yes.
6 Q. -- with that injury?
7 A. Yes.
8 Q. We have also heard evidence about leg restraints being
9 used and applied. Is that the type of thing -- these
10 are soft leg restraints.
11 A. It's probably less likely but it's still possible,
12 especially if there is some movement and they have been
13 put on with a degree of movement against them. But it's
14 possible.
15 Q. In terms of the size and shape of these injuries, is
16 there anything that could assist the Chair and help
17 understand or distinguish between those two
18 possibilities of baton or leg restraints?
19 A. I think given the size, particularly on the right, it's
20 probably more likely to be baton than restraints.
21 Unless there had been a massive movement of the
22 restraints up and down the leg kind of with pressure
23 applied to them. It's probably more likely batons.
24 Q. Thank you. Can we move on please. You say:
25 "... no evidence of fracture or deformity."

1 And then, "Further investigations". Now, earlier
2 today you talked about the different investigations that
3 you would instruct specialists to carry out. You
4 mentioned a number of these. We see them listed here:
5 histology, neuropathology, toxicology, bacteriology and
6 virology, and you have given some brief description of
7 the nature of those investigations. Can I just ask
8 about the bacteriology and the virology please. I don't
9 think they have been mentioned so far in your evidence.
10 Tell us about bacteriology?
11 A. Bacteriology are samples that are sent that look for
12 bacteria in that there are certain bacteria that can
13 overtake the body and be responsible in causing
14 someone's death. So we will often take either swabs or
15 pieces of tissue at the time of post mortem. They are
16 sent to the microbiology lab. They will be grown or
17 incubated to see if they grow any specific bacteria and
18 they will then submit -- give us a report that we will
19 then incorporate into our post mortem reports, and if
20 anything is grown make a decision as to whether it's
21 important or not.
22 The problem with bacteriology is after someone dies
23 they automatically begin producing bacteria, as they
24 begin -- the body begins to decompose almost
25 immediately, so bacteria will be produced so it can be

1 very difficult to differentiate ante mortem from
2 post mortem bacteria. That is why it is very much
3 correlated with what you are finding at the post mortem.
4 For example, if I had a case with a pneumonia and I sent
5 a bacteriology sample that confirmed a bacteria that is
6 associated with pneumonia, then I would be reasonably
7 happy that I have a causative bacteria, so there has to
8 be some sort of correlation with what you are finding at
9 post mortem because we do -- I could send off
10 bacteriology on someone who I have absolutely no
11 suspicion at all of any sort of infection
12 and I guarantee it will come back with four or five
13 different bacteria and a lot of that is post mortem
14 contamination. Our bodies in themselves are covered in
15 bacteria, commensal bacteria, which is healthy bacteria.
16 If I swabbed anybody in here's mouth at the moment
17 I would get several bacteria but that is fine because it
18 is normal and it's not doing you any harm. The problem
19 at post mortem is we will grow that bacteria but we have
20 to work out if it is important or if isn't and nine
21 times out of ten it tends to not be important because
22 we can't be sure it is definitely post mortem.
23 Q. So how common in your experience is post mortem
24 contamination?
25 A. It is -- in 100% of cases, there will be a degree of

1 post mortem contamination because bugs are being
2 produced post mortem.
3 Q. Because people have bugs on them?
4 A. Exactly, yes.
5 Q. I think in your -- I won't take you to your Inquiry
6 statement but I understand you have provided further
7 details of these investigations at paragraphs 42 to 48
8 and you have given a fuller explanation of each of these
9 different types of investigations?
10 A. Yes.
11 Q. The Chair can consider that in due course.
12 Can I ask a question -- we have been touching on
13 what is post mortem. We know that there were samples
14 taken at the hospital of blood and urine and we know
15 that you took post mortem samples.
16 A. Yes.
17 Q. We are trying to understand what the difference is in
18 terms of the samples taken during the hospital when they
19 were trying to resuscitate Mr Bayoh and what you would
20 class as your post mortem samples. Can you explain what
21 the distinction is and the importance of the difference
22 between them?
23 A. So when someone is resuscitated, they tend to put
24 various cannulas and things in and they also tend to
25 take a set of bloods that will be sent to the lab to

1 give them some sort of information as to maybe a reason
2 that the person is so unwell. Those are known as
3 hospital blood samples, and we will always try and get
4 a hold of those samples because they are much easier to
5 work with, and give much clearer and more exact
6 information than our post mortem samples. The problem
7 is that they are often destroyed quite quickly after
8 a person dies but we will always instruct the police,
9 and to be fair they know now ASAP to get a hold of those
10 samples if you possibly can. They would be I suppose
11 our gold standard, if you like, in the lab if there
12 are -- there tends to be limited samples because they
13 are very tiny amounts but I would always try and
14 prioritise what drugs I might be most interested in if
15 I do have limited samples and I would take my results
16 primarily from the hospital samples, because post mortem
17 samples, as much as we try, you -- a lot of drugs
18 redistribute so once someone dies, they spread their way
19 through the tissues, they spread their way through
20 blood, and we often get artificially high levels at
21 post mortem.
22 There are a lot of things that are produced after
23 death, things like alcohol, you can have no alcohol in
24 your system at all when you die and I could do
25 a post mortem and do post mortem toxicology and you

1 would have a reasonable amount of alcohol because it is
2 one of the ways that the body begins to decompose, it
3 starts to produce alcohol so it is naturally produced
4 after death, and there are other drugs that break down
5 much quicker and the post mortem redistributions.
6 There's lots of reasons that the post mortem samples
7 that we use are not optimum and can often limit what we
8 can say in terms of how we would conclude how important
9 these drugs have been, depending on the drug and
10 depending on the post mortem interval, depending on the
11 degree of decomposition so there are lots of other
12 factors but ideally if we can have the blood samples
13 that are taken around the time of death or in the kind
14 of resuscitation period, that is ideal to look at from
15 a post mortem point of view.
16 Q. Would it be reasonable to say that they give a more
17 accurate indication of what was in the blood or the
18 urine --
19 A. Absolutely, because they have --
20 Q. -- better than the post mortem results?
21 A. Yes, definitely because they haven't begun to decompose,
22 they haven't begun to break down so they would be much
23 more accurate.
24 Q. Would that be the position even if the person died on
25 one day and the following day there is a post mortem, so

