

Wednesday, 18 October 2023

1  
2 (10.00 am)  
3 **LADY HALLETT:** Morning, Mr O'Connor.  
4 **MR O'CONNOR:** Good morning, my Lady. Our first witness this  
5 morning is Professor James Rubin.  
6 **PROFESSOR JAMES RUBIN (affirmed)**  
7 **Questions from COUNSEL TO THE INQUIRY**  
8 **MR O'CONNOR:** Can you give us your full name, please.  
9 **A.** Yes, I'm Professor Gideon James Rubin.  
10 **Q.** Professor Rubin, you have kindly prepared a lengthy  
11 statement for us. We can see the first page of it up on  
12 screen. On the last page, which we don't need to see,  
13 you have signed the statement, below a statement of  
14 truth indicating your belief that the contents of  
15 the statement are true, and that is dated  
16 21 August 2023; is that right?  
17 **A.** Yes.  
18 **Q.** Thank you.  
19 Professor, you are a professor of psychology and  
20 emerging health risks at King's College London,  
21 I believe?  
22 **A.** Yes.  
23 **Q.** At the very start of your statement, in fact on the  
24 page we can see now, you provide a little detail about  
25 your personal area of academic expertise, which is of

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1 advice through SAGE about issues concerning, as it says,  
2 behaviour and communications in the general public.  
3 **Q.** We're obviously familiar with the structure of SAGE and  
4 its subcommittees, as that structure existed in 2020,  
5 and we've heard that very similar structures existed in  
6 earlier instances where SAGE was summoned and it sounds  
7 like that was one of them?  
8 **A.** Yes.  
9 **Q.** You said you were an ex officio member of that  
10 committee. What did you mean by that?  
11 **A.** So at the time I was a post doctoral researcher. I was  
12 working on a project that was led by Professor Michie  
13 analysing the data that the Department of Health  
14 communications team were gathering in terms of how  
15 the public were responding to the pandemic.  
16 Professor Michie asked if I could join the committee to  
17 provide my insights from analysing that data. I was  
18 quite a junior member at the time so I think I wasn't  
19 rightly a full member.  
20 **Q.** I see.  
21 **A.** But I was attending to provide data from the surveys  
22 I was analysing.  
23 **Q.** I see. So you were amongst the independent academic  
24 members of the committee but not, at least in your eyes,  
25 perhaps, a full member in that regard?

3

1 great relevance to this Inquiry. You describe your  
2 personal expertise as being "in understanding how people  
3 perceive novel health risks and how those perceptions  
4 affect their behaviour and wellbeing", and you then give  
5 a list of events on which you have published studies in  
6 this area, starting with the 7/7 bombings, and if we can  
7 go over the page we can see that the list goes on to  
8 cover matters such as the swine flu pandemic in 2009,  
9 Ebola outbreak, the poisoning of Sergei Skripal and so  
10 on.  
11 The swine flu pandemic is one of the matters that  
12 you mention there, Professor, and I think it's right to  
13 say that during that pandemic in this country, in 2009,  
14 going through into 2010, you served on a committee  
15 called SPI-B&C; is that right?  
16 **A.** Yes, I was an ex officio member of the committee, but  
17 yes.  
18 **Q.** Tell us, first of all, if you will, what the B and C  
19 stand for and what that committee did?  
20 **A.** Yeah, so that's the scientific pandemic influenza  
21 committee on behaviour and communications, which is the  
22 B and C.  
23 **Q.** Yes.  
24 **A.** It was compared by Professor Susan Michie throughout  
25 the swine flu pandemic, and it focused on providing

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1 **A.** I think it was -- yeah, I was clearly not a full member  
2 but I was attending the meetings.  
3 **Q.** That, in any event, was 2009/2010, and you describe in  
4 your statement how a decade or so later, in early 2020,  
5 right at the outset of the pandemic, you were asked to  
6 serve both on NERVTAG and on SAGE. Is that right?  
7 **A.** Not quite. So I was on NERVTAG prior to the 2020  
8 pandemic.  
9 **Q.** All right.  
10 **A.** And then partly as a result of being the behavioural  
11 scientist on NERVTAG, I was asked to attend the first  
12 SAGE meeting about Covid-19 and then, following on from  
13 that, to chair the SPI-B committee.  
14 **Q.** I see. NERVTAG, of course, as you indicate there, was,  
15 as it were, a standing committee, very different to SAGE  
16 in fact?  
17 **A.** Yes.  
18 **Q.** Which exists regardless of whether there is an emergency  
19 under way. We will hear a lot more about NERVTAG this  
20 afternoon when Professor Horby comes to give evidence.  
21 So you were, as you say, serving on that committee,  
22 and it was as a result of your involvement in that  
23 committee you think that you were asked to serve on SAGE  
24 when it was stood up, as they say, in early 2020?  
25 **A.** Yes, I believe so. I had also -- as you had showed on

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1 the first page of my statement, I've been involved in  
 2 various different disasters and public health crises  
 3 over the years. I had also been, prior to the Covid-19  
 4 pandemic, on several SAGE exercises relating to other  
 5 issues that might affect the UK, and so I think  
 6 Patrick Vallance was aware of me, and I think those two  
 7 things combined led to me being invited to attend the  
 8 first meeting.

9 **Q.** Yes. As you say, as we know, in due course,  
 10 the committee that became known as SPI-B was established  
 11 a month or two later. Was it at least in part on your  
 12 initiative that that committee came to be established  
 13 in 2020?

14 **A.** I think it was convergent thinking in a way. Certainly  
 15 at the time, because I was aware of SPI-B&C during  
 16 the swine flu pandemic and the work it did, my feeling  
 17 was we were probably going to need something similar for  
 18 the Covid pandemic. I did raise it at one of the early  
 19 SAGE meetings and I think Sir Patrick and Sir Chris took  
 20 it away to think about, and I think they agreed that,  
 21 yes, it was going to be needed. So I can't remember  
 22 the exact dates but it was set up in February 2020.

23 **Q.** Yes. Well, I was going to show you, in fact,  
 24 the minutes of the seventh SAGE meeting on 13 February,  
 25 which was the meeting, as we will see, where

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1 for the committee. And then, as you can see, it was  
 2 agreed that a group focusing on these kind of issues --  
 3 and more, this is only, you know, a potted summary of  
 4 the kind of things we looked at -- would be useful.

5 **Q.** Do we take it then that you drafted these paragraphs?

6 **A.** I didn't draft the paragraphs. This is a summary from  
 7 the SAGE secretariat as what I said during the meeting.

8 **Q.** I see. I see. Well, I'm not going to go through it in  
 9 fine detail, Professor, but just one point I wanted to  
 10 pick up from these paragraphs was, for example, if we  
 11 look at paragraph 24 what is said there is that:  
 12 "At this stage, public messaging should stress the  
 13 importance of personal responsibility and responsibility  
 14 to others, in order to drive positive public  
 15 behaviours."  
 16 Then, just running one's eye down the following  
 17 paragraphs, the idea of the importance of messaging is  
 18 repeated many times, is it not?

19 **A.** Yes.

20 **Q.** Was the idea of messaging then one of the key things in  
 21 your mind as to what -- the type of area in which this  
 22 new committee might assist?

23 **A.** Yes. During a crisis one of the -- one of the primary  
 24 tools the government have to help the public to engage  
 25 in protective behaviour is to communicate with

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1 the decision was taken to set up SPI-B.

2 So if we just look on, if we can go -- on that page  
 3 we see, as I say, SAGE 7 on 13 February. If we can go  
 4 over to the next page, please, we just can see that list  
 5 of attendees at the top, many of the names becoming more  
 6 familiar to the Inquiry at least because of the evidence  
 7 we've heard.

8 The fourth name down, Brooke Rogers,  
 9 Professor Rogers is also a behavioural scientist,  
 10 I believe and we will hear that she became involved in  
 11 your committee in due course; is that right?

12 **A.** Yes.

13 **Q.** Then running down the list, we see your name as well as  
 14 some others with whom we're familiar.

15 If we could go over, please, to page 4 of this  
 16 document, we see the subheading "Behavioural science",  
 17 Professor, and there are then a series of numbered  
 18 paragraphs which, in summary, describe the need for  
 19 consideration to be given to matters of -- relating to  
 20 behavioural science in the developing pandemic; is that  
 21 a fair summary?

22 **A.** Yes, I think I was asked to explain what the basic  
 23 behavioural science considerations were at that  
 24 particular point of the pandemic. Bearing in mind this  
 25 was quite early, that was my attempt to summarise them

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1 the public as to what those behaviours are, what they  
 2 should be doing, why they should be doing it, and so on.

3 I'd emphasise it's not the only thing we were  
 4 considering. There are plenty of other things that  
 5 aren't communication that are important behavioural  
 6 science, but it is certainly one of them.

7 **Q.** So, for example, paragraph 25:  
 8 "Public messaging should stress the efficacy of  
 9 certain behaviours ..."  
 10 Paragraph 26:  
 11 "National messaging should be clear and  
 12 definitive ..."  
 13 And paragraph 28, the final sentence:  
 14 "HMG needs to understand the logic behind those  
 15 behaviours in order to identify solutions and to improve  
 16 messaging."  
 17 All these points about understanding the best  
 18 messaging to provide as the pandemic progresses?

19 **A.** Yes.

20 **Q.** If we can look at the passage immediately below, we see,  
 21 as you've already indicated, Professor, under "Actions",  
 22 the decision recorded:  
 23 "SPI-B ... subgroup to be established to provide  
 24 behavioural science advice via SAGE ..."  
 25 Just help us, is there any significance in the fact

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1 that, whereas the previous committee in 2009 was called  
2 SPI-B&C, the C standing for communications, the C  
3 doesn't seem to have made it on to the title of  
4 the committee in 2020?

5 **A.** Yes. I initially thought we would be a simple  
6 replication of the original committee and I think  
7 I proposed SPI-B&C. The feedback that we had from  
8 Sir Patrick and the secretariat were communication is  
9 more of an operational matter and they would prefer that  
10 aspect to be dealt with within government and for us to  
11 focus on behaviour. Which I think was a reasonable  
12 point.

13 In practice, we did often come back to communication  
14 because there is a science behind communication, and so  
15 many of our papers did talk about how best to  
16 communicate with the public.

17 So yes, the title was changed. I think the content  
18 of what we were talking about didn't change.

19 **Q.** It does seem a little odd to see a list or a description  
20 of the purpose of the committee in those paragraphs  
21 emphasising so heavily the importance of messaging, and  
22 then, as you say, for a decision to be taken to exclude  
23 communications from the remit of that committee.

24 **A.** As I say, my understanding is the concern was that  
25 communication was a matter for government. In a way, it

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1 **A.** Yes, it did sit for the rest of the pandemic. I think  
2 it stood down, I can't remember the exact date, at some  
3 point in 2022.

4 **Q.** I think it was February 2022.

5 **A.** Okay.

6 **Q.** You were appointed the chair at the outset?

7 **A.** I was appointed as the chair at the outset and then we  
8 very rapidly moved to a system of three co-chairs,  
9 simply because the workload of chairing was --

10 **Q.** Yes.

11 **A.** -- very heavy, and I stood down as chair in, I believe,  
12 June of 2021.

13 **Q.** Yes. As you say, within a few weeks of the committee  
14 starting, it appears Professor Brooke Rogers, whose name  
15 we saw on that list, and also Professor Lucy Yardley,  
16 who is going to give evidence after you, were appointed  
17 co-chairs along with you?

18 **A.** Yes, Brooke was initially the deputy chair, and then we  
19 moved, as I say, into this triumvirate arrangement.

20 **Q.** I see. All right.

21 Can I take a step to one side, Professor, and just  
22 ask you a couple of more general questions about  
23 behavioural science.

24 Could we look, please, at paragraph 4.1 of your  
25 witness statement, on page 24. You attempt a definition

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1 was, I suspect, a misunderstanding of what we meant by  
2 communication. We meant the science of communication  
3 rather than actually crafting the messages and putting  
4 the messages out, which would be an operational matter.  
5 So I think it was more crossed wires as to what the C  
6 actually meant in practice, and, as I say, in practice  
7 it didn't actually alter what we were talking about.

8 **LADY HALLETT:** So if they tried to exclude it from your  
9 remit, they didn't exclude it from your remit?

10 **A.** I think what they wanted to exclude from our remit was  
11 actually designing the messages and doing  
12 the communicating, which we didn't do, but we did carry  
13 on talking about science of communication, because it's  
14 such a central part of, you know, the job that we do.

15 **MR O'CONNOR:** As we will see, Professor, in fact this is  
16 an area that we will be covering in the main with  
17 Professor Yardley, tensions did develop, did they not,  
18 on the question of government communications and your  
19 role in advising on those messages or otherwise?

20 **A.** Yes.

21 **Q.** Thank you.

22 Just to ask you one or two more questions, then,  
23 about the development of the committee. We see it being  
24 set up here in mid-February. Is it right that the  
25 committee then sat for the rest of the pandemic?

10

1 of behavioural science in that paragraph of your  
2 statement, Professor. You say:

3 "'Behavioural science' is a catch-all term that  
4 describes the use of theories, models and evidence to  
5 understand human behaviour."

6 You, of course, as we've said, are a psychologist by  
7 training. Can you expand on that description, just  
8 a little bit, with particular regard to the work that  
9 was undertaken by your committee?

10 **A.** Absolutely. I mean, it is slightly tricky because  
11 behavioural science, it's not quite a discipline in its  
12 own right. I think it's moving in that direction but  
13 actually it's, as it says on the tin, it's the science  
14 of trying to understand human behaviour and what  
15 influences it.

16 **Q.** Yes.

17 **A.** It draws on these various different disciplines.  
18 Psychologists, many of us are very interested in  
19 behaviour, but we approach that with a particular lens,  
20 a particular set of models and theories. Other  
21 disciplines, anthropology, sociology, they bring  
22 a different perspective on matters, looking at how  
23 culture or how structures within society can guide  
24 behaviour and limit behaviour. In terms of how SPI-B  
25 pulled all that together, we had quite

12

1 a multidisciplinary selection of professors.

2 **Q.** Yes. Just to interrupt you, we'll come in a minute --

3 in part of your statement you have a very interesting

4 list of all the different disciplines that were

5 represented and we will come to that in a moment.

6 **A.** Certainly. We were looking at the specific behaviours

7 that would be important during the pandemic. We were

8 looking, for example, at self-isolation, what governs

9 whether somebody is able to adhere to self-isolation or

10 not, or we would look at matters of adherence to social

11 distancing in specific groups. Young men, for example,

12 what are the particular challenges for that group around

13 adhering to social distancing?

14 I think over the course of the pandemic we produced

15 94 advice papers or contributed to 94 advice papers for

16 government, they tended to focus on specific topics,

17 specific areas, with a few more general papers about

18 a whole range of different behaviours thrown in. But we

19 kind of looked at individual behaviours in some depth

20 and tried to understand: are people adhering? What are

21 the challenges in adhering? And how can government

22 support people to help them adhere better?

23 **Q.** Yes, thank you.

24 The words that you use in this paragraph, and which

25 you used a moment ago, is "understand[ing] human

13

1 their hands", no.

2 **Q.** Yes. Professor Woolhouse of course is a modeller, and

3 so perhaps from his point of view you can't provide him

4 with the types of data or statistics that he could feed

5 into one of his models, but I think what you're saying

6 is that you are still able to give some sort of

7 indication as to the likely impact, for example, of

8 certain messaging or direction from the government?

9 **A.** I think that's fair. I'd expand slightly. We can also

10 help understand current levels of adherence, current

11 levels of behaviour. I was one of the team that helped

12 Professor John Edmunds, who I think you might take

13 evidence from, looking at his CoMix study, which was

14 a survey looking at how many contacts do people have

15 during their day-to-day life. Designing the kind of

16 questions to capture that is a behavioural science

17 issue, so behavioural scientists can help in

18 understanding the levels of human behaviour. It does

19 become quite tricky, because of the complexity involved,

20 in predicting, you know, next month or next week it's

21 going to be 38%.

22 **Q.** Yes. Yes.

23 Just moving on a little bit, Professor, behavioural

24 science, particularly in the context of large

25 organisations, for example the government, is often

15

1 behaviour". Understanding why people act in a certain

2 way is, of course, something that can be done after

3 the event. Retrospectively, you look at what someone's

4 done and try and understand why they've done it. But as

5 the SAGE minutes that we looked at a moment ago suggest,

6 at least one of the things that was important in

7 the context of the pandemic was predicting how people

8 would behave in given circumstances, and then seeking to

9 influence their behaviour prospectively, for example

10 through messaging.

11 Professor Woolhouse gave evidence to this Inquiry

12 earlier this week, and one of his observations was that

13 "behavioural science is not predictive". Is he right

14 about that?

15 **A.** Partially. I think if you asked us to predict what

16 percentage of people will adhere to the following

17 behaviour next week, we don't have a crystal ball and

18 I can't give you a number. If you ask us what will

19 influence whether people are more likely to adhere or

20 less likely to adhere and therefore what interventions

21 should we put in place to help people to adhere to this

22 recommendation, we can do that.

23 So we can tell you what factors predict someone's

24 behaviour, but I can't give you a prediction of, "It

25 will be 37.8% of young men who are going to be washing

14

1 associated with so-called nudge theory. You explain in

2 your witness statement, and perhaps we can look at it,

3 it's paragraph 21.7 on page 91, you explain that SPI-B

4 was not a so-called nudge unit. You say:

5 "Instead of nudging, SPI-B's work focused on

6 providing support to people to help them to engage with

7 the measures that were openly recommended by public

8 health experts."

9 Can you help us with this area, Professor: first of

10 all, briefly explaining what nudge theory is and,

11 secondly, perhaps expand on that statement that SPI-B

12 wasn't in the business of nudging?

13 **A.** Sure. So, first of all, nudge theory isn't a theory, it

14 doesn't have a set of hypotheses, it's a -- it's a term

15 for a set of interventions that can be used to help

16 people to engage with certain specific behaviours.

17 Those largely relate around making some behaviours

18 easier for people to do. So the classic example is

19 pension auto-enrolment. So rather than having people

20 opt in to receive their pension, instead you say that

21 people will automatically be opted into that pension and

22 they'll have to opt out if they don't want it, and that

23 then increases the rates of people taking advantage of

24 pension provision.

25 Or you could have what drink do you place at

16

1 eye level on a supermarket shelf, is it the sugary drink  
2 or is it the diet version of that drink? And that will  
3 influence how many people pick that drink from  
4 the middle shelf.

5 SPI-B didn't consider those options, or rather it  
6 wasn't a focus for us. There are a whole range of other  
7 things that determine human behaviour that aren't to do  
8 with that kind of -- it's called choice architecture.

9 So, for example, if we take the example of  
10 self-isolation, if we want to improve adherence to  
11 self-isolation, one of the big issues is: can people  
12 financially support themselves while self-isolating? If  
13 that's a barrier to self-isolating, the solution is you  
14 might need to give them more money to do that. That's  
15 not a nudge.

16 So SPI-B was focused on the whole range of different  
17 things that influence behaviour, one part of which is,  
18 you know, the set of techniques you might term nudge.  
19 We would have looked at those. I can't think of any  
20 actual examples where we did recommend them in our  
21 papers. Personally I wouldn't have been averse to  
22 recommending them if shown to be effective, but we were  
23 looking at a much wider set of factors that affect  
24 behaviour.

25 **Q.** So the disinclination to think of SPI-B as a nudge unit

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1 a fortnight. That was hopelessly optimistic of us. We  
2 met very regularly during the first period, and I think  
3 the kind of battle rhythm, as it were, was dictated by  
4 the pace of requests coming from government, which in  
5 turn was partly predicated on the nature of the pandemic  
6 at that time. So it changed over time. To start with,  
7 we were certainly very busy.

8 **Q.** Yes. Now, you've mentioned requests coming from  
9 the government. We've heard a lot from members of  
10 SPI-M-O about the so-called commission basis on which  
11 they worked. In other words, it wasn't for them to go  
12 away and think up how to deal with the pandemic, but  
13 rather SAGE would give them issues that SAGE wanted  
14 SPI-M-O to address, they would think about them, and  
15 draft some form of statement or paper, and report back  
16 to SAGE.

17 Was it the same with SPI-M?

18 **A.** Broadly, yes. So we did take commissions from SAGE, so  
19 SAGE would ask us to write a paper on X, Y or Z, and we  
20 would do that. We also had commissions, particularly  
21 later on in the pandemic, that came directly from  
22 departments in government, and again we would tackle  
23 those.

24 We were able to write self-initiated papers, and  
25 there are examples where we have done that. Those

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1 is not necessarily that there's anything wrong with  
2 nudging, it's that you were looking at things on a much  
3 broader level?

4 **A.** Well, I think it's fair to say there's a debate within  
5 the academics who took part in SPI-B in terms of their  
6 views on nudge. My personal position is I have nothing  
7 against it as long as it's effective, and that's a big  
8 question in its own right.

9 **Q.** Yes.

10 **A.** But in practice, no, I -- there may be things in our  
11 papers that you could label nudge. I can't think of  
12 them off the top of my head, and we looked at lots of  
13 other things.

14 **Q.** Sure.

15 Let's move on. Thank you for that.

16 Back to a few questions about the committee, if  
17 I may, and the ways in which the committee worked. We  
18 saw then that it, the committee, was established in  
19 mid-February 2020 and I think the first meeting was  
20 a week or ten days later, I think it was 24 February.