1 even if it is a 24-hour period or more than 24 hours?
2 A. I still would take the hospital bloods over the
3 post mortem bloods even at a day. A day is good to be
4 fair, that is reasonable, and the post mortem samples
5 may not be too distorted but I still would ideally go
6 back and reference the hospital samples.
7 Q. Thank you. Then as well as these further investigations
8 which you have listed here, am I correct in saying that
9 there were also x-rays and a CT scan carried out?
10 A. Yes, uh-huh. So after the case we had a discussion
11 to -- at post mortem you can look at pretty much
12 everything but what you can't see without really
13 detailed evisceration of the patient, which is not
14 something we want to do, we don't want to do anything
15 else to the body if we can possibly avoid it, so what we
16 have are tools like x-ray and CT. So our main concern
17 following the post mortem was that we hadn't been able
18 to have a look at the long bones, so the leg bones and
19 the arm bones, everything else we could obviously see --
20 the ribs, the skull -- so a plain x-ray would give us
21 that information. So that was organised to happen
22 following a discussion after the post mortem examination
23 or in the days following, I can't remember the
24 timescale. So that was undertaken, and the body was
25 transferred up to Edinburgh Royal for that because that

1 is where our facilities are for that, we don't have
2 those facilities at the City Mortuary.
3 Those scans were then looked at by a radiologist, we
4 have a dedicated forensic radiologist who does all of
5 our scans and reports all of our scans but they couldn't
6 visualise the cervical spine so they couldn't visualise
7 the neck basically from the top of the chin to the top
8 of the chest properly and given the description of them
9 being on the ground and things I wanted a really good
10 note that there wasn't anything in the cervical spine
11 that I needed to then go back and look at. So the
12 decision was made to CT the body for further examination
13 because that gives much better pictures of the cervical
14 spine, so the body was transferred back up for a CT so
15 we got a full body CT that then visualised the cervical
16 spine. So there was two lots of imaging done after the
17 post mortem.
18 Q. We will come on to that in a moment but -- so that was
19 two further pieces of investigation carried out. Just
20 to complete the consideration of your report, if we can
21 move further down the page. You then detail productions
22 for the police, you have talked about PIRC and DC Grady
23 being there to take productions. And then your opinion
24 as to cause of death you have given there and you have
25 explained earlier:

1 "1a. Unascertained (pending investigations)."
2 A. Yes.
3 Q. Thank you. I would like to move on to your final
4 report, please. This is --
5 LORD BRACADALE: Although it is slightly before 3 o'clock,
6 if you are moving on to that, it might be better to take
7 a 15-minute break now.
8 (2.57 pm)
9 (A short break)
10 (3.18 pm)
11 LORD BRACADALE: Ms Grahame.
12 MS GRAHAME: Thank you. We were just about to turn to your
13 final report. We will get that on the screen.
14 PIRC 01445. We will look at the first page and we see
15 at the top, "Final report". This wasn't issued until
16 18 June 2015. So is this issued after you have received
17 the results of the various investigations that you have
18 described to us already?
19 A. Yes.
20 Q. If we move down that page, we will see that the medical
21 cause of death having initially been described as
22 unascertained pending those investigations we now see it
23 is given as:
24 "Sudden death in a man intoxicated by MDMA (ecstasy)
25 and Alpha-PVP, whilst being restrained."

1 So that was certified by you as the medical cause of
2 death, and that was after all of the results that you
3 had considered?
4 A. Yes.
5 Q. Now, if I tell you that we have not heard evidence from
6 this witness but the Chair has a statement available to
7 him from a professor of cardiac pathology,
8 a Mary Sheppard, who says effectively that everyone dies
9 of a cardiac arrhythmia at some point because
10 effectively your heart stops beating and that is what
11 kills effectively everybody?
12 A. Yes.
13 Q. So where it says "sudden death", would you agree with
14 the professor of cardiac pathology, Mary Sheppard, that
15 effectively that is when your heart stops beating?
16 A. Yes.
17 Q. Thank you. You have now introduced as part of cause of
18 death the MDMA or ecstasy?
19 A. Uh-huh.
20 Q. Which was one of the results from the toxicology report
21 that you received?
22 A. Yes.
23 Q. That was found in the blood sample that you had been
24 sent?
25 A. Yes.

1 Q. We will look at that in more detail in a moment. And
2 also a drug called Alpha-PVP was found?
3 A. Yes.
4 Q. And you said "whilst being restrained"?
5 A. Yes.
6 Q. That was the circumstances, as you understood them, at
7 the point at which Mr Bayoh became unconscious and
8 stopped breathing?
9 A. Yes.
10 Q. Thank you. Let's move on to page 3 first of all,
11 because I think on page 2 essentially the information on
12 that page is the same as your initial report.
13 A. Yes.
14 Q. On page 3 we see some new additional information that
15 has been added in. So is this effectively, this report,
16 a revisal of the initial work that you have already done
17 in the initial provisional report after the post mortem?
18 A. Yes.
19 Q. So you are building on that in light of new information
20 you had?
21 A. Yes.
22 Q. We see that the second paragraph there:
23 "There were reports that both PAVA and CS gas were
24 deployed by police officers."
25 A. Yes.

1 Q. So you have been given further information and you have
2 now incorporated the extra background information into
3 this report?
4 A. Yes.
5 Q. Then, without going through pages 3 and 4 and on to
6 page 5 in detail, do we see that you have simply updated
7 and summarised the additional information you have been
8 given and that included additional statements and
9 additional information about the circumstances of
10 Mr Bayoh's death?
11 A. Yes.
12 Q. Thank you. Then we move on to page 5, please and we see
13 external findings. Again at the bottom of that page we
14 see the same content in this report as we did in the
15 initial report?
16 A. Yes.
17 Q. That remains the position I think until page 9 of this
18 report. Effectively it's building on your initial
19 provisional assessment?
20 A. Yes.
21 Q. So if we can go to page 9, please. Thank you. We see
22 just above "Chest" it says:
23 "The cervical spine was intact."
24 That is a new entry, and at the chest towards the
25 bottom of that page you then expand and say:

1 "Following the CT examination~..."