21 How often thereafter did it meet, and was it  
22 a question of having a set rhythm, meeting for example  
23 the same day every week or fortnight, or did it only  
24 meet when it needed to?

25 **A.** The intention originally was for it to meet once

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1 particularly came about where participants felt there  
2 was a particular issue in danger of being overlooked.  
3 I could see in Professor Yardley's statement she gives  
4 an early example of easing of restrictions and the need  
5 for SPI-B to advise on that, and we did write a paper on  
6 that. I can remember our police and security subgroup  
7 became quite concerned part way during the pandemic  
8 about the rise in tension within certain sections of  
9 the public and the potential for public disorder arising  
10 from that. They came to me with that issue. I took it  
11 to SAGE. We agreed they should write a paper on that  
12 and it was discussed in a SAGE meeting and then sent to  
13 the Home Office.

14 So we could and did self-initiate papers. The more  
15 normal route was for it to be reactive and to receive  
16 commissions.

17 **Q.** Yes.

18 **A.** I would also -- if I can, I would also say it gets a bit  
19 blurry as well because there were also, particularly  
20 later in the pandemic, issues where a government  
21 department would ask us a question and we would say, "We  
22 don't quite like that question, we'd like to change it  
23 to something on this", and there would be a bit of  
24 negotiation that would go on. There would also be  
25 instances where we would raise a problem and it would

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1 then be on the radar for a government department because  
2 we had raised it, and then they would ask us what we  
3 could do about it. So there was a -- it became a bit of  
4 iteration, particularly later in the pandemic, that  
5 I think was very useful.

6 **Q.** Sure. On a similar topic, again we've heard from  
7 SPI-M-O members about the idea of producing a consensus  
8 report back to SAGE, the idea being that, rather than  
9 reporting back with a document which demonstrated  
10 the variety of views held by members of the committee,  
11 they would try to arrive at a single consensus position  
12 which would then be reported back on whatever  
13 the question was.

14 Again, did SPI-B adopt the same approach or not?

15 **A.** Yes, and our papers did report the consensus of  
16 the group. Where there were differences of opinion  
17 within the group we would simply say that within  
18 the paper. And there are some examples, for example  
19 whether it was a wise idea to allow alcohol in large  
20 gatherings when they were re-opened. There were  
21 different views on that within the group, and we simply  
22 said, "We have divergent opinions on this".

23 **Q.** Did you then, to take that example, explain what  
24 the minority views were or did you simply say that they  
25 existed without expanding on them?

21

1 yes, people did drift in and out of things for --

2 **Q.** As we've all discovered, Zoom meetings are very easy to  
3 attend, aren't they?

4 **A.** Yes.

5 **Q.** But the list, then, we see here the first few, I'm not  
6 going to read them out, but psychologists,  
7 epidemiologists -- if we can go over the page -- you  
8 mentioned anthropology, criminology, marketing,  
9 paediatrician, ethicist, so a very broad range of  
10 expertise represented on the committee?

11 **A.** Yes. And I should apologise to my colleagues as well if  
12 I've miscategorised them in this list. It can be  
13 difficult with experts to pigeonhole them as "You're an  
14 epidemiologist" or "You're a sociologist", but this is  
15 my best shot.

16 **Q.** Well, you haven't put any names in anyway, so no one  
17 knows exactly what you're calling them.

18 May I just ask, if we can -- I think it's on the  
19 same page, actually, if we can go down a little bit, in  
20 fact it's on -- yes, down a little bit.

21 You indicate at paragraph 7.5, so at the bottom, you  
22 refer there to the committee having been involved in  
23 undertaking work in the context of inequalities and  
24 stratification. Is that right?

25 **A.** Yes.

23

1 **A.** Oh, gosh, it's been a while since I read that paper.

2 I -- yes, I think we did explain, you know, why those  
3 different views existed.

4 **Q.** Now, you've already told us, Professor, that you think  
5 that SPI-B probably produced about 94 papers, clearly  
6 an awful lot of work was undertaken during the pandemic,  
7 and as you've also mentioned, the membership of  
8 the group was very varied. I said I was going to take  
9 you to that list that you helpfully provide in your  
10 statement, and perhaps we can look at that now.

11 Yes, so it's paragraph 7.2 of your report, and you  
12 say that:

13 "By the end of the process ..."

14 So I take it you mean by 2022?

15 **A.** Yes.

16 **Q.** "... 48 experts had taken part in SPI-B."

17 Again, we will see the list, but presumably not all  
18 of them contributing all the time. Did people come and  
19 go depending on what you were considering?

20 **A.** Yes. The intention was always that people would join  
21 for the meetings that they were experts in and not for  
22 those that they weren't. In practice, because these  
23 were interesting topics, everyone tended to turn up to  
24 everything, and we did, as a result of that, move to  
25 a different system part-way through the pandemic. But

22

1 **Q.** Then if we can look over the page, you give some  
2 examples of papers that the committee produced in that  
3 area, so, for example, number 2 there, the impact of  
4 school closures on children from minoritised ethnic  
5 communities, and a little bit further down, number 4,  
6 unequal policing of communities and of specific groups  
7 within those communities, and, underneath that, unequal  
8 access to outdoor space according to socioeconomic  
9 circumstances.

10 First of all, with particular regard to these types  
11 of papers, Professor, were you aware of any policy  
12 changes taking place as a result or driven by the work  
13 that your committee did?

14 **A.** That was always a particular difficulty for the group.  
15 We didn't see what impact our papers were having, so  
16 the papers would be delivered either up to SAGE or they  
17 would be delivered direct to the department, and then we  
18 wouldn't see what would happen behind that curtain. And  
19 I genuinely don't know whether -- you know, I assume  
20 they were read, but I don't know whether they were  
21 weighed up against other conflicting priorities within  
22 government or other data they were aware of that we  
23 weren't, how it influenced policy. We didn't get  
24 feedback on those issues, or where we did get feedback,  
25 it was very top line, it was, you know, "Your paper has

24

1 been well received", there wasn't much specific detail.  
 2 So by and large I don't know what impact our papers had.  
 3 **Q.** The phrase you use in your statement is that your papers  
 4 seemed to disappear into a black hole?  
 5 **A.** Yes.  
 6 **Q.** Did you ask for more detailed feedback on what had  
 7 happened?  
 8 **A.** We raised it on several occasions with the secretariat.  
 9 I didn't push for specific feedback from government  
 10 departments on the basis that, you know, they are very  
 11 busy as well trying to deal with this stuff and if they  
 12 wanted to give us feedback, if they wanted to tell us,  
 13 "You've misunderstood this issue" or "Why aren't you  
 14 talking about this paper from Southampton that we're  
 15 aware of that you don't seem to be aware of?", they  
 16 would have done that.  
 17 Sorry, does that answer your question?  
 18 **Q.** Yes. Yes, it does, thank you.  
 19 Just sticking with this area of inequality for  
 20 a moment, did you ever consider issues relating to  
 21 domestic abuse in the home during isolation and  
 22 lockdown?  
 23 **(Pause)**  
 24 It may be that --  
 25 **A.** I genuinely can't recall, I'm afraid.  
 25

1 the committee worked, Professor, what contact, if any,  
 2 did you have with the devolved administrations in  
 3 Scotland, Wales and Northern Ireland?  
 4 **A.** So the committee provided advice to the UK Government,  
 5 rather than to the individual DAs. We did have  
 6 observers from each of the DAs who attended the group  
 7 sessions. Occasionally they would voice issues about,  
 8 you know, "We don't think that would work in  
 9 Northern Ireland, for example, because we have  
 10 a different community set-up that you haven't  
 11 considered". We also had two members of the group who  
 12 sat on the Scottish and the Welsh advisory groups,  
 13 Professor Stephen Reicher and Professor Ann John, who  
 14 was one of the co-chairs, and I think that was  
 15 the extent of our involvement. So we were primarily  
 16 an advisory group for the UK Government.  
 17 **Q.** You mention the Scottish and Welsh advisory groups.  
 18 Were they specifically behavioural science advisory  
 19 groups or more general scientific advisory groups, or  
 20 don't you know?  
 21 **A.** I believe Professor John and Professor Reicher cover  
 22 this in their statements. I think they would be better  
 23 sighted to give you advice on that.  
 24 **Q.** Fine. Well, as you say, we have their statements and we  
 25 can pick that detail up there.  
 27

1 **Q.** I think you make it clear in your statement these are  
 2 only supposed to be examples, it's not an exhaustive  
 3 list of your work in this area.  
 4 **A.** We discussed inequalities through many, if not most of  
 5 our papers.  
 6 The other thing we discussed, which I think is also  
 7 important, is we couldn't hope to cover everything, so  
 8 one of the key things we kept coming back to time and  
 9 time again was the importance of co-producing guidance  
 10 with members of affected communities or affected  
 11 sections of society. I think I give a list in my  
 12 statement of just in April the number of papers where we  
 13 said: you must start co-producing your guidance with  
 14 people who are affected by it. Precisely for the point  
 15 you've raised, that those individual groups, who we  
 16 might have missed, would then be able to discuss how  
 17 that guidance is affecting them and think of other  
 18 solutions, things we might not have thought of. And  
 19 that was a core part of what we were saying to  
 20 government in our reports.  
 21 **Q.** Did you see a change of approach in that regard?  
 22 **A.** They were certainly interested in various aspects of it.  
 23 I don't know how effective it was, if I'm perfectly  
 24 honest with you, no.  
 25 **Q.** Another topic, but still about the way in which  
 26

1 I next want to cover with you, Professor, just a few  
 2 points you make in your statement about the remit of  
 3 the committee and the boundaries of what it was and  
 4 wasn't doing. So for those purposes if I could take you  
 5 first to paragraph 6.3 of your statement at page 37, you  
 6 make a series of points about the way in which the  
 7 committee worked.  
 8 We see here, at the top of paragraph 6.3 you make it  
 9 clear that:  
 10 "... SPI-B focused on behavioural issues relating to  
 11 the pandemic and on the impact of interventions on  
 12 wellbeing."  
 13 Which we've discussed.  
 14 "It did not advise on what interventions should be  
 15 pursued to reduce transmission rates, except in the  
 16 context of pointing out where adherence to specific  
 17 guidance was already high ..."  
 18 And so on.  
 19 So is the point you're making here that there was  
 20 no, as it were, epidemiological theme to your work?  
 21 **A.** Yeah, absolutely. And it would have been quite odd if  
 22 there was, given that we had a panel of world leading  
 23 epidemiologists also in the group, so we didn't want to  
 24 step on their turf.  
 25 **Q.** We did notice that there was an epidemiologist on your  
 28

1 committee.

2 **A.** Yes.

3 **Q.** But with a sort of watching brief perhaps?

4 **A.** With a watching brief, and also there is an epidemiology  
5 within sociology as well, the two things can be kind of  
6 closely tied together, so yeah, the boundaries get  
7 blurred but I think the remit wasn't blurred.

8 **Q.** Yes. Secondly, if we can go over the page to page 38,  
9 and this is a point we've already covered really, you  
10 say that SPI-B was largely reactive, the role was to  
11 respond to questions that arrived from SAGE or  
12 government departments, sometimes you found it necessary  
13 to challenge the assumptions that lay behind the  
14 questions. Those are points, I think, we have covered  
15 already.

16 **A.** Yes.

17 **Q.** If we can move on to page 39, this is at paragraph 6.5,  
18 you say:

19 "Third, despite the similarity in names, SPI-B did  
20 not operate in the same way as SPI-M."

21 The point you're really making here, Professor,  
22 I think, is that there was no function within SPI-B of  
23 conducting, as it were, a rolling analysis of data as it  
24 came in?

25 **A.** Yes, that's correct. We did see data coming in. There  
29

1 communications team, the Cabinet Office communications  
2 team. They were conducting a whole series of focus  
3 groups and polling and field trips. I often felt we  
4 weren't really seeing all of that data and it would have  
5 been useful to see it.

6 So no, I'm sure there were lots of other things  
7 floating around in the system that we could have used  
8 but we didn't see.

9 **Q.** I want to take you back to some of those other  
10 committees and how, as it were, you slotted in to  
11 the larger picture in just a moment.

12 Before we do that, though, let's just finish this  
13 list of points you make here. So if we can go over the  
14 page again to paragraph 6.9, the last of these points  
15 you make about the sort of remit or scope of  
16 the committee is you say that SPI-B did not provide  
17 behavioural data for use in epidemic modelling. What do  
18 you mean by that?

19 **A.** I think this is the point we covered earlier in your  
20 questions, we didn't provide those data on "38% of  
21 people will do X in following weeks".

22 **Q.** I see. I see. Well, let's go then, if we may, and come  
23 back to that point you just mentioned about, if you  
24 like, the overlap with other government -- other parts  
25 of government that were engaged in behavioural science.

31

1 were rolling analyses of behavioural data being carried  
2 out, but they weren't being carried out by SPI-B.  
3 SPI-B was a group of volunteer academics, and I don't  
4 think it would have been right to ask us to conduct  
5 detailed analyses on a rolling basis. And we did not do  
6 that.

7 **Q.** One of the other themes that comes up in your statement  
8 is actually a wish that you had had more access to  
9 government data. So perhaps you're making a slightly  
10 different point here, but tell us about -- perhaps not  
11 in the context of a rolling analysis of data, but were  
12 there areas where you wish you'd had more access to  
13 government data?

14 **A.** Yes, this cropped up a few times. There were issues  
15 where we would write a paper and we would submit it and  
16 we then discovered afterwards that there was already  
17 a report within government that covered that particular  
18 topic, or would have been useful for us to see, but  
19 because it was stamped "official sensitive" it wasn't  
20 shared widely enough, we didn't have access to it, we  
21 didn't see it. I'm conscious there are -- you know, we  
22 were one group within the government system looking at  
23 behavioural science of which there were many other  
24 groups. There was the Behavioural Insights Team, there  
25 were teams within UKHSA, there was the DHSC  
30

1 It's quite striking, what you say about this,  
2 Professor, because we have heard from the SPI-M-O  
3 witnesses that they found that their committee actually  
4 filled a void in government competence, or at least  
5 resilience, in the sense that there was no one else to  
6 do the basic modelling work of simply just keeping track  
7 of the R number, and they found themselves conducting  
8 what they regarded as being rather basic work simply  
9 because the government had no one else to do it.

10 As you've said, your position was rather different,  
11 because there were many other parts of government that  
12 were already engaged in thinking about behavioural  
13 science.

14 If we look at page 56 of your statement, you just  
15 mentioned a few of them, and in fact you list them here,  
16 do you not?

17 **A.** Yes.

18 **Q.** So the Behavioural Insights Team, that is or at least  
19 was initially part of the Cabinet Office, am I right  
20 about that?

21 **A.** Yes.

22 **Q.** Then we see the other entities: the Government  
23 Communication Service, communications teams from the  
24 DHSC and Public Health England, and then Public Health  
25 England/UKHSA's Emergency Response Department and  
32

32

1 others.

2 You go on in your statement, Professor, to, in

3 summary, describe a fairly arm's length but good

4 relationship with these various bodies. I want to come

5 back to the point you were making, which is the sense

6 that you may have not fallen out with any of these

7 bodies but you weren't perhaps quite sure of how you

8 fitted in to the overall picture?

9 **A.** No, I don't think that's quite correct, if I may. So

10 the -- we certainly didn't fall out with these bodies,

11 we had a good working relationship with all of these

12 groups, and they did provide data to us and ask us

13 questions and engage in conversations with us within

14 SPI-B that was very useful. In -- apologies, I've

15 forgotten your question.

16 **Q.** It was just really whether your committee -- the words

17 I used were whether you didn't know where you fitted in

18 to the picture?

19 **A.** Oh, I see. No, we did. And I think it's -- it would be

20 a mistake to think that all of these groups do the same

21 thing and SPI-B does the same thing and we're all

22 competing over the same space. That's not the case. If

23 you look at it, for example, you've got a communications

24 service, a communications team, another communications

25 team, well, it's quite clear where their remit lies.

33

1 received more funding, and were able to ramp up their

2 capacity to do the kinds of reviewing work and the kind

3 of data integration that SPI-B was looking at, the need

4 for SPI-B did start to fall away, and that was

5 reasonable and fair.

6 So, yes, we very happily handed over the work to

7 those teams.

8 **Q.** Thank you.

9 Just before we leave this list, a point you've

10 already made, some of these entities at least are

11 involved in communications, and so we're back to that

12 point we were talking about earlier about your interest

13 in messaging, the fact that C wasn't included in the

14 name of the committee, operational communications not

15 being for you.

16 I think it's right that you did have a subgroup,

17 I forget its name, but was it in fact a communications

18 subgroup?

19 **A.** Yes.

20 **Q.** As I've said, this is something which we will ask

21 Professor Yardley about more, but there was a problem,

22 wasn't there, at least some members of your committee

23 did feel that SPI-B and the subgroup to do with

24 communications was being cut out of involvement in

25 government communications?

35

1 And as I've said, SPI-B looked at the science of

2 communication, whereas these teams were working on the

3 operationalisation of that science. So we would provide

4 advice to them on, actually, if you phrase it in this

5 way or you have this kind of trusted communicator, it

6 lands better, and they would have to take that away and

7 work out: well, what does our poster look like in that

8 case?

9 Behavioural Insights Team, as we've discussed, they

10 have a particular set of interventions they particularly

11 focus on, and SPI-B goes much broader than that. So,

12 again, I didn't feel we were competing with

13 the Behavioural Insights Team.

14 The PHE/UKHSA Emergency Response Department, I work

15 with them a lot, they have a very good team, but

16 initially very small, and the team that they had were

17 employed on research grants, so specifically focused on

18 that one particular problem rather than the whole broad

19 range of issues to do with Covid. So, again, I don't

20 think we were in competition, and we were helping them

21 to understand what to do.

22 And the test and trace working groups, well, they

23 were set up during the course of the pandemic.

24 Certainly as these teams, particularly UKHSA and Test

25 and Trace and others, became more established, and

34

1 **A.** Yes, that's true. I think particularly around kind of

2 May/June 2020 this came to a head. It related primarily

3 to the change in messaging from "Stay at home, Protect

4 the NHS, Save lives" to the "Stay alert" messaging, and

5 I think that many participants felt that the advice we

6 had given on issues such as the clarity needed in

7 messaging just wasn't being seen in the output from

8 government communications, and I think that was

9 the particular issue, was that we were providing advice

10 on the science of communication but was that being

11 translated as the actual messages coming out of

12 government. And I think that caused some frustration.

13 **Q.** Yes. Well, as I say, that's a theme that we'll explore

14 in more detail with Professor Yardley.

15 May I move on to a slightly different issue, which

16 is HMG transparency and how that worked with SPI-B. For

17 these purposes, can we go to page 51 of your statement,

18 please, and paragraph 10.4.

19 You refer here to a "challenge around publication",

20 and what you mean is publication of the papers, the

21 statements that your committee prepared.

22 You describe it as being a "persistent frustration".

23 You refer to SAGE's early practice of secrecy, not

24 publishing either the people who were on SAGE or the

25 papers that SAGE was preparing. But we've heard

36

1 something about that, and also that relatively early in  
2 the pandemic that was reversed and the papers on SAGE  
3 were indeed published.

4 But you make the point, as we go on in this  
5 paragraph, that even once that moment had passed, there  
6 were still ongoing difficulties with transparency as far  
7 as you were concerned.

8 What were those?

9 **A.** So there was a principle that everything that was being  
10 produced by the group would be published. The  
11 frustration was in the timeliness of that publication.  
12 And there were often delays, sometimes very lengthy  
13 delays, in putting things into the public domain.

14 I think there were -- as I understood it, there were  
15 two reasons for that. The first was where we had said  
16 something in a paper that was still being considered by  
17 policymakers, it was an ongoing policy decision, that  
18 paper would not be published because -- you know,  
19 I don't understand how policymaking works but  
20 I understand there is a principle of allowing a safe  
21 space for policymakers to weigh up different options  
22 before putting it in the public domain.

23 That was one issue.

24 The second issue was where we cited things in our  
25 paper, where we cited other reports produced within

37

1 of my role on the group, many other documents --  
2 you know, I think I said government is awash with papers  
3 that are stamped "official sensitive" and I often didn't  
4 understand the reasoning for that protected marking and  
5 why it couldn't be released, there didn't seem often  
6 anything particularly sensitive about it to my eye.

7 So it was a frustration that -- you know, from  
8 an academic point of view, publication is built into us,  
9 it's what we do, it's what we're marked on. It helps  
10 the public debate, it helps our academic colleagues to  
11 understand what additional research we might need, it  
12 gives us peer review on our papers, it means colleagues  
13 from other countries can see the scientific  
14 considerations taking place in the UK and they can use  
15 it, occupational health teams in industry can use it.  
16 Withholding it was a negative thing and I was very keen  
17 for it to go out as quickly as it could. So, yes,  
18 a persistent frustration.

19 **Q.** Some of those examples you've just given us, is your  
20 view then that we're not just looking at perhaps a bit  
21 of a culture clash between academics who were inclined  
22 to publish things and civil servants who are a bit more  
23 backward in publishing things, but you felt there were  
24 important reasons, during the pandemic, for your  
25 research to be made available to as many people as

39

1 government, other data sources for example, and those  
2 had in turn been stamped "official sensitive", then  
3 there were questions as to whether SPI-B could release  
4 a paper that reports those data.

5 I was always of the mind that our papers would cite  
6 anything we wanted to and we wouldn't hold back in  
7 referring to data that we were aware of because our  
8 primary audience was Sir Patrick and Sir Chris and they  
9 needed to be aware of what we knew.