2 A. Yes.

3 Q. Is this where you expand on that additional radiological

4 assessment of the skeleton and the CT scan?

5 A. Yes.

6 Q. What we see there is it says that:

7 "... the CT examination which was undertaken after

8 the post mortem, the 7th cervical vertebra and left 1st

9 and 2nd ribs were re-examined."

10 Can you tell us about the detail you have put here

11 into your report?

12 A. From the CT examination there were things on the 7th

13 cervical vertebrae and the left 1st and 2nd ribs that

14 were flagged up as being potentially injuries so we went

15 back to the body to visualise those areas, to determine

16 if it was artefactual secondary to the post mortem or

17 were there indeed injuries there.

18 Q. When you say "visualise" do you just mean have a look?

19 A. Yes, have a look.

20 Q. When you talk about artefacts or artefactual, can you

21 explain to people what that means?

22 A. When the post mortem is undertaken we obviously do

23 various things to the body using things like saws and

24 knives, so we can introduce injuries ourselves during

25 that time. And because the CT was undertaken afterwards

1 it is very difficult for the radiologist to know exactly
2 what these findings may correlate to, hence why the
3 optimum way of managing that is to go back to the body
4 and actually visualise what they are seeing and then
5 from that we can work out how significant they may or
6 may not be.
7 Q. Would the radiologist have as much information about
8 circumstances as you would?
9 A. Not necessarily. No. No.
10 Q. So you then go on to say:
11 "Vertical incised wounds were seen~..."
12 And you describe where. Can you tell us what this
13 is about?
14 A. There is vertical incised wounds through the front of
15 the cervical vertebrae. The neck has seven vertebrae in
16 it, they are basically the neck bones that the spinal
17 cord runs through, and when we did the post mortem we --
18 in addition to taking the brain for the neuropathologist
19 to look at, we also took the cervical spine so that
20 requires using a saw internally to disrupt the side of
21 the bones of the neck in order to take off the cervical
22 spine and find the cord which is what controls your
23 movement, controls your breathing. So what is being
24 seen there is when we have gone back what we have seen
25 is the mark that we have made having done that at the

1 time of the post mortem, but it is impossible for the
2 radiologist to differentiate if that is real or if that
3 has been done during the post mortem hence why we go
4 back and have a look and clarify exactly what cause
5 would have been.
6 So we were quite happy that what she was seeing in
7 the cervical vertebrae was indeed artefactual, created
8 by us, and not something that was a true injury.
9 Q. Thank you. Then it goes on at the bottom of that page
10 to say:
11 "Soft tissue overlying the front of the posterior
12 part of the left first and second ribs~..."
13 I wonder if you could explain this part of your
14 report?
15 A. So the first and second ribs are kind of -- the top of
16 the chest, it's almost kind of semi-circular as they sit
17 in the top of the rib cage, so it is not -- they are not
18 parts of the ribs that are obviously visually seen at
19 the time of the post mortem because they are quite
20 hidden behind. Unless obvious haemorrhage is
21 surrounding them extending into other parts of tissue it
22 is not something that we would visualise at the time of
23 the post mortem routinely.
24 So what we have had to do there is remove part of
25 the rib to see what was going on behind, at the area

1 that the radiologist has flagged up and from that, when
2 we looked at it in the PM room, there was some soft
3 tissue changes, kind of discolour of the soft tissue
4 which could have been haemorrhage which may indicate
5 something fresh going on, and there was a possible
6 fracture through that first rib. We were happy that
7 what she was seeing in the second rib wasn't a fracture,
8 there was nothing there that we could see that we were
9 worried about but the first rib looked as if there was
10 a possible fracture with some potential soft tissue
11 reaction.
12 The other problem is that as the -- after the
13 post mortem even though the body is refrigerated
14 specifically internally things still begin to break
15 down, even in the lower temperatures, so you still begin
16 to get changes in the colours of the tissues, from gas
17 production and things, so it can be really difficult to
18 differentiate what is true ante mortem from what is true
19 post mortem, just kind of naked eye.
20 Q. Difficult to distinguish ante mortem haemorrhage from
21 post mortem haemorrhage?
22 A. From post mortem changes because of the colouration of
23 the tissue.
24 Q. Right. How long had there been between your first
25 examination, your first post mortem, and this second

1 visualisation?
2 A. I think there was at least a week or so, I think I have
3 said that in my statement if you want me to try and find
4 it --
5 Q. No, that is fine --
6 A. There was a reasonable time gap there. We had already
7 had the examination of the skeletal survey initially and
8 then the CT after that and then the CT being reported,
9 giving the information for us to then go back to the
10 mortuary. So there was a significant time lapse between
11 the initial post mortem and going back to have a look.
12 Q. That period -- during that period the body remains in
13 a refrigerated environment but you cannot prevent things
14 taking -- deterioration taking place?
15 A. No, no.
16 Q. Decomposition taking place?
17 A. No, especially internally because the tissues internally
18 are breaking down continually, even in a refrigerated
19 environment so you are going to get some deterioration
20 and there is nothing you can -- again, I spoke about it
21 previously, freezing, but we couldn't do until we had
22 all the information we required because that would have
23 been detrimental to the examination as well, so it's
24 impossible to stop some sort of breakdown happening.
25 Q. In the absence of freezing, which wasn't possible,

1 you can't prevent that natural event taking place, the
2 decompositions?
3 A. Unfortunately not, no.
4 Q. I am grateful to my learned junior. In paragraph 65 of
5 your Inquiry statement you say the CT scan was carried
6 out on 28 May.
7 A. Okay.
8 Q. So if we could just look at that. You have described,
9 it's in the left first rib. You have also looked at the
10 left second rib. That must be close to the first rib?
11 A. Yes.
12 Q. But you didn't see any evidence of injury to the left
13 second rib at all?
14 A. No, no.
15 Q. When you say no evidence of injury, does that include no
16 evidence of signs of haemorrhage or soft tissue injury?
17 A. Yes.
18 Q. So the signs you saw only related to the first rib?
19 A. Yes.
20 Q. Then going back to -- we will come back to the issue
21 with the rib in a moment. Going back to your report, we
22 see -- go back to abdomen, and then you return to
23 musculoskeletal system, and those are exactly the same
24 as your original report.
25 A. Yes.