10 But in doing that, I think it did result in delays  
11 in the release of those papers because the government  
12 departments would take time to clear them for approval,  
13 and in some cases those delays could go on for, as  
14 I say, months. I think there may even have been one --  
15 in fact I know there was one that took years to publish.

16 **Q.** The sense we get from your use of words like "persistent  
17 frustration" is that, at least from your perspective,  
18 this could and should have been done better?

19 **A.** Yes. And I think early on I suggested we needed some  
20 kind of policy on this where, you know, is it two weeks,  
21 is it a month, there should be a deadline beyond which  
22 if a paper has been produced by the group it will  
23 default go into the public domain unless there is a good  
24 reason to withhold it. And I should add that  
25 frustration applied to many other things I saw as part

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1 possible as quickly as possible?

2 **A.** Yes. Yes. I think the two key things are, first of  
3 all, so that we can get feedback from our academic  
4 peers. If we've got something wrong in the paper, we  
5 want to know about that, so the peer review is useful.  
6 And that did happen when we published stuff: blogs would  
7 be written and we would read those and understand other  
8 data or things we may have missed, and that was very  
9 useful. And secondly, the stuff we were writing was  
10 helpful not just for government but for many other  
11 audiences as well, and I felt we were restricting it  
12 unnecessarily to government.

13 **Q.** It was, after all, a global pandemic?

14 **A.** Yes.

15 **Q.** These problems broke the surface on at least one  
16 occasion. I'd like to show you a newspaper article, if  
17 I might.

18 It's INQ000197125.

19 So this is in May 2020. We will see a few episodes  
20 taking place around this time. You've already mentioned  
21 the tension over government messaging, but is it right  
22 to say, Professor, that those early months,  
23 May/June 2020, were difficult times for the committee?

24 **A.** I think that might be overstating it actually. There  
25 certainly were discussions about how we handled our

40

1 approach to media, and I think it's reasonable to say  
2 there is different opinions about that, but as  
3 a committee we continued to function very well and  
4 continued to quite very good papers. So yes,  
5 disagreements, but I don't think it interfered with the  
6 functioning of the committee.

7 **Q.** Thank you.

8 Let's just quickly look at this incident. We see  
9 it's a report in The Guardian describing government  
10 scientific advisers, and these are members of SPI-B, are  
11 they not --

12 **A.** Yes.

13 **Q.** -- being furious at what they see as an attempt to  
14 censor their advice on government proposals during  
15 the lockdown by heavily redacting an official report  
16 before it was leaked to the public. There is then  
17 a description of the report.

18 If we go over the page, there is a reference to:  
19 "Several SPI-B members [telling] The Guardian that  
20 the redacted portions of the document contained  
21 criticisms they had made of potential government  
22 policies they had been formally asked to consider in  
23 late March and early April."

24 Various quotes, one from Professor Reicher, saying:  
25 "Personally, I am more bemused than furious ... The

41

1 they weren't given advance notice:

2 "... we still haven't been given a satisfactory  
3 explanation ..."

4 So questions, for example, about process and so on.

5 So it does appear that this was a serious incident.  
6 What was your sort of reflection on it?

7 **A.** My understanding of the reason those redactions were in  
8 place was to allow the paper to be released. So this  
9 was one of those areas where what was underneath  
10 the redactions were issues that were still being  
11 considered by policymakers, and the decision that was  
12 made by the secretariat to release the paper with  
13 redactions was precisely to allow it to go out but  
14 withholding those bits that couldn't go out because they  
15 were still under consideration, and the alternative  
16 would have been it doesn't go out at all until those are  
17 all sorted.

18 That said, yes, I completely agree it was  
19 heavy-handed and it was not a good look. We did discuss  
20 it with Sir Patrick, I raised it with Sir Patrick, and  
21 he agreed and he made it very clear that he wanted as  
22 few redactions to papers as possible and the revised  
23 version of that paper was released pretty quickly  
24 afterwards with lots of that taken out.

25 **Q.** Yes.

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1 greatest asset we have in this crisis is the trust and  
2 adherence of the public. You want trust? You need to  
3 be open with people. This isn't open. It is  
4 reminiscent of Stalinist Russia. Not a good look."

5 The next page is a -- I don't know if this is  
6 actually the document itself as redacted or something  
7 that The Guardian have reproduced, but we get the idea,  
8 don't we?

9 **A.** I believe it is the document.

10 **Q.** Right.

11 Then if we can go to the next page, we see about  
12 halfway down there is a description of SPI-B as  
13 including professors in psychology, epidemiology and  
14 anthropology. They said they "felt the proposals were  
15 too punitive and more likely to result in unfair  
16 treatment among people in deprived economic  
17 circumstances".

18 So one of the things we see here is it appears that  
19 The Guardian were told some detail of what lay  
20 underneath the redactions; is that fair?

21 **A.** Yes, that's fair.

22 **Q.** Then the response from the government stating that the  
23 redactions had been carried out by officials, suggesting  
24 that members of the committee had been told about this,  
25 although, as we see further on down the page, they said

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1 **A.** So I kind of agree with my colleagues in that thing, it  
2 was not a good look and I think it did need to be  
3 explained better when it was released as well. To be  
4 fair to the secretariat, it is true that they did alert  
5 the committee a couple of weeks in advance that  
6 the redactions would be in place. I think most people  
7 missed it but they did tell us.

8 **Q.** Thank you. So an episode there focusing on  
9 the redaction of paper, of that particular paper when it  
10 was published, but we also see another feature which was  
11 to become something that was -- that raised concerns,  
12 which was next of your committee talking to the press  
13 about what the committee was doing. You address this  
14 issue on page 49 of your statement, if we could go to  
15 that, please, at paragraph 10.3. Yes.

16 You describe it as a challenge around public  
17 statements, you say:

18 "The group met to discuss this [issue] early on and  
19 agreed that discussions in SPI-B must remain  
20 confidential."

21 But you go on to say that there were then occasions  
22 where members of the committee made public statements  
23 even if they weren't about what was happening in SPI-B,  
24 but about government policy more generally.

25 **A.** Yes.

44

1 **Q.** Then, picking it up a few lines further down, you say:  
 2 "[Your] impression was that, within Government,  
 3 there was disquiet about this. The group received  
 4 suggestions from Sir Patrick Vallance that vocal, public  
 5 criticism of Government policy might not be the best way  
 6 to encourage policymakers to engage with [your] advice."  
 7 Is that a fair description, then, of that, the start  
 8 of that concern about members of the committee speaking  
 9 publicly about government policy?  
 10 **A.** Yes. And it was a legitimate tension, it was  
 11 a difficult issue, and I still don't have an answer to  
 12 it. Academics have academic freedom, and we fight very  
 13 hard for that, and it's part of our identity, and  
 14 I think it's very important in forming the public  
 15 debate, and part of that academic freedom is the freedom  
 16 to comment on public policy. At the same time, if  
 17 the committee is to be trusted by government and we're  
 18 to have government departments come to us and be frank  
 19 with us about the quandaries that they have or  
 20 the dilemmas or the uncertainties and to give us  
 21 information that they may not necessarily want to  
 22 disclose in the public domain, while it is making  
 23 those kind of -- a running commentary on public policy,  
 24 does that detract from the government's ability to  
 25 approach the group? So there is that tension there and  
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1 **Q.** Moving on, though, just reading on in the statement, in  
 2 terms of impact on your committee, there is the  
 3 suggestion that this sort of leak, if that's what it  
 4 was:  
 5 "... was taken very seriously within Government and  
 6 that if SPI-B was viewed as 'leaky' then it might reduce  
 7 the desire of people within Government to engage with  
 8 us."  
 9 So that was one of the problems that was raised by  
 10 this sort of matter?  
 11 **A.** Yes, it -- it's all part of the same kind of issue:  
 12 the need for us to maintain the trust of government so  
 13 that they will approach us and ask us for advice and to  
 14 feel comfortable doing so.  
 15 I think a leak obviously oversteps the boundaries,  
 16 it was an official sensitive document, it should not  
 17 have been leaked, I'm quite clear on that, but it also  
 18 combined with other issues around more general comments  
 19 about public policy which I think played into the same  
 20 kind of issue.  
 21 **Q.** Yes.  
 22 **A.** And we were certainly told on at least three, possibly  
 23 four occasions by senior members within the secretariat  
 24 that we did run the risk of losing the trust of  
 25 government over these issues.  
 47

1 I must admit I was never able in my own mind to resolve  
 2 that tension, although I was quite clear throughout that  
 3 as academics, everybody on the group did retain the  
 4 right to talk to the media about whatever they wished.  
 5 **LADY HALLETT:** In their personal capacity?  
 6 **A.** Within their personal capacity and -- apologies, you're  
 7 right -- not what was being discussed within the group,  
 8 because we had all agreed that must remain confidential.  
 9 **MR O'CONNOR:** Yes.  
 10 If we go on to the next page, please, you provide a  
 11 couple of examples of incidents where this matter was  
 12 raised. The first one is the one we've just looked at,  
 13 with The Guardian article, but we can see you saying  
 14 here that as a result of what was written in the press,  
 15 and the fact that members of the committee had clearly  
 16 been telling the media something about what lay  
 17 underneath the redactions, the secretariat informed you  
 18 that a leak inquiry was going to be set up; is that  
 19 right?  
 20 **A.** Yes.  
 21 **Q.** What happened with that leak inquiry?  
 22 **A.** I was never told anything further about it.  
 23 **Q.** Did you think that was an overreaction?  
 24 **A.** I don't know, I've never been in that situation before,  
 25 so I don't know how government handles these things.  
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1 **Q.** Yes. Then below that, another is -- I don't want to get  
 2 into the detail of that one, save to point out that what  
 3 you are describing here is an incident where actual  
 4 details of SPI-B discussions were revealed to the press,  
 5 contrary to the agreement you say had been reached  
 6 amongst members of the committee?  
 7 **A.** Yes, and I did discuss this with Professor West, and my  
 8 understanding is it was a -- he appreciated that he  
 9 shouldn't have made the comments in the way that he did,  
 10 and we accepted that and we moved on from it, but -- but  
 11 yes.  
 12 **Q.** There is one more aspect to these set of problems that  
 13 I want to ask you about, which is Independent SAGE, and  
 14 if we could look, please, at page 51 of your statement,  
 15 subparagraph 3 at the top there, you refer to  
 16 the decision in June 2020, so at around about the same  
 17 time as, for example, The Guardian article and  
 18 the concerns about messaging that we mentioned:  
 19 "The decision in June 2020 of multiple participants  
 20 of SPI-B to join a subgroup of independent SAGE took me  
 21 by surprise and put us in an awkward position."  
 22 I'm going to take you to a couple of emails, but in  
 23 summary did this raise a similar problem in the sense,  
 24 first of all, of course these committee members were  
 25 entitled to join whatever committee they liked, but it  
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1 did raise issues about the effectiveness of SPI-B?  
 2 **A.** Yes, that's fair, and various members joined all sorts  
 3 of different committees, joined the British  
 4 Psychological Society committee or the World Health  
 5 Organisation or Independent SAGE in this case, but this  
 6 was again raised with me specifically that, as you can  
 7 see in the quotes there, it raises real issues of trust  
 8 for policymakers -- or government departments are now  
 9 becoming very wary of putting anything to SPI-B. So it  
 10 did raise a tension.

11 **Q.** Let's look, if we may, at a couple of emails, which  
 12 I think are probably those that are quoted in that  
 13 paragraph.

14 First of all, if we just look at INQ000197131.

15 We can just look at the top half of this page. This  
 16 is an exchange between you and someone called  
 17 Stuart Wainwright, who we have heard evidence from,  
 18 certainly a member of the secretariat, of the SAGE  
 19 secretariat, possibly rather more senior than that,  
 20 I forget, was he in fact the senior member of the SAGE  
 21 secretariat?

22 **A.** Yes.

23 **Q.** Yes. You're discussing here, are you not,  
 24 the understanding early in the story that, as we can see  
 25 from the bottom email on the screen, one or two of your

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1 sure that the group's impact within government was  
 2 maintained. And that then was a difficult thing for me  
 3 to balance up, hence the conversation with Stu.

4 **MR O'CONNOR:** Yes.

5 **LADY HALLETT:** Can I just ask you about the academic freedom  
 6 point? Of course I understand the importance of  
 7 academic freedom, it's absolutely essential to your  
 8 work, but if you volunteer to serve on a committee  
 9 that's advising the government, what is the principle  
 10 that governs the academic when they gain access to  
 11 information or they know about deliberations and  
 12 discussions at the committee? Do they not, if they  
 13 volunteer for a government committee, impose some kind  
 14 of restraints upon themselves, or shouldn't they?

15 **A.** So in terms of the information that they see, yes. So  
 16 obviously not leaking documents, I think that goes  
 17 without saying, but also we were seeing data and  
 18 information that was official sensitive and I think  
 19 everybody appreciated that couldn't go into the public  
 20 domain, and I don't think that happened. I think  
 21 the issue was more around the commentary on government  
 22 policy, so a continual criticism of the decisions that  
 23 the government were making and whether that would  
 24 detract from the government's willingness to engage with  
 25 the group.

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1 members were going to join Independent SAGE; is that  
 2 right?

3 **A.** I think one or two members had joined Independent SAGE  
 4 earlier than this --

5 **Q.** Right.

6 **A.** -- which wasn't seen as an issue, but I think when  
 7 multiple members on the same day said that they were  
 8 joining, that -- obviously I had to alert  
 9 the secretariat to what was going on, and this is the  
 10 communication about that.

11 **Q.** We will come to an email a few days later, but here we  
 12 see in the bottom emails Mr Wainwright making this  
 13 point:

14 "... one or two members involved with alternative  
 15 sage was one thing but as more get involved I do think  
 16 policy makers will be more reluctant to be open with  
 17 the committee about the challenges they are facing. So  
 18 as more get involved with alternative sage, then  
 19 [I think he means SPI-B's] ability to have impact will  
 20 reduce I fear."

21 **A.** Yes, and you can -- you can see the tension.

22 So absolutely academics have a right to talk to  
 23 whomever they want to and to provide their input into  
 24 more than just SPI-B, but at the same time, as  
 25 the co-chair of SPI-B, it was my responsibility to make

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1 **LADY HALLETT:** But if they didn't open -- I mean, I can see  
 2 how in reaching their own conclusions about policy they  
 3 may have been influenced by data they'd seen, but if  
 4 they didn't mention in public the data that they had  
 5 seen or didn't mention the discussions that SPI-B  
 6 members had had, then why can't they just comment using  
 7 their academic freedom without relating it to SPI-B?  
 8 **A.** They absolutely could, and they did do that. They  
 9 didn't overstep -- I want to be clear, they did not  
 10 overstep the terms of reference at all by joining  
 11 Independent SAGE or by commenting on government policy,  
 12 and I think you can see in this email chain, actually,  
 13 Stu saying, "Let's see if there is a conflict of  
 14 interest here", and there wasn't, but nonetheless there  
 15 was a feeling that the willingness of government to  
 16 engage with SPI-B would decline --

17 **LADY HALLETT:** That I follow, yes.

18 **A.** -- and that is the issue that we're talking about. They  
 19 were within their rights to do this, absolutely within  
 20 their rights, and I didn't argue that they shouldn't,  
 21 but it did have implications -- or I was told it had  
 22 implications in terms of government engagement with  
 23 the group.

24 **LADY HALLETT:** Should they have said, for example, "As  
 25 a member of SPI-B", that seems to me to be crossing

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1 the line which they shouldn't do, because if they say  
 2 "As a member of SPI-B" then they appear to be linking  
 3 their personal comments with SPI-B membership?  
 4 **A.** Yes, no, they shouldn't have said that, and again that  
 5 was quite clear. And I think very few members ever did  
 6 that and where they did it was normally a slip.  
 7 That said, I think the media did that job for us,  
 8 and any time any of us made any comment it was always  
 9 "senior government adviser says this".  
 10 **MR O'CONNOR:** Can I -- I want to move on to another email in  
 11 a moment, before we do, could I just ask you about  
 12 a slightly earlier part of the discussion on this email  
 13 chain between Mr Wainwright.  
 14 As you say, the discussion was about whether there  
 15 was a conflict of interest and what might be done about  
 16 it. Right at the bottom of this page, do you see it's  
 17 your email to Mr Wainwright, you say:  
 18 "DHSC will presumably want us to adopt nervtag style  
 19 membership arrangements ..."  
 20 Then you talk about a refreshed terms of reference.  
 21 What do you mean by NERVTAG-style membership  
 22 arrangements?  
 23 **A.** So with -- NERVTAG had a much more formal way of  
 24 appointing members, with much clearer terms of reference  
 25 and a formal interview process, and I -- my

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1 people and then it leapt up to eight.  
 2 **Q.** All right, so he is catching up here with what you were  
 3 discussing with Mr Wainwright --  
 4 **A.** Yes.  
 5 **Q.** -- a week or so earlier? I see, thank you.  
 6 If we can go back to the first page, then, we see,  
 7 if we can look at the email from Patrick Vallance saying  
 8 "The effect is", Patrick Vallance is making very much  
 9 the same point that you had been discussing with  
 10 Stuart Wainwright:  
 11 "The effect is that Government departments are now  
 12 becoming very wary of putting anything to SPI-B because  
 13 of a risk of leaks or misuse. We should think about how  
 14 to deal with it. Frankly it is bizarre behaviour don't  
 15 you think?"  
 16 On the same day, in his evening diary,  
 17 Patrick Vallance recorded or described this action on  
 18 the part of the SPI-B members as "totally inappropriate  
 19 behaviour". Do you think it was totally inappropriate?  
 20 **A.** No. As I say, they weren't in breach of the terms of  
 21 reference, there wasn't a conflict of interest issue,  
 22 and they retained the right to talk to anybody who was  
 23 interested. So I think there's -- I think there's  
 24 a valid difference of opinion as to what the best thing  
 25 to do here was. I think I would -- I mean, obviously

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1 assumption -- if you see, we're in June 2020, so we had  
 2 moved out of the immediate crisis period of  
 3 February/March, my assumption was that that would be  
 4 the way that SAGE would evolve, towards a more kind of  
 5 formalised mechanism. It didn't, in practice, but  
 6 that's what I was referring to there.  
 7 **Q.** Yes. Thank you.  
 8 Just to finish off this topic, if we can look at one  
 9 more email, please, INQ000196969. The previous emails  
 10 we were looking at were dated 9 June, so this is  
 11 ten days later, and if we just look at the bottom -- in  
 12 fact I think, sorry, we need to go on to the next page,  
 13 for the start. Yes.  
 14 So the start of this email chain is an email from  
 15 Patrick Vallance to you where he says:  
 16 "I gather that 8 members of SPI-B have formed  
 17 an independent SPI-B reporting into independent SAGE.  
 18 Do you know about this? Are they using the government  
 19 papers they see? This seems like an odd thing to do and  
 20 may cause problems."  
 21 So we were looking previously at a time when it  
 22 seemed to have escalated from one or two to a few more,  
 23 but ten days later there were even more than that who  
 24 were joining Independent SAGE.  
 25 **A.** Yes, I think initially it was one person and then two

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1 I didn't go down this route and I didn't engage very  
 2 much with the media during the pandemic either. I think  
 3 it was a different view and I -- still, in my head,  
 4 I don't know how to balance those two issues.  
 5 I'd hope the Inquiry can hopefully give us some  
 6 advice on how to deal with this in your report.  
 7 **LADY HALLETT:** I'm not sure.  
 8 **MR O'CONNOR:** Just before you hand the problem over to us,  
 9 Professor Rubin, just lastly on this, were there to be  
 10 or when there is another pandemic, and if committees  
 11 like this are being set up, having had this experience,  
 12 would you go about the setting up of the committee in  
 13 a different way? Would you, for example, from  
 14 the outset use that slightly more formal NERVTAG style  
 15 procedure that you mentioned?  
 16 **A.** I don't know. I genuinely don't know. I think there is  
 17 a challenge there, because you want to have the best  
 18 possible people on the group, and we had the best  
 19 possible people on the group, these are world leading  
 20 experts in their field, and I wouldn't want to do  
 21 anything that would put people off who we need providing  
 22 that evidence, and if this puts them off doing that  
 23 advice to government will suffer.  
 24 I think what might be required is a better induction  
 25 rather than a better terms of reference, a better

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1 understanding early on about, you know, "If you want to  
2 provide advice that is going to influence government  
3 policy, this is the best way to do it, and it does mean  
4 you may have to restrain yourself in doing this, that or  
5 the other".

6 Not blocking them from doing that, but potentially  
7 thinking further about what will the downstream  
8 implications be.

9 **MR O'CONNOR:** Yes.

10 My Lady, I was about to move on to another topic.

11 **LADY HALLETT:** Certainly. 11.35, please.

12 (11.17 am)

(A short break)

14 (11.35 am)

15 **LADY HALLETT:** Mr O'Connor.

16 **MR O'CONNOR:** Grateful, my Lady.

17 Professor, I would like to move on and now ask you  
18 about two separate behavioural science issues that  
19 attracted some debate during the course of the pandemic.  
20 The first of those is the issue of behavioural fatigue.

21 This issue arose, did it not, from certain  
22 observations made by the Chief Medical Officer,  
23 Chris Whitty, during Downing Street press conferences on  
24 9 and 12 March 2020?

25 **A.** Yes.

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1 "... it's not just a matter of what you do it is  
2 also a matter of when you do it because anything we do  
3 we've got to be able to sustain once you've started  
4 these things we will have to continue through the peak  
5 and that is for a period of time and there is a risk if  
6 we go too early people [will] understandably get fatigue  
7 and it'll be difficult to sustain this overtime so  
8 getting the timing right is absolutely critical to  
9 making this work ..."

10 We see the reference to fatigue within that excerpt.

11 Thank you, we can take that down.

12 So that was on 9 March, on the Monday. On the  
13 Thursday of the same week, Chris Whitty returned to  
14 the same theme. We don't have a transcript of this so  
15 I'm just going to read out what he said. At one point  
16 of the conference he said:

17 "If people go too early they become very fatigued."

18 Later during the same press conference he said this:

19 "An important part of the science to this is  
20 the behavioural science, and what that shows is probably  
21 common sense to everybody in this audience, which is  
22 that people start off with the best of intentions but  
23 enthusiasm at a certain point starts to flag. If you  
24 start too early and then people's enthusiasm runs out  
25 just at about the peak, which is exactly the time that

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1 **Q.** We will all recall that that was the week during which,  
2 behind the scenes, pressure was mounting for a change of  
3 tack away from the mitigation strategy towards  
4 the suppression policy. We heard plenty about that from  
5 Professors Riley and Ferguson yesterday.

6 His comments, which we'll look at in detail, were  
7 made in the context of the first of those,  
8 the mitigation policy, because it was before  
9 the announcement of the lockdown had been made.

10 That's right, isn't it?

11 **A.** Yes.

12 **Q.** In particular, as we will see, Chris Whitty's reference  
13 to behavioural fatigue was made in the context of  
14 justifying and explaining a delay in imposing NPIs until  
15 what he would have described as close to the peak of the  
16 epidemic?

17 **A.** Yes.

18 **Q.** Let's look, if we may, at precisely what he said, first  
19 of all, and as I've said, there were two press  
20 conferences a few days apart where this language was  
21 used.

22 If we can go first, please, to look at a transcript  
23 of what the Chief Medical Officer said on Monday,  
24 9 March, it's helpfully on the screen. Let's just  
25 follow it through. He said:

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1 we want people to be doing these interventions, that's  
2 actually not a productive way to do it, so we do need to  
3 do it at the last point it's reasonable so that people  
4 will maintain their energy and enthusiasm to get through  
5 what will be quite difficult things to do."

6 So that is what he said on that occasion.

7 Now, we'll go into this in a little detail,  
8 Professor, but in summary, first of all, we saw in that  
9 last quote that Chris Whitty referred to behavioural  
10 science in the context of these remarks. Were his  
11 remarks based on advice given to him either by you or by  
12 your committee?

13 **A.** No.

14 **Q.** Do you know the source of Chris Whitty's understanding  
15 about behavioural fatigue?

16 **A.** No.

17 **Q.** Have you ever discussed it with him?

18 **A.** We -- we discussed it -- after he made the comments on  
19 12 March, we raised it in SAGE the following day. We  
20 discussed whether there was a basis within  
21 the behavioural science literature for the -- and in  
22 fairness to Sir Chris, I don't think he used the word  
23 "behavioural fatigue" in his statement, I think he  
24 referred to fatigue, you're right, or loss of  
25 enthusiasm. We discussed those issues and came to

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1 the conclusion that first of all this hadn't come from  
 2 SPI-B, and secondly we didn't think it was a valid  
 3 reason to delay the lockdown or delay implementation of  
 4 measures that were necessary. So that was where we  
 5 discussed it, it was in the SAGE meeting the next day.

6 **Q.** Right. And you've made it clear, I think, in  
 7 the context of that answer, that certainly your  
 8 committee's view was that his remarks were not supported  
 9 by behavioural science?

10 **A.** No, we had discussed individual behaviours,  
 11 self-isolation or shielding, we had discussed  
 12 the challenges that people would face in doing those  
 13 behaviours, but we hadn't come up with any kind of  
 14 general overarching principle of fatigue or loss of  
 15 enthusiasm, and we wouldn't have done. Individual  
 16 behaviours have individual factors that feed in to them.  
 17 It would have made no sense to say it's all enthusiasm,  
 18 and it will wane at around about the time of the peak  
 19 either, we wouldn't have been able to be that specific  
 20 even if we had said it. So, no, it wasn't us.

21 **Q.** I would like to show you, Professor, a couple of  
 22 paragraphs in the witness statement we have received  
 23 from Susan Michie. Now, she is someone whose name has  
 24 come up a couple of times. It is right, isn't it, she  
 25 is a professor of health psychology and, in fact, the

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1 **A.** Yes.

2 **Q.** If we look down at paragraph 9.2, she goes on:  
 3 "SPI-B was not asked for our views on the notion of  
 4 'behavioural fatigue'. Had we been, the response would  
 5 have been that there was not such a concept in the  
 6 behavioural science literature, not in published  
 7 evidence nor in theories of behaviour nor in  
 8 measurement. SPI-B never mentioned this term apart from  
 9 a discussion I recall concerning its source and use.  
 10 The source of the introduction of the term ... into  
 11 discussions around Covid-19 is unknown, but it certainly  
 12 did not come from SPI-B."  
 13 Again, I take it from what you have said you would  
 14 endorse those observations?

15 **A.** Yes, I would.

16 **Q.** Can I just ask you about one more passage in her  
 17 statement, then, and it's over the page,  
 18 subparagraph (e) there, please.  
 19 Professor Michie here is listing the consequences of  
 20 this reference by the Chief Medical Officer to  
 21 behavioural fatigue, and here she says:  
 22 "In my opinion it caused behavioural scientists to  
 23 be blamed for the delayed first lockdown which cost many  
 24 lives. For example, in a private meeting with MPs on  
 25 16 June 2021, Matt Hancock was reported in the press as

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1 director of the Centre for Behaviour Change at -- is it  
 2 University College London, or King's College London?

3 **A.** UCL, yes.

4 **Q.** And you mentioned that she was the chair of SPI-B&C back  
 5 in 2009, so a senior member of the academic community?

6 **A.** Oh, absolutely, yeah.

7 **Q.** During the 2020 pandemic, she was a member of SPI-B?

8 **A.** Yes.

9 **Q.** Did she also sit on SAGE or not?

10 **A.** She attended SAGE I think on three occasions.

11 **Q.** Right. But not a regular attendee?

12 **A.** No.

13 **Q.** As you were in your capacity as chair of SPI-B?

14 **A.** That's correct.

15 **Q.** So if we can just look at her statement, and in  
 16 particular a couple of paragraphs where she addresses  
 17 this issue, I'm going to go to paragraph 9.1 first,  
 18 thank you, and she says this:  
 19 "As I explained in my Witness Questionnaire [which  
 20 is a questionnaire she provided to the Inquiry], the  
 21 term 'behavioural fatigue' is not a behavioural science  
 22 term; that is to say it did not feature in behavioural  
 23 theories and there was no measure of it."  
 24 From what you've said, I take it you agree with  
 25 that?

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1 having blamed unnamed behavioural scientists for their  
 2 advice about managing the pandemic, saying that they had  
 3 'got it wrong'."

4 I don't know whether you know about that particular  
 5 incident with Matt Hancock, Professor, but in general  
 6 terms, can you help us with this idea that the use of  
 7 that term in those press conferences led to behavioural  
 8 scientists generally being blamed for the delay in  
 9 the first lockdown?

10 **A.** Yes, I think it was to an extent. I did discuss this --  
 11 there was an email exchange between myself,  
 12 Patrick Vallance and Chris Whitty and I think a few  
 13 others on 14 March where we discussed this issue, and  
 14 this reason led to me wanting to put forward into  
 15 the public domain a document explaining what SPI-B was  
 16 actually doing, because it wasn't this. And as part of  
 17 that, Patrick commented that he wanted to be clear that  
 18 SPI-B or behavioural science advice had not resulted in  
 19 the delay to lockdown, and would not in the future  
 20 result in a delay to lockdown.  
 21 So certainly from his perspective I felt he  
 22 understood it wasn't behavioural science that was  
 23 underlying this. But I agree, I suspect others did  
 24 think that.

25 **Q.** Do you think, at least from the government end,

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1 including the Chief Scientific Adviser, do you think it  
 2 was made sufficiently clear that this concept had not  
 3 arisen from SPI-B advice?  
 4 **A.** Well, as I say, we put it in the SAGE minutes and I was  
 5 quite clear it needed to go into the SAGE minutes, that  
 6 these issues were not a reason to delay lockdown.  
 7 Beyond that, I don't know what government thinks.  
 8 **Q.** There was at around this time another step taken to push  
 9 back, as it were, against what Chris Whitty had said,  
 10 and that was in an open letter that was published on  
 11 16 March, so early the following week. We have it up on  
 12 screen. I'm sure you're familiar with that letter,  
 13 Professor.  
 14 **A.** Yes.  
 15 **Q.** I'm not going to read it out, but we can see it is  
 16 a letter essentially encapsulating what you've already  
 17 said, which is that the concept of behavioural fatigue  
 18 is not one that's known to behavioural science. And at  
 19 the last paragraph we see there is a challenge:  
 20 "If 'behavioural fatigue' truly represents a key  
 21 factor in the government's decision to delay  
 22 high-visibility interventions, we urge the government to  
 23 share an adequate evidence base in support of that  
 24 decision. If one is lacking, we urge the government to  
 25 reconsider these decisions."

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1 and you on 13 March, so it's the Friday at the end of  
 2 that week, the day after the second of Chris Whitty's  
 3 press conferences, and I think the same day as the SAGE  
 4 meeting that you've just mentioned.  
 5 **A.** Yes.  
 6 **Q.** If we look at the first of the emails in time, so at the  
 7 bottom of that page, it's from David Halpern.  
 8 Just tell us who David Halpern was.  
 9 **A.** David Halpern is the director of the Behavioural  
 10 Insights Team.  
 11 **Q.** Which, as we said, it has a slightly strange status, but  
 12 it certainly was founded within the Cabinet Office and  
 13 was working to support government at the time?

14 **A.** Yes.  
 15 **Q.** We see the email is sent to Chris Whitty, but copying  
 16 you and Patrick Vallance, and its title is "Important --  
 17 academic article that may support Chris Whitty  
 18 quarantine fatigue point". We see that the message  
 19 itself is very short:  
 20 "Chris -- paper I mentioned. Also interesting  
 21 [I think that means "with regard to"] second peak  
 22 (though from different historical period)."

23 Then there is sort of cut and pasted on some  
 24 paragraphs relating to the 1918 flu epidemic.

25 And I think the relevant parts from our point of

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1 This letter gained considerable publicity at the  
 2 time it was published, did it not?  
 3 **A.** It did, yes.  
 4 **Q.** Did you have any part in either drafting it or did you  
 5 sign it?  
 6 **A.** No.  
 7 **Q.** Do you know whether other members of your committee were  
 8 involved in either drafting or signing this letter?  
 9 **A.** I don't think anyone was involved in drafting it,  
 10 I don't know about the signatories.  
 11 **Q.** But I take it from what we've said that you, at least in  
 12 general terms, endorse it?  
 13 **A.** Yes, yes, I do. And, in particular, I think it comes  
 14 back to something we talked about earlier, about  
 15 the importance of putting the rationale for advice,  
 16 you know, the underlying papers, into the public domain,  
 17 which is exactly what the signatories of this letter are  
 18 calling for, and I completely agree with.  
 19 **Q.** Yes.

20 Before we leave this topic, I want just to look at  
 21 two further documents, and they're both emails that  
 22 involve you and David Halpern, although they don't have  
 23 precisely the same circulation list.

24 The first, yes, we have it there, is an exchange  
 25 between David Halpern, Chris Whitty, Patrick Vallance

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1 view are -- yes, if we see at the top there, the last  
 2 sentence of the paragraph that's cut off at the top:

3 "Some governments did not re-impose social  
 4 distancing measures during the second wave of the  
 5 epidemic because of the major disruption they had  
 6 caused."

7 Sorry, actually I have gone to the wrong part of it,  
 8 I think we need to go back to the page before -- no,  
 9 we've changed it. So it's the beginning of that  
 10 paragraph -- no, sorry, we do need to go back to the  
 11 page before. So the page before, please. Yes.

12 So do you see at the bottom where it says:

13 "1918 influenza pandemic."

14 **A.** Yes.

15 **Q.** Then:

16 "Regarding the effectiveness of [NPIs], one of the  
 17 difficulties was public compliance. Compliance was seen  
 18 to wane with time (when the preliminary wave of fear  
 19 declined), for environmental reasons (keeping people  
 20 indoors on hot nights), for reasons of psychological  
 21 stress due to isolation or quite simply once they were  
 22 no longer compulsory."

23 Do you see that? That is perhaps what David Halpern  
 24 was driving at when he said that that analysis of  
 25 behaviour in the 1918 flu pandemic may, in his words,

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1 support Chris Whitty's fatigue point. Is that how you  
2 understood this message?  
3 **A.** Yes. I'm not entirely sure it did support Chris's  
4 fatigue point --

5 **Q.** Before you expand on that, Professor, let's have a look  
6 at your -- so you replied back to David Halpern, copying  
7 Chris Whitty and Patrick Vallance, and you said:

8 "Thanks David

9 "You might also be interested in rates of public  
10 worry during swine flu ..."

11 So that's much more recent, 2009.

12 "... based on DH ..."

13 Is that Department for Health?

14 **A.** Yes.

15 **Q.** "... polling. High(ish) worry during first wave, then  
16 a habituation during the second wave."

17 You go on:

18 "But the problem is that by then it was seen as  
19 a mild illness. We might get a similar habituation with  
20 Covid. But the number of deaths reported will be much  
21 higher than swine flu so it is not necessarily a good  
22 parallel."

23 So with those in mind, can you tell us, first of  
24 all, whether you think that David Halpern's point was  
25 a good one, and secondly what you were trying to get

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1 different things. And to stamp all that and say, "Well,  
2 we can call all that fatigue", it's not right and it's  
3 not helpful. So I don't think it did support his point.

4 In terms of the point I was making in my one, again  
5 this was in the spirit of kicking the idea around and  
6 seeing if it had legs. While that was the most  
7 up-to-date parallel I could think of, as you can see in  
8 terms of worry, if you take worry as kind of public  
9 interest, public concern, it does seem to flatline in  
10 the second stage of the swine flu pandemic. But as  
11 I also say, it's not a very good parallel. You can't --  
12 I'm not sure we could extrapolate from that to what we  
13 were about to go into.

14 **Q.** Because what you anticipated in the Covid pandemic was  
15 far more serious in terms of people getting unwell and  
16 dying?

17 **A.** Absolutely. I think the reason people were not worried  
18 in the second wave of the swine flu pandemic was because  
19 by then it was understood in the public's mind as a mild  
20 interest -- a mild illness, sorry, and there wasn't  
21 particularly a reason for anybody to worry about it or  
22 react to it. It wasn't going to be the same in Covid,  
23 as I said there.

24 **Q.** Yes.

25 **LADY HALLETT:** Can we go back to the SAGE meeting when you

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1 across in your own email?

2 **A.** So these emails came following the SAGE meeting of that  
3 day. We had been discussing Chris's point at the podium  
4 about behavioural fatigue being a thing that was  
5 influencing the decisions about when to implement  
6 lockdown. We had pushed back on the idea, but, as you  
7 can see, conversations continued as to: actually, is  
8 there any evidence base for what Chris had mentioned?

9 I think David was providing something he thought  
10 might support it. In terms of why I don't think it does  
11 actually support it, as I understood it, and one of the  
12 challenges around this, is the kind of -- how nebulous  
13 the term Chris used was in terms of fatigue. The reason  
14 it's not used within behavioural science is because  
15 there are a wide range of factors that affect behaviour,  
16 and to merge them all together and stick the label  
17 "fatigue" on it is just not helpful. That's not how it  
18 works. It's kind of going 50, 70 years backwards in  
19 time in terms of behavioural science.

20 In terms of David's email, you can see within that  
21 a range of different factors that might have been  
22 affecting behaviour during the 1918 pandemic, including  
23 the weather, including governments not putting into  
24 place the legislation to maintain lockdown, including  
25 potentially a loss of motivation, but a whole range of

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1 made the points that you're making now. Was any basis  
2 put forward at the SAGE meeting for the rationale of  
3 behavioural fatigue or fatigue?

4 **A.** I think Chris raised the point around risk perception,  
5 that -- so one of the drivers of behaviour is whether  
6 you perceive yourself to be at risk, and as risk  
7 perception goes down, as people feel more comfortable  
8 and no longer perceive themselves as being at risk, you  
9 would expect behaviours to reduce as well, which makes  
10 sense. I think Chris raised that as a point that might  
11 support his argument, but again, for the same reasons  
12 I'm saying here, I wasn't sure that was completely  
13 valid. I think risk perception might have stayed quite  
14 high for quite a long time during the pandemic precisely  
15 because it was going to be quite severe for a lot of  
16 people. But that was the argument that was advanced.

17 **LADY HALLETT:** And then it takes it to the next day when  
18 Mr Halpern finds one study that might potentially  
19 justify or provide the basis for the comment?

20 **A.** Precisely. We were at that point, as I say, kicking  
21 the idea around to see if there were any legs. I think  
22 in the conversation(?) of those two emails, no.

23 **MR O'CONNOR:** Thank you, Professor.

24 The last document on this area, in fact, sees you  
25 and David Halpern coming back to this debate about

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1 a month later.

2 So if we can go to INQ00019709, please, in fact it's

3 a little bit more than a month because we have gone from

4 14 March to 23 April, and it's right, isn't it, that --

5 is it an exaggeration to say there had been a public

6 sort of storm about the use of this term and whether it

7 was accurate or the role of behavioural science in

8 delaying the lockdown?

9 **A.** I don't know about the use of the word "storm", but

10 certainly there had been interest in it, yes.

11 **Q.** Interest which was still current over a month later?

12 **A.** Oh yes. And as you can see, David is being chased by,

13 it looks like, The Guardian to comment on it.

14 **Q.** Yes. That's the context.

15 So David Halpern emails you, we see at the bottom of

16 this page, talking about a "particularly persistent

17 journalist pushing on the behavioural fatigue stuff".

18 He says:

19 "We're really in the thick of it on trying to

20 make ... testing and tracing work ..."

21 Mr Halpern, I should say, is coming to give evidence

22 to the Inquiry in a couple of weeks' time, so we'll be

23 able to ask him about all of this.

24 He then says:

25 "They seem to be pushing us partly because there are

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1 David Halpern and/or his team, also were not part of

2 the genesis of this remark from Chris Whitty. Were you

3 confident about that?

4 **A.** I went backwards and forwards in my mind over those

5 months as to where it had come from and who had said

6 what and why. I don't think it was David.

7 **Q.** No. We'll recall that Professor Costello, who gave

8 evidence earlier this week, I think at one point

9 suggested that it may have been or was David Halpern or

10 his team, but that is in fact a suggestion that he

11 withdrew while he was giving evidence.

12 Let's just look, then, at your response, if we may.

13 You suggest one possible way of dealing with this, just

14 dropping down -- perhaps various different ways, one

15 being NERVTAG to issue some sort of rebuttal via

16 the Science Media Centre --

17 **A.** I'm sorry, can I correct that?

18 **Q.** Yes.

19 **A.** That's not what I was meaning. So previously, as you

20 can see, I talk about government are "letting people be

21 more proactive". NERVTAG issuing a rebuttal was

22 an example of the government allowing committees to be

23 more proactive. They hadn't issued a rebuttal about

24 behavioural fatigue and I wasn't suggesting they do that

25 in this case.

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1 SPI-B members saying that BIT ..."

2 That's the Behavioural Insights Team?

3 **A.** Yes.

4 **Q.** Mr Halpern's organisation.

5 "... gave the line on 'behavioural fatigue' (I'm

6 sure not you!). Perhaps you could politely remind SPI-B

7 members to be cautious in their remarks."

8 A recurring theme. But then he says:

9 "As you know, not only did the fatigue line not come

10 from me or you, BIT actively pushed Patrick and Chris

11 for earlier, more specific implementation of social

12 distancing measures!"

13 So just on that, I think you've already addressed

14 the point that the behavioural fatigue line didn't come

15 from you. What did he mean about the Behavioural

16 Insights Team pushing Patrick and Chris for earlier more

17 specific implementation of social distancing measures?

18 **A.** Actually at the time I didn't know what he meant about

19 that. I can see in his statements here that he

20 discusses that in more detail. But at the time

21 I assumed that was more behind-the-scenes stuff.

22 **Q.** So, I'm sorry, you didn't necessarily know what he was

23 talking about at that point?

24 **A.** On that specific part of the line, no.

25 **Q.** Right. Part of what he says was that he, that is

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1 **Q.** Sorry, that was my misreading of the email.

2 Let's just drop down three lines. You then say:

3 "... I think we could only do that ..."

4 That's you, as it were, rebutting and saying it

5 wasn't you that was the genesis of the remark by

6 Chris Whitty. You could only do that:

7 "... if [Chris Whitty] CMO joined us and said words

8 to the effect of 'this is getting silly. It was

9 a rather clumsy attempt at a metaphor by

10 a non-psychologist to explain why quarantine is

11 unpleasant and which conflated frustration, distress,

12 motivation, economic stressors etc'."

13 Is that actually how you saw it at the time?

14 **A.** Yes, my thoughts at that stage were it's presumably --

15 well, exactly as I say: Chris as a non-psychologist

16 trying to explain a complex net of things that might

17 affect behaviour by making a metaphor out of it and

18 getting it slightly wrong.