1 Q. Then at the bottom of the page 10 we see "Further
2 investigations", and again here radiology:
3 "Following the post mortem examination, a skeletal
4 survey and CT examination was undertaken."
5 Then on to page 11. You continue to repeat your
6 original views on the cause of death, and then we move
7 on to toxicology so we will have to come down that page
8 slightly. Here is where you describe the results of the
9 toxicology. I think in the hard copy of this report you
10 have added in the results at the back of the report or
11 we see copies of those, but you have incorporated them
12 here. I wonder if you could just summarise what was the
13 results of the toxicology please?
14 A. The toxicology showed, in hospital blood and in
15 post mortem blood, two different drugs, the Alpha-PVP
16 and the MDMA, or ecstasy is how they would normally be
17 known. We also looked for a variety of other drugs, we
18 screen for probably up to at least 50 other drugs in
19 terms of illicit drugs, from things like cocaine, heroin
20 to prescribed drugs, things like paracetamol, so we look
21 for a variety of other drugs in all of the toxicology,
22 and what is reported is what is positively seen and that
23 is what is kind of stated in the report, what the
24 toxicologists have found but there will be a variety of
25 drugs that have been screened for and have not been

1 found on the sampling.
2 Q. You have given the details of the concentrations, if
3 I can use that word. We will hear evidence later in
4 relation to the drugs from a toxicologist but this was
5 sufficient information for you to complete your
6 examination?
7 A. Yes.
8 Q. Complete your post mortem report?
9 A. Yes.
10 Q. Moving on to page 12, please, following on, do you see
11 under the results:
12 "All other analyses were negative."
13 Is that the other tests that would have been carried
14 out?
15 A. Exactly, yes.
16 Q. Then you talk about:
17 "A urine sample was sent to King's College
18 London~..."
19 A. Yes.
20 Q. "... and analysed for urinary androgens and synthetic
21 anabolic steroids. This showed the presence of
22 nandrolone and metabolites, consistent with the recent
23 administration of the anabolic steroid nandrolone."
24 A. I was given the information that Mr Bayoh had a history
25 of taking steroids, and in any case if I am given that

1 information I will always try and get the samples
2 analysed for that specific drug. It can only be looked
3 for in urine, and it is not done by our labs in
4 Scotland, it has to be sent down to London to
5 a specialist lab, so that is why specifically urine was
6 sent and it was sent to London.
7 Q. It says:
8 "... consistent with recent administration of the
9 steroid nandrolone."
10 A. Yes.
11 Q. Can you explain what you meant by "recent
12 administration"?
13 A. In the previous kind of few days to a week or so.
14 Steroid use is not something that we see as acutely
15 causing people to die. We see it as a more of
16 a confirmation that they have been taking it. What we
17 can see is long-term effects of it, chronic changes
18 where we can get heart damage -- which we didn't see in
19 this case -- but the only real reason for doing it in
20 this case was to confirm or exclude if he had it in his
21 system or had taken it recently.
22 Q. We see the final paragraph of this section that there
23 had been items seized from Mr Bayoh's house and they
24 were also analysed. Tablets were analysed to see if
25 there were any controlled drugs under the Misuse of

1 Drugs Act 1971, and the majority had a negative result:
2 "... one bottle containing tablets the presence of
3 caffeine was indicated ... and two boxes of tablets were
4 omeprazole and notably packaged appropriately."
5 Tell us what this meant?
6 A. This was extra information that we were given. We
7 often, if there are medications or tablets found at
8 a scene we want to know what they are because we need to
9 check for them in the patient's toxicology. So this was
10 just further information that was given to us so that
11 I could then -- because I wouldn't normally check
12 toxicology for caffeine, this is the one and only case
13 I have ever checked a toxicology for caffeine, it is not
14 a routine test that we do because it doesn't tend to
15 kill people, people don't tend to die from caffeine
16 toxicity. So it is not or on our routine screens. So
17 we need to know these things because they won't just be
18 picked up on toxicology by the routine drugs that they
19 normally check for, so I then have to speak to the
20 toxicologist just to make sure that is added in, make
21 sure they have are a method of undertaking that. Often,
22 again, it has to be sent to other labs for it to be
23 undertaken because certain labs won't have methods for
24 doing it. But I think in this case our lab was able to
25 do it but wouldn't have been able to do it without the

1 information that it was -- potentially had been taken.
2 Sorry, just going back to the nandrolone, what
3 I should also have said is the reason it is kind of
4 "recently" is because it is found in urine. When we
5 find drugs in blood at specific levels we can give
6 an indication as to how recently they may have been
7 taken, but when something is found in urine I have no
8 idea if it is in his blood or if it has been metabolised
9 in the urine, it can also remain in the urine for
10 a reasonable period of time. So I can say there has
11 been relatively recent use of the drug but I can't say
12 when exactly that would be because it has been
13 metabolised and does tend to hang around for a while
14 afterwards.
15 Q. So you can't be specific about the timescale or how
16 recent that has been?
17 A. No.
18 Q. We also see from this section -- actually it's on
19 page 11, that the blood samples and the urine samples
20 were analysed for alcohol and you have indicated that
21 other results were negative. We may have heard some
22 evidence that was an indication that alcohol had been
23 drunk by Mr Bayoh, and I wondered if you could help the
24 Chair understand how it is that someone who has perhaps
25 drunk alcohol could have a negative result in his blood