19 I don't know whether that's true or not, I don't

20 know actually what was going on in Chris's mind, I don't

21 know what the conversations in COBR were, but that at

22 that time was what I thought might be happening: it was

23 just a metaphor.

24 **Q.** It's what you said at the time. Have you gained any

25 further information or reflected any further since then

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1 or can we take it that that remains more or less your  
2 best guess about what happened?  
3 **A.** I don't know. I think all I can tell you is I don't  
4 know. At the point 14 March where I got assurance from  
5 Patrick that behavioural science had not delayed  
6 the implementation of lockdown, and would not do so, at  
7 that point I drew a line under it in my own mind. I was  
8 still interested, obviously still wondering what had  
9 happened, but without reassurance, no, I haven't pursued  
10 it further.

11 **Q.** Thank you. I said that there were two issues arising  
12 out of behavioural science that arose that I was going  
13 to ask you about. That was the first one, behavioural  
14 fatigue, and the second one, and in fact this will be  
15 the last area for my questioning, is all about the  
16 subject of fear.

17 It's right, isn't it, that there was this separate  
18 issue that was, again, the focus of some debate during  
19 the pandemic about whether SPI-B had advocated  
20 a behavioural policy of fear, in other words of  
21 frightening people into compliance during the pandemic?  
22 That was a debate?

23 **A.** Yes, that came up on social media.

24 **Q.** And again, we'll go to some of the detail, but at  
25 the outset, first of all, do you think that cultivating

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1 of how likely something is to affect you, so whether  
2 you're likely to catch Covid for example, and if you do  
3 catch Covid how severe it will be for you, and your  
4 perceived risk is the multiplication of those two  
5 things. If you think you're going to get it and you  
6 think it will be bad for you, you'll have a high level  
7 of perceived risk. That then motivates you to engage in  
8 various behaviours to reduce your perceived risk. So,  
9 because I think I'm at risk, I'll wear a mask, I'll use  
10 hand gel, I'll self-isolate, because I perceive other  
11 people around me to be at risk and so I'll try and  
12 protect those. So it's a different concept to fear.  
13 It's not the same thing.

14 **Q.** So perhaps there is a distinction between, on the one  
15 hand, accurately describing the risk and, on the other  
16 hand, engendering fear?

17 **A.** Yes, absolutely. And -- yes. Fear is also, or can be,  
18 an outcome of that risk perception. So where you have  
19 a high level of risk perception and you don't think  
20 there's anything you can do to protect yourself, that  
21 might generate fear. But where you think you can  
22 protect yourself and take steps to protect yourself and  
23 your loved ones, that should mitigate that process. So  
24 it's not the same thing, it's a different -- a different  
25 aspect of behavioural science.

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1 fear and anxiety is an effective or an appropriate way  
2 of encouraging behaviour change in the context of  
3 a pandemic such as Covid-19?

4 **A.** No, and we argued against it on multiple occasions.  
5 I think in my statement I've given 14 examples of papers  
6 where we said it would not be an effective or  
7 an appropriate thing to do.

8 **Q.** Yes, and I'm going to take you to that part of your  
9 statement. Perhaps it's obvious from what you've said,  
10 but to be clear, did SPI-B in fact propose any sort of  
11 fear policy during the pandemic?

12 **A.** No.

13 **Q.** Let's look at your statement. Page 69, please,  
14 paragraph 17.1.

15 Now, this is the beginning of a lengthy section of  
16 your witness statement on this issue, Professor. In  
17 summary, is it right that you say here that risk  
18 perception is a key factor in motivating behaviour  
19 change?

20 **A.** Yes.

21 **Q.** Can you explain how that is different from saying that  
22 you can frighten people into changing their ways?

23 **A.** Well, risk perception is simply -- okay, so the  
24 traditional model of risk perception, which I'll stick  
25 to, because I think it's easiest, is your understanding

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1 **Q.** Let's look, because it's right, isn't it, there was one  
2 particular paper produced by SPI-B that was the focus of  
3 some --

4 **A.** Yes.

5 **Q.** -- criticism and debate on this issue?

6 **A.** Absolutely.

7 **Q.** If we can look at it, please, it's INQ000196761.

8 We see at the top the date, which is a notable one  
9 in the sense that it's 22 March, so it's actually  
10 a Sunday, before the lockdown was announced on Monday,  
11 23 March.

12 So was this paper produced urgently?

13 **A.** I think we were asked for it on the Friday, the team  
14 worked on it over the weekend, as you can see it's  
15 signed off on the Sunday, and went straight into SAGE  
16 I think it was Monday morning. So it -- yes, it was  
17 quick.

18 **Q.** You describe in your statement that in fact I think  
19 there were two papers that you were asked to produce  
20 within that short timescale?

21 **A.** Yes, that's right. So we had one paper looking at: what  
22 do we think are the current levels of adherence to  
23 the voluntary guidelines that the government have put in  
24 place at that time? And we had another paper on: what  
25 are all the options the government might want to

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1 consider in terms of ways of increasing adherence?  
 2 **Q.** You took the lead in drafting the first of those papers,  
 3 and Professor Michie took the lead on the second one,  
 4 which is the one we're looking at?  
 5 **A.** Yes, that's correct.  
 6 **Q.** As you say, the focus of the paper was then how to  
 7 increase adherence to the existing social distancing  
 8 measures, so what we have in mind is not the lockdown  
 9 that was announced only a day or so later, but those  
 10 other NPIs about distancing, isolating, working from  
 11 home, and so on, that had been announced in the week or  
 12 so beforehand?  
 13 **A.** Yes. And for context, virtually all of those NPIs were  
 14 voluntary, there was no legislation that someone had to  
 15 do something or had to do a different thing --  
 16 **Q.** Yeah.  
 17 **A.** -- it was all guidance.  
 18 **Q.** If we look then at the note, we see at the top the paper  
 19 addresses two quite separate categories, one is the  
 20 general social distancing by everyone, and that's those  
 21 NPIs I think we've just been describing, the other is  
 22 rather separate, it's about shielding vulnerable people.  
 23 The first part of the paper was devoted to  
 24 identifying a series of angles or means by which it was  
 25 suggested those -- that first category of measures, the  
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1 among those who are complacent, using hard-hitting  
 2 emotional messaging. To be effective this must also  
 3 empower people by making clear the actions they can take  
 4 to reduce the threat."  
 5 The focus of the debate was on the last sentence or  
 6 so, the language of "The perceived level of personal  
 7 threat needs to be increased among those who are  
 8 complacent, using hard-hitting emotional messaging". It  
 9 was suggested, was it not, that that amounted to SPI-B  
 10 recommending a policy of frightening people into  
 11 complying with this guidance?  
 12 **A.** That was the suggestion from others, yes.  
 13 **Q.** What's your response to it?  
 14 **A.** It's not correct. So, this isn't a paragraph about  
 15 raising fear, this is a paragraph about complacency, as  
 16 it says. At the time it was written, there were data  
 17 suggesting that still at that stage of the pandemic,  
 18 22 March, substantial numbers of people did not seem to  
 19 appreciate the genuine level of risk that they faced,  
 20 both in terms of Covid and also in terms of the other  
 21 non-Covid risks, the knock-on risks that might affect  
 22 them, things like if you come off your motorbike and you  
 23 need emergency admission to hospital and the NHS has  
 24 been overwhelmed many times over, which is what the risk  
 25 was, that also poses a risk to you. So it wasn't just  
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1 general social distancing measures, could be brought up  
 2 in terms of compliance?  
 3 **A.** Yes, correct.  
 4 **Q.** And we see then, towards the bottom of the page, there  
 5 is "Education", numbered 1, "Persuasion", numbered 2.  
 6 If we could just look over the page we will see that  
 7 there are then a series of other suggestions:  
 8 incentivisation, coercion, enablement and so on?  
 9 **A.** Yes, the idea was to lay out all of the options that  
 10 the government had on the table.  
 11 **Q.** The focus for the debate which followed was on  
 12 the second of those, it was on the persuasion  
 13 subcategory; is that right?  
 14 **A.** Yes.  
 15 **Q.** So if we can go back, please, to the page before and  
 16 look at the bottom half of the page, we see this  
 17 paragraph numbered 2:  
 18 "A substantial number of people still do not feel  
 19 sufficiently personally threatened; it could be that  
 20 they are reassured by the low death rate in their  
 21 demographic group, although levels of concern may be  
 22 rising. Having a good understanding of the risk has  
 23 been found to be positively associated with adoption of  
 24 COVID-19 social distancing measures in Hong Kong. The  
 25 perceived level of personal threat needs to be increased  
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1 about Covid.  
 2 So the idea behind this paragraph was: how can we --  
 3 how can we break through that scepticism? How can we  
 4 break through -- the word we used was "complacency", and  
 5 arm people with an appropriate understanding of  
 6 the genuine level of risk that they did face, and also,  
 7 as it says, empower them at the same time with knowledge  
 8 about the steps they could take to protect themselves.  
 9 So it wasn't a case of taking people who had  
 10 an appropriate appreciation of the level of risk they  
 11 faced and raising that further, it was the opposite. It  
 12 was taking people who didn't really appreciate, didn't  
 13 fully understand the risks that were coming down  
 14 the line, and trying to find a way to explain that to  
 15 them.  
 16 **Q.** So making clear the risk, educating people, rather than  
 17 frightening them, to go back to the distinction we were  
 18 discussing earlier?  
 19 **A.** Absolutely. If you wanted a paper on the attitude of  
 20 the committee towards fear, this is the wrong paper.  
 21 The right paper is the one we wrote a week later that  
 22 went to the Cabinet Office on 3 April. The very first  
 23 bullet point -- that was a paper entirely about  
 24 messaging, and the very first bullet point of it was:  
 25 don't use fear, it won't be effective.  
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1 Q. As in fact you mentioned when I started asking you about  
2 this, you emphasise in your statement that throughout  
3 the pandemic the message from your committee, not just  
4 in that paper you just told us about, was that fear was  
5 not an appropriate mechanism for securing compliance  
6 with the rules?

7 A. We said that in our papers, we said it in the research  
8 that my team did that went straight to DHSC  
9 communications teams, we said it in personal  
10 conversations with members of the government. Yes, it  
11 was repeated many times.

12 Q. Can I just ask you, why not? Why was fear not something  
13 that should be pursued?

14 A. I mean, there's a few reasons. To start with, during  
15 lockdown, in a way there is no point, because if people  
16 can't go to the pubs or the night clubs because they're  
17 shut, well, it's not an issue about motivation any more,  
18 so it kind of changes the -- it changes the  
19 considerations.

20 Also there is a challenge of people can turn off if  
21 you give them fear-based messaging, because it can be  
22 distressing and so the way to cope with that is not to  
23 pay attention to the messages.

24 There are also other issues raised in terms of  
25 communities where actually they don't have control over

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1 fear/disgust will also likely be ineffective", was that  
2 the paper you mentioned a few moments ago that went to  
3 the Cabinet Office shortly after the paper we were  
4 looking at?

5 A. Yes, this was a -- this is one of the kind of  
6 core principle papers that we put together where we  
7 outlined what we thought about what an effective  
8 communication strategy in a public health crisis like  
9 this would look like.

10 As you can see from the date, it's only a few -- and  
11 apologies, I think there's a typo in the date, it's  
12 not 2022, it's 2020.

13 LADY HALLETT: I was just about to ask you that.

14 A. Yes, apologies.

15 So this was only a few days later, and it was sent  
16 direct to the Cabinet Office.

17 MR O'CONNOR: So those are examples, and the list goes on,  
18 of papers where you are, as it were, rejecting the fear  
19 as a tool.

20 If we can just move forward to page 75, please, at  
21 paragraph 17.18 you make the point that, as well as  
22 rejecting the fear suggestion, you proposed a different  
23 approach. You say:

24 "In fact, SPI-B spent its time trying to work out  
25 how to support members of the community, not scare

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1 the level of risk that they're facing, in which case  
2 simply frightening them, and if there's nothing they can  
3 do about that risk, well, that's not a productive thing  
4 to do either.

5 So there's lots of reasons not to do it. It's  
6 a slightly different thing in terms of risk perception,  
7 but I think that's the point around this, people did  
8 need to be armed with an appropriate understanding of  
9 the genuine level of risk that they were facing, but  
10 I think that's a different thing to fear.

11 Q. Let's just look briefly, then, at a couple of paragraphs  
12 in your statement, Professor. First of all, can we look  
13 at page 73, please.

14 At paragraph 17.16, you refer there to the article  
15 we've just been looking at, the report we've just been  
16 looking at, and you are rejecting the suggestion that  
17 was raised, as we've discussed, that that report was  
18 about engendering a culture of fear.

19 A. Yes.

20 Q. But you go on to say that that allegation made against  
21 SPI-B ignores many quotations from your work and others  
22 in the same field that repeatedly argued for the exact  
23 opposite, and then you list a series of papers on that  
24 very theme, and it may be that the third of those,  
25 "Messages based solely on information, authority or

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1 them."

2 Again, you give us a list of papers on that theme.

3 A. Yes. I think this is quite important. So, again, it  
4 comes to that point of understanding what it is that's  
5 preventing people from engaging in behaviours to protect  
6 themselves. The idea of fear might be, well, they're  
7 not motivated to protect themselves. That wasn't the  
8 case. For most people they were very motivated to  
9 protect themselves and to protect their loved ones and  
10 to do the right thing for society. The barrier was  
11 actually they didn't have the finances to do it or they  
12 didn't have the support from their workplace to do it or  
13 they didn't understand what the rules were.

14 That's what we mean by focusing on support, enabling  
15 people to carry out the behaviours that they want to do,  
16 rather than trying to scare them into doing it. It was  
17 the first we wanted, not the latter.

18 Q. In fact if we go to the next page, you make a similar  
19 point at paragraph 17.19, you say:

20 "... far from arguing that risks should be  
21 exaggerated to promote fear, we made it one of our  
22 guiding principles that what was needed above all else  
23 was clarity."

24 And as we've said, that indeed was present in  
25 the paper we looked at about understanding the risk?

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1 **A.** Yes, absolutely.  
 2 **Q.** Just dropping down to the bottom of that page, you refer  
 3 to an exchange in January 2021 with Dr Ben Warner, who  
 4 will come to give evidence to the Inquiry in a couple  
 5 of weeks' time. He had approached you, it seems, or  
 6 sent you an email asking "whether rational messaging or  
 7 emotive messaging would be best in encouraging people to  
 8 adhere to guidance when in self-isolation",  
 9 January 2021, around the time of the third lockdown, and  
 10 you responded by saying you would have concerns about  
 11 ramping up fear, you would be concerned about messages  
 12 focusing on death and people who were ill.

13 So is this very much the same theme?  
 14 **A.** Yeah, it's a specific instance of it. And I want to be  
 15 clear, I don't in any way think that Ben was pro-fear,  
 16 I think he was quite right to come to the committee who  
 17 specialised in that and ask for advice on it, and we  
 18 gave him the advice and he accepted that and took away  
 19 a different way of doing it. So I think it's an example  
 20 of the system working.

21 **Q.** Well, certainly as far as your communications with  
 22 Ben Warner are concerned, but just noting the date  
 23 there, the early 2021, if we can have a look at, please,  
 24 INQ000197157, these are some WhatsApps from  
 25 Matt Hancock's phone, Professor. If you look at the

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1 activities should or shouldn't be prohibited.  
 2 Mr Hancock says:  
 3 "yep. I think the problem is that the levers not in  
 4 the hands of [No 10] & DHSC are harder to pull."

5 He says:  
 6 "I honestly wouldn't move on any small things unless  
 7 we move on a lot.

8 "The only big remaining things are nurseries and  
 9 workplaces."

10 Then this from the Cabinet Secretary:

11 "I agree -- I think that is exactly right. Small  
 12 stuff looks ridiculous. Ramping up messaging -- the  
 13 fear/guilt factor vital."

14 "Ramping up messaging -- the fear/guilt factor  
 15 vital", that seems to be completely in contrast to  
 16 the advice you had given Ben Warner a few days before?

17 **A.** We -- we wrote a paper on what might need to be done in  
 18 the context of this new variant I think towards the end  
 19 of December. It should be in my statement. And in that  
 20 paper we set out a specific list of areas that messaging  
 21 might consider, looking at things like supporting  
 22 the public, telling them what a great job everyone had  
 23 been doing but the situation had changed, being clear  
 24 with people about the risk, explaining to people what  
 25 they needed to do, providing additional support. This

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1 top, you can see a very similar period, December 2020,  
 2 so a few weeks before perhaps Ben Warner contacted you,  
 3 and Matt Hancock here is having exchanges with someone  
 4 called Damon Poole, who was one of his media advisers.

5 We can see three lines down Mr Poole is saying:

6 "Rather than doing too much forward signalling, we  
 7 can roll pitch with the new strain."

8 The new strain, the Alpha variant, early 2021?

9 **A.** Yes.

10 **Q.** Mr Hancock replies:

11 "We frighten the pants [off] everyone with the new  
 12 strain."

13 Mr Poole says:

14 "Yep that's what will get proper behaviour change."

15 Mr Hancock says:

16 "When do we deploy the new variant."

17 Is this the sort of messaging that your committee  
 18 would have advised?

19 **A.** No.

20 **Q.** Lastly, if we can go on a few pages to page 9 of the  
 21 same document, here this is 10 January, so in fact  
 22 three days after that exchange with Dr Warner that you  
 23 just mentioned, a discussion on this occasion between  
 24 Simon Case, the Cabinet Secretary, and, again,  
 25 Mr Hancock. They're discussing the tier system and what

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1 doesn't map on to it at all.

2 **Q.** What's your reflection on all this, then, Professor?

3 You referred earlier to the black hole in which you felt  
 4 sometimes that your work disappeared into. We've seen  
 5 your exchange with Dr Warner, you tell us about  
 6 the paper you had written specifically about the Alpha  
 7 variant, and yet we see here senior figures,  
 8 the Secretary of State for Health,  
 9 the Cabinet Secretary, talking about "frighten[ing]  
 10 the pants off people", "deploy[ing] the new variant,  
 11 "Ramping up messaging -- the fear/guilt factor vital".  
 12 What's your reflection on that state of affairs?

13 **A.** I think we had impact in terms of the advice at  
 14 a certain level of the civil service and at certain  
 15 level of advisers who I think were reading it,  
 16 understanding it, engaging with it. We had mechanisms  
 17 such as -- we call them teach-ins, where as well as  
 18 writing a paper we would do a presentation and anybody  
 19 who wanted to join from the civil service could come  
 20 along and listen to the academics and then ask us  
 21 questions, and we would give them advice on, you know,  
 22 how to implement this and what the nuances were.

23 So I think -- I think the stuff we were writing had  
 24 an impact at a certain level, and possibly at  
 25 an operational level, and that's probably quite a good

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1 thing. At the ministerial level, I don't know. I've  
 2 never met a minister, I don't know how they operate,  
 3 I don't know what they read or what they don't read,  
 4 I don't know who they take advice from. I'm not sure  
 5 I can help you with what they're thinking when they're  
 6 putting together policies or communicating like this.

7 **MR O'CONNOR:** Thank you very much, Professor.  
 8 My Lady, those are all the questions I have. I know  
 9 that there are some questions that will be asked by, on  
 10 behalf of core participants.

11 **LADY HALLETT:** I think is it Mr Dayle going first?

12 **MR O'CONNOR:** It's a matter for you, my Lady, but certainly  
 13 as far as the families are concerned, Ms Morris will be  
 14 asking questions first, but --

15 **LADY HALLETT:** Are you ready to go, Ms Morris?

16 **Questions from MS MORRIS KC**

17 **MS MORRIS:** Good afternoon, Professor Rubin, I ask questions  
 18 on behalf of the Covid Bereaved Families for Justice,  
 19 and I've got two topics I'd like to ask you about,  
 20 first.

21 The first is advice on mass gatherings, and  
 22 the second is some work you did around social greetings,  
 23 handshakes, fist bumps. So, looking at the first of  
 24 those, please, and I'd just like to have on screen,  
 25 please, a paper from SPI-B from 4 March, INQ000196744,

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1 **A.** Yes, because the -- if we think about it in terms of  
 2 what the public believe is the most effective thing to  
 3 do --

4 **Q.** Yes.

5 **A.** -- and which has the fewest costs, and bearing in mind  
 6 these all have very substantial costs to members of  
 7 the public, but still looking at -- hence "easiest" in  
 8 scare(?) quotes -- yes, because data at that point was  
 9 showing that members of the public believed they'd be  
 10 effective --

11 **Q.** Yes.

12 **A.** -- and they would be relatively easy to explain, then  
 13 yes, from a behavioural point of view, they would be the  
 14 easiest ones to do.

15 **Q.** Thank you.

16 Is it correct that by 4 March some polling done by  
 17 the Department of Health and Social Care showed that  
 18 around 60% of the public believed that an effective way  
 19 of preventing the spread of the virus was to keep away  
 20 from crowded places? I think that actually went up  
 21 a few weeks later to 73%.

22 **A.** I would need to check my notes on the actual numbers.  
 23 It sounds right.

24 **Q.** Okay. We'll look at the 12 March minutes in a moment  
 25 and that does include the 73% polling rate, so we can

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1 please. Thank you.

2 If we can just look at paragraphs 2 and 3, first,  
 3 please, for some context. Do we see in this set of  
 4 reports that there has been a discussion about what  
 5 interventions are likely to be effective and what are  
 6 likely to be accepted by members of the public?

7 **A.** Yes. Well, SPI-B would not have considered what was  
 8 likely to be effective.

9 **Q.** Understood.