1 and urine?
2 A. An explanation would be that it has been metabolised, so
3 he has metabolised it out of his blood and it has been
4 metabolised out of the urine. It would be strange if he
5 had recently consumed the alcohol within the kind of
6 hours in the lead up to his death, but alcohol is
7 metabolised reasonably quickly -- the toxicologist, to
8 be fair, would be able to give you more information on
9 this, I am not an expert in toxicology and drug
10 metabolism -- but it also depends on what is in
11 a person's stomach, different types of food will
12 increase or decrease metabolism. So there are all sorts
13 of different parameters but it is unusual, if someone
14 has consumed alcohol within a reasonable limited period
15 of time before they have died, that we are not even
16 seeing it in urine because normally not seeing it in
17 blood is relatively common because it is metabolised
18 very quickly but not to see it in blood means it has
19 been metabolised out of the -- sorry, in urine means it
20 has been metabolised out of the urine as well.
21 Q. We will maybe hear more evidence from the toxicologists
22 about this.
23 A. They would be the best to ask about exact timings as to
24 what you would expect depending on different situations.
25 Q. Thank you. Then we see that you detail microbiology and

1 you talk about different swabs and tissue, and it
2 appears from this section of your report, which is a new
3 section, that there were some -- some findings, and
4 I would rather you tried to pronounce these than me if
5 you don't mind. So can you tell us a little bit about
6 the significance of these findings please?
7 A. This again goes back to the -- taking it in context with
8 the whole case and the fact that if you submit a sample
9 of something to microbiology post mortem you will grow
10 something even if it is nothing to do with it being
11 present in life, and I think that is what we have found
12 here. We have found some bacteria on the swab of the
13 brain and on the brain tissue that can be significant in
14 specific circumstances. I tend to speak to microbiology
15 with these sorts of results to get their opinion because
16 they are the people that the clinical doctors will speak
17 to when they are finding specific bacteria to see how it
18 affects patients or how it should be treated, so I do
19 tend to speak to microbiologists when I have results
20 that I might not even understand.
21 But in this case the bugs that have been grown you
22 can see in cases of people that have maybe had
23 neurosurgical intervention, so they have maybe had some
24 sort of brain surgery where the bugs can be introduced
25 at the time of surgery, but with the bugs that are

1 present here the fact that there is nothing like that in
2 the past medical history and there are no open wounds or
3 anything makes it highly unlikely that these bugs are
4 significant.
5 I was talking about context and the context of this
6 case is that you have to take this in conjunction with
7 the neuropathology. Firstly what I was seeing grossly,
8 what Professor Smith saw grossly, which wasn't very
9 much --
10 Q. Is this the neuropathologist?
11 A. Yes, the neuropathologist, and the fact that looking at
12 the brain down the microscope there was no evidence of
13 inflammation, there was no evidence of infection so
14 there was absolutely nothing to suggest that any of
15 these bacteria were critical or crucial to -- involving
16 the death. I think they are post mortem contaminants so
17 we excluded them as being significant.
18 Q. So you discussed this with the microbiologists?
19 A. Yes.
20 Q. Are they more specialist in this area than you yourself?
21 A. They are -- their speciality is microbiology so they are
22 the people who interpret, mostly in life to be fair,
23 there is not many microbiologists have a lot of
24 post mortem experience, but they are the doctors who in
25 life will look at what bacteria has been produced how it

1 is effecting a patient and how you treat it. They
2 decide on antibiotic regimes and things. So they know
3 specific bacteria are caused by specific things or are
4 produced in certain parts of the body much more than
5 I would. So it's a two-way conversation, to be fair,
6 because they don't have specific post mortem experience
7 but they can certainly help in the guidance as to what
8 you would expect of patients in life and I can try and
9 correlate that with what I have in someone who is
10 obviously dead.
11 Q. Where it says here:
12 "... results were very likely from post mortem
13 contamination."
14 Was that something that you and the microbiologists
15 agreed on?
16 A. Yes.
17 Q. Then you I think in your Inquiry statement, and I won't
18 take you to that in detail, but at paragraphs 88 and 89
19 you talk about this entry in your report and again you
20 say you are supported in that fact by neuropathology did
21 not find any infection or inflammation in the brain?
22 A. Yes.
23 Q. So there was nothing that the neuropathologists found
24 that would have caused you concern there was a brain
25 infection?

1 A. Yes.
2 Q. And nothing that you were able to see in your
3 post mortem that would have given you cause for concern
4 that there had been some sort of brain infection?
5 A. Yes.
6 Q. And the microbiologists agreed?
7 A. Yes.
8 Q. Can we look at "Virology" on page 13, please. It says
9 here:
10 "A brain swab was submitted for virological
11 examination. The results are as follows~..."
12 And they all appear to be negative. Can you tell us
13 how does this differ from the microbiology tests?
14 A. These tests are looking for specific viruses rather than
15 bacteria. So microbiology is bacteria and virology is
16 looking for viruses. This is not something I commonly
17 would do in post mortems, and the main reason for doing
18 it in this case was because of Mr Bayoh's behaviour
19 prior to the incident. As I mentioned previously there
20 are specific brain infections that are caused by certain
21 viruses that can make people act out of character, and
22 completely not be themselves. The main reason for doing
23 this was to exclude that as being a cause of such
24 behaviour.
25 And again, you would tend to see something on the

1 surface of the brain, although less so for a virus than
2 bacteria, you are much more likely to see something
3 grossly. Viruses can present where you see very little
4 on the brain, and you only know it's there because you
5 have tested for it grossly. But histologically, ie down
6 the microscope, you would see something if there was
7 a virus there that had caused problems, and obviously
8 Professor Smith hadn't seen that either.
9 Q. So there was nothing in terms the virology or the
10 histopathology, nothing that you saw and it appears that
11 there was no virus which caused any difficulties?
12 A. Yes, that is correct.
13 Q. Thank you. Then let's look at histology. Again, you
14 have gone through various organs, the brain, the heart,
15 lungs, liver, any abnormalities or concerns in relation
16 to your investigations in this regard?
17 A. No, no. There was nothing certainly suggestive in the
18 histology that would have been related to causing death.
19 Q. So nothing in histology at all. Can I ask you
20 particularly about the heart. You've talked in your
21 Inquiry statement about the heart and the investigations
22 between paragraphs 55-58. You have told us earlier
23 today as far as you could see in your examination the
24 heart was normal and the surrounding areas were normal,
25 the arteries were normal.

1 You clearly carried out further samples, and looked
2 at these different areas: SA node, AV node, ventricular
3 mapping. I wonder if you could explain to the Chair
4 these additional tests you carried out in relation to
5 the heart?
6 A. So the SA node and the AV node, the heart is kind of
7 a big ball of electricity, if you like, there is
8 a conduction system that passes through the heart
9 through nerve channels that goes from one side of the
10 heart to the other, and then goes diffusely through the
11 big chunky vessels, and it basically regulates the
12 beating of the heart.
13 If there is any issue with that system at any point
14 you can get disruption of that beating of the heart and
15 you can get what we call a cardiac arrhythmia. You get
16 various types of cardiac arrhythmias but the ones we
17 worry about are the ones that are not compatible with
18 life, the ones that mean the heart is so out of sync
19 with itself that it can't beat properly which means it
20 can't send oxygenated blood to the rest of the body.
21 And also it puts it at a greater risk of just stopping
22 and the heart stopping altogether.
23 So the SA node and the AV node are two parts of this
24 conduction system, they are like little stations where
25 is things are exaggerated so it gets here and kind of

1 starts again, goes down the nerve pathways, gets to the
2 next node, kind of starts again and then goes down
3 further nerve pathways and what you can see sometimes,
4 especially in people with congenital problems with their
5 heart or congenital problems with their conduction
6 system, you can see scarring in these systems.
7 So in these sorts of cases where I want to get as
8 much information about the heart as possible, I will
9 take this conduction system, I can take -- I know where
10 it is in the heart, I know which parts of the heart it
11 is in so I can take that and I can look at it down
12 the microscope to see if microscopically there is any
13 scarring, which there wasn't.
14 The ventricular mapping is to give me as much
15 information about the ventricles as possible. The heart
16 is a kind of a globular structure, as I have said
17 previously, you have these two big ventricles, the right
18 ventricle and the left ventricle which make up the
19 majority of heart muscle, they are the parts that do
20 most of the beating, in particular the left ventricle.
21 With ventricular mapping what we do is we slice from the
22 base or the apex of the heart right up to where the
23 valves are, they are at the top of the heart, and we can
24 lay that out and we can basically look at every level of
25 those ventricles right up to the heart valves. And if

1 I take what is called the mid-ventricular slice, it's
2 the optimum part of these ventricles and if I look at
3 every part of that down the microscope there is very
4 little that is going to be happening in other parts of
5 that heart that I am going to miss because I am covering
6 every part of the circulation that is in the heart, so
7 the three main coronary arteries will provide blood to
8 different parts of the heart and if I'm looking at that
9 big part of the heart I can see if there is any damage,
10 chronic damage or acute damage, and it's a good
11 correlation with the rest of the heart because I can't
12 put through every part of the heart, that would be
13 thousands of slides.
14 But this is a method that we've determined that
15 gives us a huge amount of information about the heart
16 and that is the mid-ventricular slice and by mapping
17 I can put it back together again basically, I have
18 a sheet with a picture of the ventricle and the lab
19 technicians will block that out for me, so when I am
20 looking at it down the microscope I could basically put
21 it back together as a jigsaw and see exactly where in
22 that ventricle I have looked, so if there is an issue in
23 one part of it I can say it is in this particular part
24 in my report and then I can maybe correlate that to
25 a particular blood vessel or a particular scenario.

1 So it is a way of getting as much information about
2 the heart as possible.
3 Q. This method that you have described, is that a method
4 that you used when you were looking at the heart of
5 Mr Bayoh?
6 A. It is, yes.
7 Q. So you did all of that mapping and assessment and what
8 were your views in relation to the heart?
9 A. It was completely normal.
10 Q. I think in paragraph 56 of your Inquiry statement you
11 say:
12 "I wanted to make sure that there was no heart
13 disease that would have played any role in his death."
14 How satisfied were you, having carried out this
15 method, that there was no heart disease that had played
16 any role in his death?
17 A. Very satisfied, and all of the sections were also
18 reviewed by every forensic pathologist in my department
19 so another five forensic pathologists also looked. We
20 tend to cross-reference with our cases, especially our
21 more difficult cases, so everyone looked at this heart
22 in great detail and we were all of the same opinion that
23 none of us could see anything that was at all worrying
24 for heart disease.
25 Q. Was there anyone objecting to that or putting forward

1 a different view in your own department?
2 A. No, no.
3 Q. As far as you know, if anyone had seen anything that
4 caused concern would they have felt able to raise that
5 with you?
6 A. Absolutely. We do it all the time.
7 Q. Can you help the Chair understand in your own practice
8 how many times you have carried out this method, this
9 assessment?
10 A. Very frequently. I mean I do it in a lot of my natural
11 deaths as well, especially for people who don't have
12 a history of heart disease but I am finding heart
13 disease. So I probably do it at least once or twice
14 a week in cases. So I do it very frequently.
15 Q. Is that throughout your time as a consultant forensic
16 pathologist?
17 A. Yes.
18 Q. In both double-doctor post mortems but also post mortems
19 where there is just one doctor?
20 A. The vast majority of cases will be one-doctor
21 post mortems, most double-doctor post mortems don't
22 require such kind of intricate looking at the heart so
23 the vast majority will be our one-doctor post mortems
24 that I would do this sort of procedure.
25 Q. Thank you. Then you have also come back to the other

1 organs. I think no significant abnormalities found or
2 issues. Can I ask you about the top of page 14, please.
3 You will see that it says:
4 "Left first rib - A fracture is confirmed but there
5 is no evidence of obvious associated haemorrhage and
6 a special stain for iron is negative."
7 I wonder if you could explain this to the Chair?
8 A. When I have gone back to look at the rib I have -- and
9 I found the fracture grossly, I have taken that rib from
10 the body or I have taken the fracture area from the body
11 and I have then dissected that in order for that
12 fracture to be looked at down the microscope because
13 I want to make sure it is a fresh fracture, there is no
14 evidence of healing, and also to look at any reaction
15 that might be associated with it.
16 So in all fractures down the microscope you can see
17 if there's soft tissue haemorrhage, you see red blood
18 cells. It can be difficult sometimes, especially if the
19 tissue is quite broken down and kind of decomposed and
20 what we have in those sorts of situations are special
21 stains we can use that shows up -- stains for iron, so
22 when blood kind of breaks out there is iron in the blood
23 and when that leaks into the soft tissues you can -- it
24 lights up as a kind of a bright blue colour if you see
25 it down the microscope.