10 **A.** That would be an issue for SPI-M or SAGE to consider,  
 11 but SPI-B would have looked at what's most likely to be  
 12 acceptable to the public, yes.

13 **Q.** Thank you, that's helpful.

14 You say this:  
 15 "... most likely to be socially acceptable involves  
 16 isolation of symptomatic cases and isolation of at-risk  
 17 members of the public. These are also the most closely  
 18 targeted, and therefore obviously legitimate,  
 19 strategies."

20 "3. Following this, social distancing and  
 21 prevention of public gathering measures are the next  
 22 'easiest' to add to the mix."

23 So by that are you suggesting that they are the ones  
 24 which the public will find most easy to accept in terms  
 25 of their response?

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1 identify that in due course.

2 As part of that understanding of the public's view,  
 3 did SPI-B advise that there would be a sort of  
 4 expectation on behalf of the public that mass gatherings  
 5 should be banned?

6 **A.** Yes, we did say that, on a couple of occasions, that  
 7 the public clearly expected this to happen, and if the  
 8 government's decision was that they were not going to do  
 9 that, that would lead to a kind of a mismatch between  
 10 what the public thought should happen and what  
 11 the government were deciding, and that mismatch would  
 12 need to be well explained if the government wanted to  
 13 maintain trust.

14 **Q.** Thank you.

15 We can move, then, please, to the 12 March minutes,  
 16 and that's INQ000196748, please, and if we start at  
 17 page 2, please, paragraph 14 -- there is no  
 18 paragraph 14, they are bullet pointed, forgive me. Let  
 19 me just identify the correct point.

20 Sorry, it's page 1, and it's the 73% figure I just  
 21 wanted to reassure you with, Professor. Page 1, there  
 22 is a paragraph that says there's some DHSC polling.

23 I think it's the penultimate paragraph. Thank you  
 24 very much.

25 This just confirms that as of 12 March:

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1 DHSC [has] been conducting some polling of  
2 approximately 2,000 people ..."  
3 And, just towards the bottom there:  
4 "... whether they agree or disagree that keeping  
5 away from crowded places generally is a good way to  
6 prevent the spread of coronavirus ... 73% of respondents  
7 agree with the statement. This proportion has risen  
8 since [your] last report from SAGE."

9 As of 12 March it's 73% of people polled.  
10 Thank you.

11 Staying on page 1, please, I think a little further  
12 up to the top -- it's very small on my screen, forgive  
13 me, but the second bullet point, please, the summary of  
14 the position there is that:

15 "SPI-B cannot comment on the impact of gatherings on  
16 disease transmission."

17 Is that because it's outside the remit of the  
18 committee?

19 **A.** Yes.

20 **Q.** "In this report, we list behavioural factors to weigh-up  
21 when making decisions. In particular, we reiterate our  
22 point from 4 March that, if a decision is made not to  
23 ban or discourage public gatherings, a clear explanation  
24 should be given to the public."

25 You've just mentioned that important context  
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1 pubs.

2 So that was one of your concerns; is that right?

3 **A.** Yes, I wonder if I'm reading a different bullet point to  
4 you, is this the top bullet point?

5 **Q.** Sorry, it's still on page 3. I'd like page 4 up,  
6 please, if that's possible. If there is a page 4.

7 **(Pause)**

8 **LADY HALLETT:** There is only page 3, I'm afraid. I'm hoping  
9 that's the signal I'm getting.

10 **MS MORRIS:** Yes, I think it is, my Lady?

11 **A.** There was an addendum to this paper --

12 **Q.** No, it is bullet point 3 but it's within the top -- it's  
13 at page 3 but the top point:

14 "... could have complex and unforeseen effects ..."

15 "In our 4 March report, we highlighted the risk that  
16 applying multiple interventions concurrently (including  
17 the suspension of public gatherings such as football  
18 matches or restrictions of pubs or restaurants) could  
19 have complex and unforeseen effects, including  
20 the displacement of social activities to other venues."

21 Would that include pubs and other places to watch  
22 sporting events, for example?

23 **A.** Yes, although the example we give is restrictions on  
24 pubs, so it wouldn't have included pubs in this specific  
25 instance, but the general point is, closing lots of

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1 a moment ago. Turning on to page 2, then, please,  
2 thank you, and it's the first bullet point for emphasis,  
3 please:

4 "Acting in a way that does not meet expectations  
5 poses a risk that a section of the public will view  
6 Government actions as incompetent or not in the public's  
7 best interests. It may also be taken as signifying that  
8 the situation is not expected have expected to be severe  
9 for the UK. This could have knock-on implications for  
10 public attitudes to other recommendations made by  
11 Government."

12 So you're being quite clear there, are you not, that  
13 if mass gatherings aren't banned there will need to be  
14 a clear explanation as to why not?

15 **A.** Absolutely. As you can see, lots of people took the  
16 intuitive view that they should be. The government took  
17 a contrary view, and in terms of maintaining the trust  
18 of the public that the government is acting in  
19 a competent way and protecting them, yes, that gap  
20 needed to be well explained.

21 **Q.** Is it right that in this same paper, so again 12 March,  
22 I think it's on page 4, please, you looked at one of the  
23 risks of cancelling large events. I think it says there  
24 is a risk of cancelling some large events may result in  
25 displacement of the activities to other venues, such as

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1 things at the same time, it may make it slightly  
2 unpredictable where people go next, and you just need to  
3 be careful in how you manage that.

4 **Q.** Yes.

5 "This would require careful management ..."

6 But were you ever asked to look at or explain what  
7 other things could be put in place to mitigate that risk  
8 or what the public response would be to them?

9 **A.** Well, we did have -- we did have papers on policing that  
10 particularly looked at how enforcement of these kind of  
11 issues could be carried out. I would need to check on  
12 the timing of those as to whether we made that advice at  
13 this point or not.

14 **Q.** Okay, but you think that would have come later, after  
15 12 March?

16 **A.** I'm sorry, I would have to --

17 **Q.** Okay. Not to worry. Not a huge amount turns on it.  
18 But you've highlighted here, haven't you, that there are  
19 some other considerations that need to be thought of,  
20 and that's your clear recommendation to the reader of  
21 this paper?

22 **A.** Yes.

23 **Q.** Thank you.

24 Topic 2, then, please, staying in early March and  
25 talking now about social greetings and handshaking in

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1 particular.  
 2 So INQ000129018, please.  
 3 This is an email chain. I'm not going to take you  
 4 all the way through it, I'm just going to pick out some  
 5 key parts.  
 6 Page 5 first, please, on 3 March is it correct that  
 7 in response to some research done by Mr Amlot of Public  
 8 Health England sharing a summary of existing research on  
 9 social greetings, which showed that reducing handshakes  
 10 could reduce transmission but there may be some  
 11 opposition for example for social cultural reasons, he  
 12 puts his summary, I think starting there at the bottom  
 13 of page 5, which we're on, so it starts "Dear all", and  
 14 then goes over to page 6, he sets out a summary there of  
 15 his understanding of the work to date, if I could put it  
 16 that way, on social greetings.

17 But the point I wanted to ask you is back on page 5.  
 18 As a result of that summary being shared with you, you  
 19 offer to help Mr Amlot and do some further digging into  
 20 this as an area. I think we can see --

21 **A.** I'm afraid this is the first I've seen of this email for  
 22 three years so you'll have to forgive me a bit, I --

23 **Q.** Not a problem. At the top of page 5, 3 March:

24 "Dear Richard

25 "This looks good -- impressive speed!

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1 much indeed.

2 Just take a moment to read that through, Professor,  
 3 in case you haven't seen it before. I don't think  
 4 you're in the email chain.

5 It says:

6 "Dear all,

7 "We've all recently spoken and I thought I'd  
 8 summarise where we are:"

9 First bullet point:

10 "- We've had a steer from Peter Heneghan (Deputy  
 11 Director of Digital at No 10 ...) via ... (PHE ...), NOT  
 12 to pursue the 'fist-bump' work, as it may distract from  
 13 the hand washing messaging. There was concern that even  
 14 carrying out the demo was a risk."

15 So my question was whether you were aware of this  
 16 steer or the suggestion that the so-called fist bump  
 17 work should stop?

18 **A.** Again, apologies, this wasn't in my EP so I've not had  
 19 any chance to consider this, but I'm not sure what the  
 20 "'fist-bump' work" is that they're talking about in this  
 21 email.

22 **Q.** Okay. Did your co-authoring or your project that you  
 23 had suggested on 3 March continue?

24 **A.** Yes, no, we wrote an opinion piece that went to the BMJ  
 25 on -- I think we titled it "Is it time to wave goodbye

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1 "Louise (my post-doc) has just written an opinion  
 2 piece on 'Waving goodbye to the handshake' -- would you  
 3 be interested in merging some of your reviews into it  
 4 and co-authoring?"

5 **A.** Yes, and apologies, what was your question?

6 **Q.** My question was just simply to ask you that you had seen  
 7 this report from Mr Amlot, you had offered to help do  
 8 some work around social greetings and around handshakes  
 9 in particular and their impact on virus transmission?

10 **A.** Oh, I see. So we were already thinking about the same  
 11 kind of issues as Richard. I work with Richard Amlot  
 12 quite a lot and he had shared this with me, clearly, and  
 13 we invited him to co-author this opinion piece on it.

14 I don't think we were offering to do work for him on  
 15 it --

16 **Q.** I see.

17 **A.** -- I think it was more a case of: we have convergent  
 18 thinking on this, should we team up and write this piece  
 19 together?

20 **Q.** I'm with you, thank you.

21 Later on in the email chain that we have here, it's  
 22 on page 2, please, there is an email from Richard Amlot  
 23 again, dated 4 March this time, in the middle, "Dear  
 24 all".

25 Just highlight that email, please. Thank you very

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1 to the handshake?" We'd certainly continued with that  
 2 and produced that piece. From recollection I think  
 3 Richard was a co-author on it and we did then send that  
 4 in to Public Health England for them to think about.  
 5 And, as ever, I don't know what happened to it after  
 6 that but we certainly published it.

7 **Q.** So what was the conclusion of that report?

8 **A.** That it would be -- essentially, yes, for the time being  
 9 it probably was time to wave goodbye to the handshake.  
 10 You know, we've welcomed it back again, but at that  
 11 stage, yes.

12 **Q.** It suggests from the email chain that that had been  
 13 authored before the beginning of March, is that right?

14 **A.** I think we were working on the idea before the beginning  
 15 of March, yeah.

16 **Q.** Okay. All right.

17 Were you aware from any public sources on 1 March  
 18 the Prime Minister had shaken hands at a hospital and  
 19 informed the public that he would continue to do so?

20 **A.** I mean, I know now that he said something along those  
 21 lines at around about that time, what I knew at  
 22 the time -- I think I did know that at the time,  
 23 actually, yes.

24 **Q.** Did that sit with the opinion you'd developed through  
 25 your work on waving goodbye to the handshake?

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1 A. Well, no.

2 Q. Okay. Can I ask you to look at one more document,  
3 please, and this is my final question, this is still  
4 page 1 of the document we have in front of us, again  
5 another email at the top of the page this is an email  
6 that Mr Halpern has sent to Dr Warner, to Ben Warner.  
7 Again, I don't think you've seen this before, Professor,  
8 please take a moment to have a look through it.

9 (Pause)

10 My question is whether you were aware that  
11 Mr Halpern had raised with Ben Warner the concern, which  
12 we can see at the bottom there, in italics, that  
13 the focus group evidence from this time suggested that  
14 the Prime Minister shaking hands was directly at odds  
15 with the messaging around avoiding too much personal  
16 contact and was felt to undermine the message that  
17 the government was taking Covid-19 really seriously?

18 A. I don't believe I was aware of those focus groups at  
19 the time, no.

20 Q. Okay. Would you agree with the concerns that the focus  
21 group had expressed from a behavioural science  
22 perspective?

23 A. Yes, if we want to demonstrate to the public that  
24 a certain behaviour is likely to increase transmission,  
25 which was the concern with handshaking, and

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1 A. Yes.

2 Q. Two, do you report the findings of a report by  
3 an organisation called CORSAIR?

4 A. Yes.

5 Q. Could you tell us what CORSAIR is or was?

6 A. Yeah, CORSAIR is a study run by my team in tandem with  
7 UCL and UK Health Security Agency. We take Department  
8 of Health polling data -- so the Department of Health  
9 and Social Care were carrying out surveys of  
10 2,000 people every few days throughout the pandemic, and  
11 CORSAIR's job, as a research study, was to analyse that  
12 data, add value to it by looking at specific issues  
13 within the data, and providing reports to the DHSC  
14 communications team.

15 Q. Then, before I get on to the key point of that sentence,  
16 you then go on to quote their findings that 87.9% of  
17 respondents knew if they had symptoms of Covid they  
18 should self-isolate, but only 62 knew the main rules of  
19 self-isolation?

20 A. Yes.

21 Q. Then you conclude the sentence by making the observation  
22 I want to ask you about, that knowledge of the key rules  
23 was worse in England than it was in Scotland, Wales or  
24 Northern Ireland?

25 A. Yes.

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1 the Prime Minister is continuing to pursue that  
2 behaviour, it does give, at best, mixed messages, yes.

3 MS MORRIS: Thank you very much.

4 Thank you, those are my questions.

5 Thank you, my Lady.

6 LADY HALLETT: Thank you, Ms Morris.

7 Mr Wilcock, are you going next?

8 Questions from MR WILCOCK KC

9 MR WILCOCK: Professor, I'm going to ask you some short  
10 questions on behalf of the Northern Ireland Covid  
11 Bereaved Families for Justice, and I would like to start  
12 off by reminding you of what's in paragraph 22.22 of  
13 your report -- which, for the operator, is on page 101  
14 of Professor Rubin's report.

15 Could we have that on screen, please?

16 Can you see that in the first sentence of that  
17 paragraph you state that you were:  
18 "... asked by the Inquiry to comment specifically  
19 about any challenges that the strategy of Test and Trace  
20 posed in terms of messaging."

21 A. Yes.

22 Q. Do you see that you then go on to make essentially three  
23 points: one, that a surprising number of people did not  
24 correctly report the symptoms of Covid-19 and link them  
25 to the policy in place?

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1 Q. Do you agree that if knowledge of key rules varied  
2 substantially across nations, that could potentially  
3 provide a basis for learning from those nations that did  
4 better?

5 A. Yes, yes, absolutely. And that, in a way, was one of  
6 the reasons why we split the group into those four  
7 categories, to see are there some nations that are doing  
8 better than others in terms of communicating this stuff,  
9 yeah.

10 Q. Could you comment on why the discrepancies that you  
11 found between the four nations may have existed?

12 A. Unfortunately not, no. And we say this in the paper.  
13 We can spot there is a difference there, but given the  
14 data we had, we didn't know why the difference was  
15 there.

16 Q. Has there been any further research on that since  
17 the paper you did?

18 A. Not by my team. I don't know if it was done by someone  
19 else.

20 Q. All right.

21 It would be fair to say, wouldn't it, that in terms  
22 of Northern Ireland it also indirectly received  
23 messaging from the Republic of Ireland?

24 A. Yes, certainly.

25 Q. And that shared media presented a challenge in terms of

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1 messaging within the north of Ireland, Northern Ireland?  
 2 **A.** I think we've just gone over the limits of my  
 3 understanding of the messaging in Northern Ireland, I'm  
 4 afraid.

5 **MR WILCOCK:** I do understand. Thank you very much.  
 6 They're all the questions I wish to ask.

7 **LADY HALLETT:** Thank you, Mr Wilcock.

8 Now, Mr Dayle, are you ready to go next?

9 **Questions from MR DAYLE**

10 **MR DAYLE:** I am, my Lady, thank you.

11 Professor Rubin, I ask questions on behalf of FEHMO,  
 12 the Federation of Ethnic Minority Healthcare  
 13 Organisations, and I have two discrete questions that  
 14 will invite you to clarify or shed some light on some  
 15 areas of interest.

16 First one, can you explain how behavioural science  
 17 was used specifically to address the challenges and  
 18 vulnerabilities faced by minority ethnic healthcare  
 19 workers during the pandemic?

20 **A.** Absolutely. If you forgive me, I'll direct to towards  
 21 the microphone, my apologies.

22 **Q.** Certainly.

23 **A.** So in terms of -- apologies, specifically healthcare  
 24 workers?

25 **Q.** That's correct, minority healthcare workers.

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1 principle, in terms of how behavioural science would be  
 2 of value to the question of vulnerabilities based on  
 3 ethnicity.

4 **A.** Sure. So I guess specifically around what behaviours  
 5 would protect healthcare workers of different  
 6 ethnicities. One of the issues in this whole area, as  
 7 I think I've alluded to, is there are different drivers  
 8 of behaviours depending on what that behaviour is, and  
 9 also what the group is that we're talking about. And  
 10 it's important to understand the kind of -- the  
 11 specificity of what those drivers are.

12 So where there are differences for, you know,  
 13 culturally diverse communities or young men or pregnant  
 14 mothers or whoever it may be, understanding the  
 15 specifics of what is driving that behaviour is  
 16 important.

17 One thing we did recommend, as I've said, throughout  
 18 the pandemic was the importance of co-producing guidance  
 19 with affected groups, precisely so that you could  
 20 understand what are the particular issues that are  
 21 facing that group. With masks, for example, do masks  
 22 fit appropriately around beards, if that's a cultural  
 23 issue, and understanding how to improve that, would  
 24 involve talking to those communities.

25 So I think that would be the key issue, is around

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1 **A.** So we did do some work on healthcare workers and  
 2 adherence to various forms of protective behaviour among  
 3 healthcare workers in general. Within that, from  
 4 memory, I think we did look at ethnicity as one of the  
 5 factors that played into that, but it was a small  
 6 sample, and this is one of the issues, is trying to draw  
 7 out lessons where -- you have a thousand people, of whom  
 8 only 200 are from ethnic minorities, of only a certain  
 9 number --

10 **LADY HALLETT:** Can you be careful -- I know you're trying to  
 11 be polite to Mr Dayle, but I'm losing your voice as you  
 12 turn from the microphone. Mr Dayle won't mind, he  
 13 understands.

14 **A.** Apologies, I'll address my Lady.

15 So we did have some data looking at ethnic  
 16 minorities in terms of healthcare workers, not very  
 17 much. I don't believe SPI-B wrote a specific paper on  
 18 ethnic minority healthcare workers. We did write  
 19 several papers looking at ethnic minority groups in  
 20 general, and particularly around communication, how to  
 21 communicate with culturally diverse communities. But  
 22 I'm afraid I don't think we specifically took on that  
 23 challenge.

24 **MR DAYLE:** Thank you for that.

25 If I can just push you a little bit more, just in

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1 understanding the drivers of those behaviours through  
 2 co-production of guidance.

3 **Q.** Thank you. That's very helpful.

4 My second question, and you perhaps have touched on  
 5 a little bit of it, but the question is: were there any  
 6 specific challenges related to the use of ethnicity data  
 7 in SPI-B's work, such as data availability or quality?  
 8 And, if so, how were these challenges addressed?

9 **A.** I think there were -- I mean, there were challenges for  
 10 data not just around ethnicity but throughout  
 11 the pandemic on all sorts of different areas in terms of  
 12 getting specific data around the specific issue that we  
 13 were looking at.