1 But again, in post mortem tissue often these special
2 stains don't work as well because the tissue -- the kind
3 of make up of the tissue has been disrupted and the
4 proteins in the tissue have been disrupted or are dead
5 and that is what the lab is looking for the stain to
6 react with. So it is not always -- just because it is
7 negative doesn't necessarily mean it's negative in
8 a post mortem setting, I suppose is what I am trying to
9 say. But what I was trying to see is if there was any
10 definite fresh haemorrhage there, which I couldn't
11 confirm.
12 Q. So you couldn't confirm that there was fresh
13 haemorrhage. But you're aware, as I understand it, that
14 other evidence will be available to the Chair. He has
15 an Inquiry statement at the moment. We have not heard
16 from a person called Professor Freemont, who is
17 an osteoarticular pathologist.
18 A. Yes.
19 Q. We will hear evidence from him later in this hearing, as
20 I understand it. Would it be fair to say he has
21 a specialism that is in bones and fractures that perhaps
22 will be able to assist the Chair more?
23 A. Absolutely.
24 Q. Would you defer to him?
25 A. Absolutely, yes.

1 Q. We will maybe touch on this slightly later, but if we
2 hear from Professor Freemont that the special stains
3 which he instructed show that it was a fresh fracture,
4 is that something you would defer to?
5 A. Yes.
6 Q. And also in relation to the timing of that?
7 A. Yes.
8 Q. Thank you. Looking again, continuing to look at
9 page 14, do we then see that you have detailed here the
10 radiology, you have given the dates of the x-ray, you
11 have commented on decomposition and you have commented
12 on the CT scan, which is 28 May. So we have those
13 details here in your report, and you talk about direct
14 visualisation was advised in relation to that rib
15 fracture. Underneath that you say:
16 "There is well-defined linear lucency in the medial
17 posterior aspect of the left first rib."
18 I wonder if you could explain that paragraph,
19 please?
20 A. So that has come directly from the radiology report. So
21 that's how the radiologist has described what they've
22 seen. It's radiology-speak. To be honest, it's not
23 pathology-speak. What it tells me is that she has seen
24 something there that I need to look at. So I don't
25 think -- it's not being specific as to what it may be,

1 but it's giving me an area to go back and look at.
2 Q. So this was the radiologist advising you to carry out
3 direct visualisation; have another look --
4 A. Yes.
5 Q. -- yourself?
6 A. Yes.
7 Q. And where it said:
8 "There is a similar but less marked appearance of
9 the second left rib in the same position."
10 What did that mean?
11 A. So she saw something in both the first rib and the
12 second rib, and I have then -- and advised that direct
13 visualisation should be used. So I have then gone back
14 to look at both of those areas to see what I can see
15 grossly, and I couldn't see anything of worry in the
16 second rib.
17 Q. Thank you. Then we come on to neuropathology. Taking
18 this short, we see:
19 "Neuropathological examination has demonstrated
20 changes consistent with evolving global ischaemic brain
21 injury. There is no evidence of any significant
22 traumatic injury to the brain and no infectious disease.
23 No natural disease is noted to account for death. The
24 changes all appear secondary to cardiac arrest, with
25 resuscitation and a short survival period."

1 I wonder if you could explain that, because
2 "evolving global ischaemic brain injury" sounds dramatic
3 to people who are listening.
4 A. What has happened is, when Mr Bayoh has gone into
5 cardiac arrest, there is a period of the brain being
6 starved of oxygen and nutrients. He's had rigorous
7 resuscitation over a fairly significant long period of
8 time, so during that time they have been delivering
9 oxygen to the brain to a certain degree, not --
10 certainly not what would normally happen if he was
11 breathing normally for himself, but they've obviously
12 been doing very successful resuscitation to keep
13 a degree of oxygen going to the brain. But even with
14 that happening the brain cells are beginning to die off
15 because they are beginning to become ischaemic and
16 hypoxic, because there's not an adequate amount
17 of oxygen or nutrition getting to the brain. If --
18 for example, the vast majority of people we see who have
19 a cardiac arrest who are maybe resuscitated in their
20 house for a period, for a short period of time and are
21 pronounced dead in their house, we won't see any changes
22 in their brain because it takes a period of time of some
23 sort of perfusion for those changes to continue to
24 develop and to happen for us to see them down the
25 microscope. So because in this case the resuscitation

1 has gone on over a significant period of time those
2 changes have had a chance to develop. It doesn't mean
3 that they were ever going to be able to bring him back
4 or get a pulse back or get a blood pressure back, it
5 just means that reasonably good resuscitation has been
6 happening to try and perfuse the brain but, because the
7 brain has been starved of oxygen for a period of time,
8 the damage is done and there's no kind of coming back
9 from that. But there is a period of time for those
10 changes to develop in the brain for us to see them down
11 the microscope.
12 Q. But this is a part of his -- the process of his death?
13 A. Yes.
14 Q. Rather than some other condition that applied?
15 A. Yes. No, absolutely, it's just the acute changes that
16 are seen because of the hypoxia and resuscitation. It's
17 got nothing to do with anything else.
18 Q. Thank you. Before I move on to page 15 of your final
19 report, I should have asked you to look at something and
20 I forgot, so can I ask you to look at WIT 00045. This
21 is an image which shows -- or should show the first rib.
22 I think you have been shown this and asked to comment,
23 and just for the purposes of identifying where the first
24 rib is, you have obviously given your explanation, and
25 can we see on the top left there's an area highlighted

1 in red?
2 A. Uh-huh.
3 Q. So what would be the left first rib? I should say, you
4 should be able to touch the screen and a circle will
5 appear, if you find that easier. Or you can tell us
6 just from your ...
7 A. Obviously it's a skeleton; the various bones in the
8 body. So it's kind of facing, so the left and right is
9 going to be kind of turned around, if you like. So this
10 will be the left side. So --
11 Q. It's the person's left, effectively?
12 A. Yes.
13 Q. So as the person would experience left, it would be
14 their left?
15 A. Yes.
16 Q. And that's -- where you've identified, that's the left
17 first rib?
18 A. Yes.
19 Q. You described in your evidence earlier that that was
20 an area that was protected by certain tissues of some
21 description. Can you --
22 A. You're deep into the shoulder girdle, so there's lots
23 of muscles surrounding it. The shoulder has quite a lot
24 of muscles. It obviously has a lot of movements that
25 it has to do, so it needs a reasonable amount

1 of control. So there are a lot of big muscles around
2 that area that protects that part of the rib.
3 Q. So looking, first of all, at the image on the top right,
4 that is skeletal. Are you able to see the first left
5 rib in that image?
6 A. That is on --
7 Q. Is that on the right?
8 A. -- the right-hand side.
9 Q. So it would be opposite that?
10 A. It would be opposite that, yes. It doesn't look as if
11 it's on that one -- you've got the -- that's the sternum
12 that I was talking about here, and the other rib would
13 normally come from this joint here and then go all the
14 way round to articulate with the thoracic -- first
15 thoracic vertebra.
16 Q. We see on what would be the right first rib on this
17 image there's a bone that goes underneath. There's
18 another bone. Is that the clavicle?
19 A. So the clavicle goes over. The clavicle is -- it's
20 probably easier to look at it on here. You see the one
21 on here that's almost translucent?
22 Q. Yes?
23 A. That is the clavicle. And it kind of sits -- you can
24 see where it's more solidified on the top right-hand
25 picture. It kind of runs over the first rib.

1 Q. So from the neck or the sternum area to the shoulder?
2 A. Yes. So it goes over the top of it --
3 Q. Horizontally?
4 A. Yes.
5 Q. And the first rib goes underneath that?
6 A. Uh-huh. Yes. So the first rib will start from where
7 I've got number 4 here. That's the first rib going all
8 the way round there. So it's kind of like a horse shoe
9 that sits to the side of the neck.
10 Q. Perhaps we could remove the number 4 and see if we can
11 get a line instead. Although I think it's clear to
12 everyone. But if we remove 4, we can convert that
13 circle into a line. Maybe not at this time of the day.
14 A. If I just press on it ...
15 Q. So you can just drag your finger across. That's it. So
16 that's you pointing to the first rib?
17 A. It's obviously not -- it's not a straight line but
18 it's --
19 Q. Curving round --
20 A. -- curving round.
21 Q. Thank you. Then you were talking about the tissue. Can
22 we see on the bottom right-hand side, I think this is
23 from the back, can you see some of the muscles that
24 surround the area? Where do we see those?
25 A. So that's the back of the body, that's your back

1 muscles. You've got your scapula, your kind of wing
2 bone that you can feel. You've got a lot of muscles
3 that tract on to that. So when you move that
4 the muscles will contract. So that is the kind of --
5 this is the scapula here and these are very large
6 muscles that are all attached, going towards the neck
7 and down towards the back. So these are the muscles
8 that I looked at when I did the back dissection, when --
9 so this is the kind of spine coming down here. You
10 would have had -- you've got skin on this other picture.
11 You would have had obviously skin. So I have taken the
12 skin off to look at these muscles for haemorrhage
13 underlying.
14 Q. And on the bottom left-hand side we see an image of
15 a neck, or part of a neck. Is that the type of tissue
16 that is lying over the -- and on top of the first rib?
17 A. Yes. So you will have fatty tissue, you will have
18 muscle and then you will have skin.
19 Q. Then can we look at 16, which is the next image. We may
20 be hearing further evidence about these images, but do
21 you see the small image there on the left-hand side?
22 There is a yellow zigzag line. If we hear evidence that
23 that is indicative of the area of the fracture in the
24 first left rib, would you agree that that is reasonably
25 accurate?

1 A. Yes, yes.
2 Q. Thank you. We can leave that to one side now. I would
3 like to move on to page 15, if I may. This is a section
4 of your final report. It covers two and a half pages,
5 and it's a detailed narrative part of the report and
6 it's headed up:
7 "Final CNS Autopsy Diagnosis
8 "Brain Evolving Global Ischaemia
9 "Conclusions"
10 I would like you to explain to everyone what this
11 section of the report is about and why it's in this
12 format.
13 A. So the conclusion is the final part of the report that
14 hopefully brings everything together, everything from
15 the external -- background circumstances, external
16 examination, internal examination and all the extra
17 investigations that are undertaken, and it tends to
18 summarise the various points that are important in the
19 case, ultimately working up to explain why we have come
20 to a specific cause of death.
21 MS GRAHAME: So in this section, page 15 first of all, you
22 talk about the circumstances, the use of PAVA and
23 CS spray, the blows with the baton, the handcuffs, the
24 leg restraints and you mention respiratory arrest going
25 into cardiac arrest. Is that a summary of the

1 circumstances from the general background information
2 that you have been provided?
3 A. Yes.
4 LORD BRACADALE: Ms Grahame, I wonder whether this might be
5 a point to stop, since we are on to a kind of
6 summarising chapter really now. So I think we will stop
7 there and we will continue at 10 o'clock tomorrow
8 morning.
9 (4.11 pm)
10 (The Inquiry adjourned until 10.00 am on Wednesday,
11 10 May 2023)
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 INDEX

2

3 DR KERRYANNE SHEARER (called) 1

4

5 DR KERRYANNE SHEARER (affirmed) 2

6

7 Questions from MS GRAHAME 2

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3