14 In the absence of specific data about this group,  
 15 and this behaviour, in this context, we were forced to  
 16 draw on theoretical principles and apply those to  
 17 the problem at hand, and then recommend that specific  
 18 behaviour -- specific data, rather, should be gathered.  
 19 And that runs through pretty much all of our papers, is  
 20 recommendations for additional research to look at these  
 21 specific areas. So I think that -- I think it was  
 22 an issue that we wouldn't have had that data, I think we  
 23 didn't have specific data on lots of different areas,  
 24 and I think the solution was using theories to do  
 25 the best that we could and then recommend somebody

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1 gather the data that would be needed to solve it  
 2 further.  
 3 Does that answer the question? Apologies.  
 4 **MR DAYLE:** I think it does. Thank you, Professor.  
 5 Thank you, my Lady.  
 6 **LADY HALLETT:** Thank you, Mr Dayle.  
 7 Mr Metzer, I think you have some questions.  
 8 **Questions from MR METZER KC**  
 9 **MR METZER:** Thank you, my Lady.  
 10 Professor Rubin, I ask a small number of questions  
 11 on behalf of the Long Covid groups.  
 12 At paragraph 4.3 of your witness statement, I don't  
 13 think we need to go there, you explain that PMT,  
 14 protection motivation theory, was a core theory of SPI-B  
 15 to motivate the public to protect themselves against  
 16 perceived severe threats.  
 17 In that same paragraph you acknowledge and  
 18 categorise Long Covid as an outcome that may be  
 19 perceived as a severe threat.  
 20 The questions I ask are: was SPI-B asked  
 21 specifically to advise decision-makers on how to  
 22 minimise the risk of Long Covid?  
 23 **A.** Specifically I don't believe so, but we would have been  
 24 looking generally at minimising the risk of catching  
 25 Covid and the risk of adverse outcomes generally, so  
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1 Would this be an example of an instance where SPI-B  
 2 raised an issue so that it is on the government's radar?  
 3 **A.** I don't think we were using it to raise the issue of  
 4 Long Covid, I think we were using these as examples of  
 5 the kind of things that -- this was a specific paper  
 6 about young people, so looking at the kind of things  
 7 that young people needed to be aware of in terms of  
 8 the risks to them. As you can see, the two we have  
 9 given as examples: risk to your family if you catch  
 10 Covid and take it home with you and risk that Long Covid  
 11 might be one of the long-term consequences for you.  
 12 **Q.** Yes, because you do spell out an example of Long Covid.  
 13 So the extract of the paper I've taken you to focuses on  
 14 messaging. Can you help, please: what impact would  
 15 the absence of public messaging on Long Covid have on  
 16 protective behaviours in the community to manage  
 17 the risk of Long Covid?  
 18 **A.** So I would -- I could only speculate if there was  
 19 substantial messaging about a high level of risk from  
 20 Long Covid that it would reach more people who might  
 21 potentially have the risk factors for that, and that  
 22 protection amongst that group would increase.  
 23 **Q.** So, conversely, if there is an absence of public  
 24 messaging, what does the impact have on protective  
 25 behaviours in the community in those circumstances?  
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1 I think it would have fallen within most of the things  
 2 we were looking at as a result of that, but no, I don't  
 3 think we had a specific commission on Long Covid.  
 4 **Q.** So you think that covers the remit of the advice that  
 5 you provided?  
 6 **A.** I'm sorry, I'm not sure I understand the question.  
 7 **Q.** Was that the extent of the advice in relation to  
 8 Long Covid?  
 9 **A.** The comment that you've read out?  
 10 **Q.** Yes.  
 11 **A.** I don't know for sure. I don't think we wrote  
 12 a specific paper on Long Covid, no.  
 13 **Q.** All right, thank you.  
 14 The second question I want to ask relates to public  
 15 messaging. I wonder if INQ000197208 could be put up,  
 16 page 2, please. It's the penultimate bullet point.  
 17 **(Pause)**  
 18 This I think was a SPI-B meeting paper from  
 19 22 October 2020 in response to a commission from  
 20 Cabinet Office comms on how best to promote adherence in  
 21 students and young people, and the bullet point  
 22 statements:  
 23 "Interventions should provide accurate information  
 24 on short-term and long-term consequences eg Long Covid,  
 25 risks to loved ones."  
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1 **A.** Well, if the intention behind the messaging is to  
 2 improve protective behaviours, then the absence of that  
 3 messaging will result in lower levels of protective  
 4 behaviour.  
 5 **MR METZER:** Thank you very much indeed, Professor Rubin.  
 6 Thank you, my Lady.  
 7 **LADY HALLETT:** Thank you, Mr Metzer.  
 8 That's it.  
 9 Thank you very much indeed, Professor Rubin.  
 10 Obviously you and your colleagues did a huge amount of  
 11 work to try to serve the public and advise  
 12 the government. It's unfortunate that your expert  
 13 advice was sometimes misinterpreted, misunderstood or  
 14 even possibly ignored. But I hope you and your  
 15 colleagues understand how much the rest of us appreciate  
 16 what you tried to do.  
 17 **THE WITNESS:** It's much appreciated, thank you.  
 18 **(The witness withdrew)**  
 19 **LADY HALLETT:** Right. Could we apologise to  
 20 Professor Yardley, please, I appreciate she will have  
 21 been here this morning, and I shall return at 2 o'clock.  
 22 **(12.58 pm)**  
 23 **(The short adjournment)**  
 24 **(2.00 pm)**  
 25 **LADY HALLETT:** Ms Cecil.  
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1 **MS CECIL:** Indeed, my Lady. The next witness is  
 2 Professor Lucy Yardley.  
 3 **PROFESSOR LUCY YARDLEY (affirmed)**  
 4 **Questions from COUNSEL TO THE INQUIRY**  
 5 **LADY HALLETT:** I'm sorry we've kept you waiting,  
 6 Professor Yardley. We try not to but sometimes it  
 7 happens.  
 8 **MS CECIL:** Indeed, Professor Yardley, thank you for  
 9 assisting the Inquiry today. I am Joanne Cecil, I'm one  
 10 of the junior counsel to the Inquiry, and I will be  
 11 asking you questions today.  
 12 The first thing I will ask you to do is to try to  
 13 keep your voice up. There is a stenographer in the  
 14 hearing room and so it may be that I ask you to take  
 15 things a little bit more slowly so that she can make  
 16 a note and accurately transcribe.  
 17 If you need a break, please just let us know.  
 18 Now, Professor Yardley, you produced a witness  
 19 statement for the Inquiry; is that right?  
 20 **A.** Yeah.  
 21 **Q.** It's dated 10 August 2023, and for the assistance of  
 22 those following it's at INQ000236376. Don't worry so  
 23 much about what's on your screen at the moment,  
 24 Professor Yardley, I can take you through it.  
 25 The first page is page 1 and it runs to 26 pages

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1 the Scientific Pandemic Influenza Committee.  
 2 **Q.** Thank you.  
 3 Turning now to the pandemic, your involvement in  
 4 the pandemic response and behavioural science advice  
 5 began prior to your involvement within SPI-B; is that  
 6 right?  
 7 **A.** Mm-hm.  
 8 **Q.** How did that come about?  
 9 **A.** Well, I have general expertise as somebody that  
 10 specialises in support for positive behaviour change in  
 11 relation to health, so I pioneered a methodology called  
 12 the person-based approach to developing interventions,  
 13 and that involves listening very carefully to the people  
 14 that the interventions are being designed for, working  
 15 with them to try to find ways of helping them to do  
 16 whatever behaviours it is they want to do. And because  
 17 of this expertise, which has resulted in a sort of very  
 18 substantial body of research, 600 papers and so on,  
 19 I became the theme lead for intervention development for  
 20 the NIHR Health Protection Research Unit in Behavioural  
 21 Science and Evaluation, and that involved working  
 22 closely with what was then Public Health England, and  
 23 also I had a particular expertise in controlling  
 24 infection transmission which dated back to the previous  
 25 pandemic. I'd actually had Medical Research Council

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1 in total with a declaration of truth. Is that right?  
 2 **A.** That's correct.  
 3 **Q.** Thank you. As we can see, Professor Yardley, just to  
 4 give some idea of your background, you were also  
 5 a member of SPI-B; is that right?  
 6 **A.** That's right.  
 7 **Q.** In fact you were the co-chair, along with  
 8 Professor Rubin, for a period?  
 9 **A.** That's right.  
 10 **Q.** I just want to deal with your professional background,  
 11 just very briefly, if I may. You are a professor of  
 12 health psychology at the University of Bristol and at  
 13 the University of Southampton?  
 14 **A.** Correct.  
 15 **Q.** You wear a number of different hats including being  
 16 a senior investigator at the National Institute for  
 17 Health and Care Research, and indeed you're  
 18 the behavioural science theme lead for one of the teams  
 19 there; is that right?  
 20 **A.** That's right.  
 21 **Q.** In terms of background and its relevance in respect of  
 22 the pandemic, you also participated in the earlier  
 23 incarnation of SPI-B, SPI-B&C, during the swine flu  
 24 pandemic in 2009 to 2010; is that ...  
 25 **A.** Yes, in fact I was a member of SPI, which is

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1 funding to develop an intervention, which we called Germ  
 2 Defence, which helped people reduce the transmission of  
 3 infection in the home. We actually trialled that in  
 4 20,000 people in the swine flu pandemic and it proved  
 5 effective at reducing infections/transmission in the  
 6 home.  
 7 So, yeah, I had both the sort of general expertise  
 8 in how to positively support behaviour change but also  
 9 the specific expertise in infection control.  
 10 **Q.** So a rather unique combination.  
 11 So, looking at the outset of the pandemic, at the  
 12 very beginning you were asked, back in January of 2020,  
 13 to provide advice to DHSC; is that right?  
 14 **A.** To -- yeah.  
 15 **Q.** To the DHSC?  
 16 **A.** Yeah.  
 17 **Q.** Department of Health and Social Care.  
 18 Following on from that, you were contacted by  
 19 Professor Rubin, that's towards the end of the month, on  
 20 26 January of 2020, and he sought to see whether you  
 21 agreed it would be appropriate to approach the  
 22 Department of Health to reconvene SPI-B, to put it back  
 23 together for this pandemic?  
 24 **A.** Mm-hm.  
 25 **Q.** I believe you agreed?

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1 A. Yes.

2 Q. And as a consequence of that, you subsequently became  
3 the co-chair on 12 April 2020, once it was set up?

4 A. Well, it wasn't really a direct route from one to the  
5 other. At first I was just a SPI-B member, like all  
6 the other members, right up until just after lockdown,  
7 and then I emailed James because I thought a very urgent  
8 priority at that point was to start thinking immediately  
9 about how we could help people safely come out of  
10 lockdown. So I emailed James that topic. He took it to  
11 SAGE, and SAGE agreed it was an important and urgent  
12 topic, and so James came back and asked me to lead  
13 a paper on that. I then took that paper to SAGE and it  
14 was really that process of sort of participating in SAGE  
15 that led to me being co-opted as a co-chair.

16 Q. Thank you.

17 You remained co-chair throughout that period, is  
18 that right, until you stepped down?

19 A. Mm-hm.

20 Q. Alongside that, you also participated in SAGE?

21 A. Yes. Well, it was in my role as co-chair of --

22 Q. Indeed.

23 A. -- SPI-B, yes.

24 Q. I understand that you attended 41 SAGE meetings in total  
25 over that period --

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1 during the pandemic, and indeed resources is one of  
2 those.

3 So perhaps let's go there first, in fact. So with  
4 respect to SPI-B, you had some administrative support,  
5 as I understand it, from GO-Science, but your broader  
6 concerns were effectively that there was very limited  
7 support, is that right, to either the chairs or  
8 the members in terms of that work product that you were  
9 asked to effectively advise on, and the evidence that  
10 would underlie it. Can you just explain a little bit  
11 about that, please?

12 A. It's -- really where the gap was in terms of collecting  
13 and collating the evidence that would inform our advice.  
14 So the evidence was all of the papers and even news  
15 reports that were coming out about what was happening  
16 around the world in terms of behaviour and strategies  
17 for containing the virus and how well those strategies  
18 were being implemented and accepted in different  
19 countries, and how effective they were being. And then  
20 there was -- James talked about a lot of data across  
21 government, which we actually didn't have access to  
22 a lot of it, but even if we had had, we wouldn't  
23 actually have had the capacity to have looked through it  
24 all and collated it all. And in fact we were all aware  
25 of enormous behavioural evidence gaps, because it was

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1 A. Yes.

2 Q. -- in that capacity. Thank you.

3 Just to get a sense of the output of SPI-B, we've  
4 heard a lot about its work already this morning from  
5 Professor Rubin, so I don't seek to go over that, but  
6 can you just give a broad idea of how much assistance  
7 you provided in terms of volume, so reports, papers,  
8 advice?

9 A. Well, as James said, I think it was 96 papers that we  
10 produced, but actually our activities went way beyond  
11 that, so that -- for example, I was on several related  
12 committees, I represented SPI-B on the JCVI, which is  
13 the Joint Committee on Vaccination and Immunisation,  
14 when it was formed, then I was also on the Testing  
15 Initiatives Evaluation Board, we gave ad hoc advice  
16 on -- you know, to individual departments if they asked  
17 for it. But I think probably the most time consuming  
18 thing of all of our work was that in order to be able to  
19 give expert advice we had to try to somehow produce the  
20 evidence for that, and we didn't have any resources or  
21 any --

22 Q. I'm going to bring you to that in just a moment.

23 A. Okay.

24 Q. No, not at all, not at all. I'm going to look at some  
25 of the challenges with you, if I may, that SPI-B faced

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1 an unprecedented situation. So you could look at what  
2 had happened in previous pandemics or in other related  
3 health conditions and try to draw parallels and  
4 inferences, which is what we did, but what you really  
5 needed was new research being done in real time at pace,  
6 and we all tried to do that, and in fact, you know,  
7 I had half a dozen studies at least, probably double  
8 that, probably a dozen studies that went forward during  
9 the pandemic that I initiated rapidly.

10 So, for example, from a qualitative study of  
11 the barriers that were faced by people on low incomes in  
12 adhering to self-isolation and how they couldn't isolate  
13 in the home right up to massive clinical trials, so --

14 Q. We have effectively a very broad range --

15 A. Exactly.

16 Q. -- of research and --

17 A. Yeah, and also all SPI-B members were doing that, so we  
18 were all trying to do that in our -- not spare time, but  
19 to try to produce the evidence that was needed.

20 Q. Of course. And that was very limited resource in terms  
21 of additional resource from GO-Science or the government  
22 or any other --

23 A. We didn't have any -- we had to apply for research  
24 funding, which of course added a lot of delay.

25 Q. Thank you.

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1 In terms of those lack of resources, how,  
2 specifically, do you consider that impacted your ability  
3 to advise on measures within and the pandemic?  
4 **A.** I think it was -- it had a real impact. It had a direct  
5 impact in terms of we didn't have as complete  
6 an overview of the evidence as it was coming in. It  
7 also impacted on who was able to provide the advice, and  
8 engage, because it was only people that were able to  
9 free up the time to be spending all their evenings and  
10 weekends doing this, which not everybody can, so yes, it  
11 definitely had an impact.

12 **Q.** That perhaps brings me to the second area that you  
13 identify within your witness statement, which is one of  
14 diversity within SPI-B, and you've just alluded to some  
15 of the external pressures in respect of individuals who  
16 could give up that time or couldn't because they had  
17 other additional caring responsibilities or whatever  
18 else it may be.

19 With regard to the composition of SPI-B, and  
20 certainly in the initial stages, looking back, how do  
21 you consider that to have looked in terms of diversity  
22 and was it at optimum diversity in your view?

23 **A.** The original diversity was limited because it was  
24 an ad hoc committee, really, that was sort of brought  
25 together at speed and somewhat informally through

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1 **A.** It's always best practice to have diversity on your  
2 research team, and in future that certainly should  
3 happen. Actually when you look at the advice that we  
4 gave, all of us, because we worked in public health, we  
5 were very aware of the differential impact of health  
6 problems and the measures that were taken to deal with  
7 them on different communities. So right from  
8 the beginning we were actually drawing attention to  
9 that, first as a risk and then, as it emerged, as  
10 something that was actually happening. And, you know,  
11 I was myself rapidly instigating research, reaching out  
12 and talking to communities that were affected, and so  
13 were other people on SPI-B.

14 So I think it probably didn't have a very bad  
15 influence on us. I think what was more of a problem was  
16 that -- I mean, James put it very well this morning,  
17 that it's not possible for any scientific team to  
18 represent all the sectors of the population, with all of  
19 their diversity, all their different circumstances. And  
20 that's why you really need excellent sort of community  
21 representation, so that all of the guidance that you're  
22 thinking about and all the recommendations you're  
23 making, you can involve members of the community that do  
24 have that broader representation, including representing  
25 people that don't have PhDs, which is important.

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1 the people that were already aware of each others' work  
2 in the field. Admittedly it is a very small field, as  
3 you mentioned, infection prevention in pandemics. So  
4 the people that had most expertise in that field, we  
5 were aware of them. But as the pandemic progressed, we  
6 were able to bring in a much wider group of people who  
7 didn't necessarily have that specialist expertise but  
8 had relevant expertise, and actually scientists all over  
9 the world and all over the UK were quickly upskilling  
10 themselves in those topic areas and carrying out  
11 research, so we were actually able to bring in a much  
12 wider pool of expertise, with much more diversity in all  
13 ways by the time of the summer.

14 **Q.** Just breaking that diversity down for a moment, you  
15 suggest in your statement that certainly there was  
16 a lack of diversity in expertise, that's one area, but  
17 also in relation to the representation of vulnerable  
18 minority and, you say, marginalised groups; is that  
19 right?

20 **A.** Yes.

21 **Q.** With respect to that lack of diversity, in that area,  
22 can I just ask: do you consider that the absence of  
23 those perspectives on SPI-B had an impact on the advice  
24 you were able to provide? I appreciate it's an issue in  
25 hindsight now, but can you assist us with that?

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1 **Q.** It's an additional way of drawing in some diverse  
2 experiences into the work that you were undertaking.

3 Certainly one of your recommendations within your  
4 witness statement is that in the future there should be  
5 a pre-existing register, essentially, of individuals  
6 with expertise in this area that can be drawn upon, and  
7 that should be refreshed?

8 **A.** Yes, but that's only half of it. That's the kind of  
9 expert bit, but what I also recommend is that there  
10 should be a pre-existing infrastructure that is --  
11 allows for that -- the expert -- experts and indeed the  
12 policymakers, to be involving a very wide, diverse  
13 sector of the community and especially people that are  
14 seldom heard and underrepresented, so that their voices  
15 and their concerns and the difficulties that they face  
16 will be taken into account right from the earliest  
17 stages of developing guidance.

18 **Q.** And that perhaps feeds into one of your key messages in  
19 relation to behavioural science itself, is a message or  
20 theme of co-production, essentially, with those  
21 individuals with lived experience or from  
22 the communities that are being focused or targeted by  
23 those behavioural changes?

24 **A.** Absolutely, yep.

25 **Q.** Now, the next topic I wish to move to with you, and

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1 you've touched upon it briefly already, is about  
2 the commissioning of advice from government or SAGE or  
3 indeed other departments within government to SPI-B.

4 If I can summarise it this way: my understanding is  
5 that the role of SPI-B was effectively to answer those  
6 questions either posed by SAGE, which had in turn  
7 responded to government questions, or those that came  
8 directly from government but through, effectively,  
9 GO-Science as a conduit?

10 **A.** That's right, that was written into our terms of  
11 reference.

12 **Q.** You describe that within your statement as being an  
13 arm's length, top-down process. What did you mean by  
14 that?

15 **A.** What I meant was that we never had any direct  
16 communication with the people that were asking for our  
17 views. Of course we did -- as a co-chair, I did sit on  
18 SAGE, so when SAGE was asking us questions I did have  
19 an understanding of that, but we didn't have  
20 an understanding of what the policymakers were  
21 considering or what their views were of our advice. So  
22 because it was arm's length like that, there was a lack  
23 of dialogue and I think a -- therefore, a lack of  
24 understanding about exactly why questions were being  
25 asked, what the options were that were being considered,

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1 was reliant on those commissions coming in from  
2 government and being framed by government; is that  
3 right?

4 **A.** Well, that is the way that it was set up initially, and  
5 I would say certainly until the end of March that was  
6 the way we seemed to operate, mainly. Towards the end  
7 of March and from the beginning of April, we sort of  
8 pushed back about -- against that a bit. That's when we  
9 started saying, you know, can we make suggestions  
10 ourselves, can we -- do we have to answer questions if  
11 we don't think they're the right questions? And we got  
12 clarification that actually we could ask questions  
13 ourselves as long as we got them approved, and we could  
14 push back and not waste our time on questions that we  
15 thought were inappropriate.

16 **Q.** Indeed. Just going back to, in fact, an email that you,  
17 I believe, referenced at the outset of your evidence,  
18 that's at INQ000188924.

19 What we see here is an email between you and  
20 Professor Rubin, and it's a little bit cumbersome, isn't  
21 it, but I'm just going to take it from the bottom,  
22 because that's how we read through them, and you're  
23 explaining that:

24 "[You] know that SPI-B tends to be reactive but in  
25 terms of horizon scanning [you] would just like to

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1 and why that was, and probably a lack of understanding  
2 the other way, that we weren't able to explain as -- as  
3 clearly as might be possible about why we were giving  
4 the advice we were.

5 **Q.** One aspect that you deal with within your witness  
6 statement, and perhaps I can just bring that up briefly,  
7 on page 10, paragraph 5.3, is clarity in commissions  
8 from government. I'm just waiting for that to come up  
9 at the moment. But what you say there -- perhaps I can  
10 read it to you while we wait -- is that:

11 "Sometimes delay was incurred if questions from  
12 government needed to be clarified or modified because we  
13 felt they were not formulated in the most helpful way.  
14 When this occurred, it usually seemed to reflect  
15 an unsophisticated understanding of human behaviour, and  
16 policymakers were open to our revisions."

17 So where you flagged those concerns back, were you  
18 able to get a more refined commission coming back to  
19 you?

20 **A.** Yes, I mean, we usually suggested ourselves the  
21 refinements we thought were necessary that would make it  
22 a meaningful question that we could use behavioural  
23 science to answer.

24 **Q.** Overall, you've described it as effectively a reactive  
25 committee as opposed to a proactive committee because it

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1 suggest that now is the time to prepare very actively  
2 the measures and messages to be employed when the aim is  
3 to slightly relax controls ..."

4 And you explain:

5 "... or we could end up in an undesirable situation  
6 of having a bounce back risky behaviour as soon as the  
7 extreme lockdown measures are eased, and having to  
8 re-impose them unnecessarily."

9 If I can just then take you to the reply at the top,  
10 what we see is Professor Rubin endorsing this,  
11 effectively, and saying "this is an extremely good point  
12 (as ever) from [you]", but it's really the last line of  
13 his email, which is:

14 "Could we advise you [so this is obviously SAGE] to  
15 ask us for advice on that?"

16 So, as I say, it's all a bit circular, isn't it, in  
17 that respect? You're putting in a bid and saying "Could  
18 you please advise us on these issues"?

19 **A.** It certainly was cumbersome. To be perfectly honest, we  
20 were starting work on a paper on that anyway, and it  
21 takes time to write a paper, so by the time they said  
22 "Yes, definitely", we had at least had a chance to make  
23 a start on the paper.

24 **Q.** Well, that's good news then at least.

25 So we can take that down now, please.

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1 The other aspect that I wish to ask you about in  
 2 respect of commissioning is the feedback. We've heard  
 3 it certainly referred to by Professor Rubin as being  
 4 a "black hole", your advice would go off, you wouldn't  
 5 know what had happened to it. What were the  
 6 consequences of that in terms of your work and your  
 7 ability to produce that advice and work?  
 8 **A.** Well, it didn't put us off trying to feed the  
 9 black hole. I mean, we were still keen to produce good  
 10 advice and to publish it, and although we didn't get  
 11 specific feedback often about how it was received,  
 12 sometimes you could just see signs that some of it had  
 13 been received and been acted on, or that that's probably  
 14 what had happened, because, you know, sometimes what  
 15 the government either did or said did seem to be  
 16 concordant with what we'd advised. Of course they might  
 17 have done that anyway, but it felt sometimes as if it  
 18 was landing.  
 19 But, yes, obviously it would have been helpful if  
 20 we'd known both when it was helpful but also when and  
 21 why it wasn't helpful, because if we'd understood better  
 22 what the barriers were for the government, you know,  
 23 that's our specialist expertise, helping people overcome  
 24 barriers, so, you know, we could have worked more  
 25 constructively to work with those barriers.

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1 that:  
 2 "SPI-M keeps ending up speculating that if you lift  
 3 one restriction then people will be less diligent about  
 4 observing the others. Not sure if that's anything more  
 5 than speculation."  
 6 So what we're seeing here are assumptions within  
 7 other committees and subcommittees of SAGE about  
 8 behaviour by people and populations; is that right?  
 9 **A.** That's what Mark's saying. Obviously I wasn't there,  
 10 so --  
 11 **Q.** Of course.  
 12 **A.** -- you know, this isn't -- hearsay from Mark to --  
 13 **Q.** No, no, of course, but what you do explain then quite  
 14 clearly in your reply is you say:  
 15 "No problem -- I don't think there is any evidence  
 16 for changing one regulation undermining adherence to  
 17 other regulations but that is exactly why we advocate  
 18 trialling a very small behaviour change when safe to do  
 19 so!"  
 20 You continue then to just comment on epidemiologists  
 21 and their views of people's behaviour and what can be  
 22 expected from them, and you say:  
 23 "I find epidemiologists tend to underestimate to  
 24 which what people will do is malleable and can be  
 25 influenced by how things are introduced and supported."

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1 **Q.** Indeed, and improve the advice and the output from  
 2 SPI-B.  
 3 The other aspect in relation to SPI-B was its  
 4 relationship with other bodies in terms of the work it  
 5 was undertaking. We know from what Professor Rubin has  
 6 already said there were a number of different  
 7 organisations dealing with communications, for example,  
 8 that you were working with, either based in  
 9 the Cabinet Office, Number 10, government departments,  
 10 and alongside that you were also working with SPI-M-O  
 11 and other subcommittees in relation to SAGE; is that  
 12 right?  
 13 **A.** Mm-hm.  
 14 **Q.** Now, we heard a little bit about behavioural fatigue and  
 15 effectively what other individuals were expecting in  
 16 terms of behaviour from the population, or from people  
 17 in general. I just want to ask you a little bit about  
 18 an email exchange that you were involved in with  
 19 Professor Woolhouse -- so SPI-M-O -- who we've heard  
 20 from earlier this week.  
 21 And it is INQ000103469, please.  
 22 What we have here, at the very outset at the bottom,  
 23 is you've provided a summary of SPI-B proposals for  
 24 consideration. We then have above it the reply from  
 25 Professor Woolhouse thanking you, but explaining here

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1 What formed your view in relation to your comments  
 2 regarding epidemiologists and their understanding?  
 3 **A.** That's because I do actually work with epidemiologists  
 4 quite a bit, and I did during the pandemic and --  
 5 you know, both in my research and sometimes I attended  
 6 SPI-M meetings, and I had a very good relationship with  
 7 them. But it comes back to the issue that was being  
 8 discussed this morning about predicting behaviour versus  
 9 changing behaviour, and epidemiologists are always  
 10 trying to build models that predict, so they tend to ask  
 11 the question: what are people going to do?  
 12 And I'm a behaviour change specialist, so my  
 13 question is: how can we support people to do a certain  
 14 thing, and how will the context of the support they have  
 15 and the circumstances they're in and the messaging and  
 16 so on influence that?  
 17 So quite often I would find that the epidemiologists  
 18 would be asking the question: will the, you know, people  
 19 adhere to this? And my answer would be: well, it  
 20 depends on how it's presented, how it's supported, what  
 21 barriers they face, and so on.  
 22 **Q.** It's not a straightforward single answer. Thank you.  
 23 I now want to move, if I may, to two very specific  
 24 areas, one certainly that you were asked to conduct some  
 25 work on and a separate issue that arose during

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1 the pandemic, and that is one of airborne transmission  
2 and the communication of risk.

3 Was the issue of airborne transmission and risk  
4 communication ever dealt with by SPI-B?

5 **A.** Oh, very much so, but not mainly by SPI-B on its own,  
6 because that would be very much a matter for other  
7 groups. So, for example, I co-authored papers with  
8 the Environmental Modelling Group on transmission in  
9 various situations, and NERVTAG would have had,  
10 you know, input into this kind of thing, because  
11 the extent to which transmission was airborne and  
12 the ways in which it was airborne weren't very well  
13 understood at the start of the pandemic. Obviously it  
14 was assumed there was airborne transmission, but how  
15 important that route was wasn't known.

16 **Q.** May I just interrupt just to ask you a very specific  
17 question. In fact it's been suggested by, and I'm sure  
18 you'll be very familiar with, Professor Noakes, who is  
19 the chair of the Environmental Modelling Group, EMG,  
20 that one of the reasons as to why airborne transmission  
21 was not made clearer at the outset of the pandemic to  
22 the population was because of the fear of public  
23 reaction.

24 Now, is that something that SPI-B could have  
25 assisted on in advising with respect to communication,

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1 health researchers we're aware of inequalities and  
2 structural reasons why some sectors of the population  
3 may be more vulnerable to infection and may be less able  
4 to carry out the things that -- needed to reduce that  
5 risk.

6 So one of the things that we were immediately aware  
7 of was that the policies for self-isolation, because  
8 there wasn't sort of financial support for it, would  
9 make it -- if you were depending on an income, make it  
10 very, very difficult to do.

11 **Q.** Thank you. In terms of the recommendations that you  
12 made, this was actually a recommendation where you did  
13 get some feedback; is that right?

14 **A.** Yes.

15 **Q.** From Sir Patrick Vallance, and what was that feedback?

16 **A.** The feedback was that there was strong push-back from  
17 the government that they didn't want to provide  
18 financial support.

19 **Q.** Now, we know that subsequently, at a later point in  
20 the year, in September of 2020, some measures were  
21 introduced in relation to grants for those on  
22 Universal Credit. Did you and members of SPI-B consider  
23 that to be an adequate response at that time or did  
24 the problems continue?

25 **A.** No, we didn't consider it adequate and we continued to

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1 and --

2 **A.** I've never heard that hypothesis, and I never heard that  
3 hypothesis at the time, I'd never heard anybody talk  
4 about airborne transmission being potentially a more  
5 scary mode and that we shouldn't talk about it. So  
6 I don't recognise that at all.

7 **Q.** But is it something that SPI-B could have assisted on if  
8 asked to advise on that specific issue in relation to  
9 minimising public fear?

10 **A.** Oh, absolutely, if there had been any concern about  
11 minimising public fear of airborne transmission, yes,  
12 that -- we could certainly have advised on that.

13 **Q.** Thank you.

14 The second aspect is one that you've briefly  
15 mentioned earlier in relation to papers produced by  
16 SPI-B, and that's adherence to self-isolation. Now,  
17 very early on in the pandemic, SPI-B advised on measures  
18 to assist in adherence to self-isolation, and one of  
19 those aspects was financial support; is that right?

20 **A.** That's right.

21 **Q.** At what point did you consider financial support to be  
22 important? So at what point did that issue become  
23 apparent to you in terms of the pandemic?

24 **A.** Right from the very first paper we wrote on the topic.  
25 And this is what I meant about because we're public

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1 push throughout the pandemic for better financial  
2 support, because we had good evidence that people were  
3 finding it very difficult to access the support, that it  
4 was very limited, lots of people didn't qualify for it,  
5 people didn't know that they could qualify for it, they  
6 couldn't access it quickly enough, and so on.

7 **Q.** Indeed, in November of 2020 a further paper was produced  
8 entitled "Increasing rates of self-isolation" by SPI-B,  
9 and in respect of that paper one of the conclusions  
10 there was that motivation to self-isolate was high in  
11 all groups, so across all demographics; is that right?

12 **A.** That's right, yeah.

13 **Q.** But the ability to self-isolate was the lowest among  
14 the poorest sections of the population?

15 **A.** That's right, yep.

16 **Q.** So what impact does that have on adherence rates?

17 **A.** Well, it meant that the people that had the lowest  
18 incomes were less able to self-isolate. Both because of  
19 financial problems, also because, for example, in their  
20 homes they often had less space to isolate between  
21 household members and stop infection spreading within  
22 the home as well.

23 **Q.** Is that problem one which you consider the UK solved at  
24 any point during the pandemic?

25 **A.** Not at all. And it's something that we pointed out over

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1 and over again right from April to the end of -- well,  
 2 before, before lockdown we pointed out that this would  
 3 be a problem, and we continued to point it out  
 4 throughout.

5 **Q.** Now, the final area I would like to ask you some  
 6 questions about, Professor, is that of government  
 7 messaging, and we've heard already that SPI-B set up  
 8 a separate communications subgroup, and we have also  
 9 heard a little bit this morning from Professor Rubin, as  
 10 you know, about the terms of reference and why it was  
 11 called SPI-B and not SPI-B&C, albeit some of that work  
 12 continued, in fact a significant proportion of SPI-B's  
 13 work continued in relation to communications; is that  
 14 fair?

15 **A.** That's right.

16 **Q.** Various documents were produced for the assistance of  
 17 the government. I'm not going to take you through those  
 18 because you've set them all out very helpfully within  
 19 your witness statement, and within that you also set out  
 20 that you provided offers of help to all government  
 21 departments, checklists of how to develop good  
 22 communications and sets of examples as to how slogans  
 23 could be developed; is that right?

24 **A.** Yes.

25 **Q.** With respect to those core principles in messaging --  
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1 those campaigns.

2 Were they broadly successful or were there real  
 3 problems?

4 **A.** I think there was a fundamental problem in the sense  
 5 that the strategy seemed to be based on issuing rules  
 6 and using fairly brief slogans, and the rules kept  
 7 changing, and the reasons why they were introduced and  
 8 why they were changed were not fully explained, and  
 9 people were not given enough education about  
 10 the pandemic and how we could all manage it best, to  
 11 really understand why things were introduced and why  
 12 they were changed.

13 So at the beginning of the pandemic, when we had to  
 14 lock down, a simple slogan was appropriate. But what  
 15 I and other SPI-B members, the communication people,  
 16 everyone, was advising was that in order to come out of  
 17 that, the general public needed a much more detailed  
 18 understanding of how infection spreads, how we all have  
 19 to work together to keep it under control, and how, if  
 20 we did that, it would reduce the need for the severe  
 21 lockdowns and all the harms that came with that.

22 So all the way through, people sort of had this idea  
 23 of these rules that were getting in the way of what they  
 24 wanted to do, whereas if -- and then we ended up with  
 25 lockdowns which really did seriously harm everybody's  
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1 and I'm summarising here, so please forgive me because  
 2 it will not do justice to the very broad set of papers  
 3 that were produced, but the core principles were  
 4 surrounding clarity, co-production, which you've already  
 5 spoken about, and indeed we've heard evidence from  
 6 others in relation to that, messages drawing on  
 7 protecting each other and standing together, societal  
 8 and -- messages in that respect, avoiding fear, disgust  
 9 or authoritarian messages, and then using rewards and  
 10 enablement as opposed to punishment and shame; is that  
 11 right?

12 **A.** Yes, I mean, there's quite a few other principles as  
 13 well.

14 **Q.** Indeed. No, I appreciate that, but these are just  
 15 drawing out, as I say, the sort of headline principles,  
 16 if I may.

17 Now, the government campaigns varied from very short  
 18 campaigns, "Hands, Face, Space" campaigns, all the way  
 19 through to the more dramatic imagery that we  
 20 subsequently saw at points in the pandemic, and I will  
 21 ask you in a moment about some of those individual  
 22 campaigns, but before we go to that, in a general sense  
 23 what are your views, in high summary form, of how and  
 24 whether -- sorry, whether government behavioural  
 25 strategies were communicated and implemented within  
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1 activities. And what we needed to do was to harness  
 2 the willingness that the public had, which we knew that  
 3 the public had, to try to keep the infection under  
 4 control, and to educate everybody better about how you  
 5 do that by carrying out activities more safely, so that  
 6 you don't have to lock down. And it's that sort of more  
 7 nuanced, complex, co-operative way of co-producing  
 8 the solutions to the problem of infection control that  
 9 we were advising, and the sort of top-down changing  
 10 slogans was just a fundamentally different way of  
 11 approaching it.

12 **Q.** Thank you.

13 Now, I just want to deal very briefly with your  
 14 involvement in terms of SPI-B's involvement with  
 15 messaging and communications and the difficulties and  
 16 challenges that were faced at points in the pandemic.

17 We've heard a little bit today about issues in April  
 18 and May of 2020, and to put it in context this was when  
 19 the government slogan had just changed from "Stay home"  
 20 to, effectively, "stay alert, control the virus and save  
 21 lives", "stay alert" being the primary aspect that I'm  
 22 interested in.

23 Now, several of the members of your committee  
 24 considered that was very poor messaging; is that right?

25 **A.** Yes.  
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1 Q. So that triggered an email chain following on from that  
 2 when news came that that was going to be the next  
 3 change.  
 4 Can I just call that up, please. It's INQ000197167,  
 5 and can I go to page 10 of that very briefly.  
 6 On page 10 what we see at the very top is an agenda,  
 7 just to put it into context, this is an agenda, we're  
 8 looking at paragraph 6 there, and it's a "Release of  
 9 documents and SPI-B support". And if we go then to  
 10 page 8, please, we see a message from -- I'm going to  
 11 summarise it if I may, as opposed to go through it all,  
 12 but we see a message from Professor Michie asking that  
 13 that item be brought higher up the agenda because  
 14 they've been -- she's been informed about this new  
 15 messaging. She continues to state:  
 16 "I sincerely hope that this is incorrect as it goes  
 17 against several principles we have rehearsed many times  
 18 in our advice to SAGE/Government ..."  
 19 It continues:  
 20 "If it turns out to be true, it would be helpful to  
 21 understand why we were not consulted given we have  
 22 a bespoke Communications group and have been raising  
 23 the problem of Government communications for several  
 24 weeks ..."  
 25 Then if I can go, please, to page 7, there is some  
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1 departments, including the Cabinet Office and Number 10;  
 2 is that right?  
 3 A. Mm-hm.  
 4 Q. You explain you don't think it's:  
 5 "... a particularly good slogan but [you] don't  
 6 think you can have a behaviourally specific slogan given  
 7 how many behaviours there are ..."  
 8 That's your more nuanced point, presumably.  
 9 "... the tweet ... [specifies] several of them ...  
 10 lots of advice we have given that hasn't/probably won't  
 11 be followed, not sure I would pick a fight on the  
 12 messaging myself."  
 13 Then if we can go to pages 1 to 2 -- sorry, page 2,  
 14 I think it's page 2 in the initial instance -- page 1,  
 15 my apologies, because it goes over the page -- and go  
 16 down to the bottom, we see an intervention from  
 17 an official in the Cabinet Office, and what she says  
 18 there is:  
 19 "I am happy to bring in some thoughts on Monday as  
 20 well. I tried to understand how much the next phase of  
 21 this kind of messaging can be more supported by SPI-B  
 22 (or at least make sure the decisions are made having  
 23 seen advice). The messages in this instance are kept so  
 24 elusive by a small group of mainly No10 advisers --  
 25 these are agencies that have won their political  
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1 support that takes place there from Professor Reicher,  
 2 Stephen Reicher.  
 3 Go to page 6, please, and we see a proposal from  
 4 a Professor Marteau, and her proposal is that  
 5 Professor Rubin writes to the chair of SAGE documenting  
 6 those concerns in the hope of intervention. But as we  
 7 go then to page 5, please, we see a link, and it's  
 8 a link to a tweet, and Professor Rubin saying "That ship  
 9 has sailed", the tweet is already out, the message has  
 10 already gone.  
 11 We then get a reaction on page 4 from  
 12 Professor Michie, which begins to say:  
 13 "Oh gosh, [Prime Minister] communication to the  
 14 nation by Twitter is now in the UK ..."  
 15 Professor Reicher:  
 16 "We have learnt so much from Donald Trump... But  
 17 seriously, I think it would still be helpful for James  
 18 to write such a message now and I think it is all the  
 19 more important we discuss [it] ..."  
 20 Then we get to your intervention at page 3, which is  
 21 really one looking for some calm heads to some extent,  
 22 because albeit we have a large -- we can see a large  
 23 number of emails on the screen, there are significant,  
 24 it's a very significant and wide email distribution  
 25 list, and it's gone to all sorts of different government  
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1 campaigns and are now supporting this one too. My team  
 2 was never consulted either and as soon as I heard the  
 3 message I flagged our concerns which mirror those of the  
 4 group -- only to be told it was too late now (and 'it  
 5 tested well' which often means a shut down of discussion  
 6 of any risks!)"  
 7 Then going over the page, please:  
 8 "... bottom line ... they won't change, they won't  
 9 change the message now. Flagging concern is probably  
 10 not wrong but I think it would be better to explore how  
 11 to work with them next time."  
 12 In short. She continues to say:  
 13 "... I am so sorry that despite being the  
 14 behavioural scientists inside the government  
 15 communications service we don't have a handle on this  
 16 either. It's so often partially political and in this  
 17 case I was also told they wanted to keep it deliberately  
 18 small so that there's not too many cooks which is also  
 19 a cultural issue."  
 20 That email chain perhaps explains some of  
 21 the challenges that indeed different groups involved in  
 22 communications were having at that time; is that a fair  
 23 assessment?  
 24 A. Absolutely, yes.  
 25 Q. Indeed, subsequently to that, if I can just move to  
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1 a different email chain at INQ000197166, and that's  
2 page 2, we see an email there from Professor Rubin in  
3 the middle, it's the one that I'm looking at, and  
4 references there a call from Patrick Vallance and that  
5 was about the email chain to express concern about SAGE  
6 getting drawn into a government operational move and  
7 losing its reputation as a result.

8 He also confirms that he has had "another call from  
9 a person in the know to say that Number 10 is concerned  
10 about [the] correspondence on this", and he says  
11 "presumably because we cc'd half of [government] into  
12 it".

13 So were these challenges that continued then  
14 throughout the course of the pandemic or did things  
15 improve?

16 **A.** Things didn't improve in terms of being consulted  
17 usually about messaging. I mean, we were consulted  
18 occasionally by Cabinet Office, so, for example, they  
19 did come to us to ask about how to message in  
20 the autumn. They phrased it as to prevent pandemic  
21 fatigue, but we managed to talk instead about sustaining  
22 adherence to the needed measures.

23 But on the whole, the communications tended to go  
24 ahead with very little input from SPI-B, even though we  
25 were very happy to advise. And as James mentioned, we

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1 feel that everybody was in it together, and that people  
2 understood why staying at home would benefit everybody.

3 **Q.** Just to pick up on that for a moment, and I understand  
4 what you're saying about clarity of messaging, this  
5 specific campaign has been criticised by organisations  
6 concerned with women and children facing domestic abuse  
7 or harms, hidden harms in the home. Do you see any  
8 difficulty with this and whether a more nuanced approach  
9 was also needed?

10 **A.** Well, this is exactly why my own methodology for  
11 developing messaging, I would always have co-produced it  
12 with a wide range of the kind -- of the people that it  
13 was aimed at.

14 Having said that, that might have happened, and  
15 I don't know who produced it, and maybe they did test it  
16 with people and found that it was actually not causing  
17 any kinds of concerns. And to be perfectly honest,  
18 I had my own reservations about the "Protect the NHS"  
19 part of the slogan, because we know that during lockdown  
20 and through the pandemic generally there was underuse of  
21 the NHS by people who -- whose health suffered or some  
22 people died because they weren't using the NHS  
23 sufficiently. Now, part of that may have been because  
24 of a realistic fear of infection, but part of it  
25 might -- I think part of it probably was that people

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1 actually did, in almost every paper we wrote, give some  
2 advice on how communications around a particular topic  
3 could be done well.

4 **Q.** I'm now going to ask you just to look at just a couple  
5 of specific messages, if I may, and images that went out  
6 with them.

7 You've already dealt with some of the issues that  
8 are concerning the stay alert progression, effectively,  
9 and we've seen them actually through the email chain  
10 that we've just worked through, so I'm not going to take  
11 you to that one, but can I take you, please, to the  
12 "Stay home, Stay safe, Save lives".

13 That's at INQ000309556.

14 It's an image here:

15 "You're not stuck at home, you're safe at home.

16 "Stay home, Protect the NHS, Save lives."

17 In short form, what is your view of that in terms of  
18 effective communication by the government?

19 **A.** That's interesting. That particular one I haven't seen  
20 before. And at the very start of the lockdown, if  
21 that's when this is from, we actually didn't feel there  
22 was a problem with that kind of simple messaging,  
23 because we felt that people needed that clarity, they  
24 needed to understand the urgency, and it actually did  
25 have the desired effect, which was to make everybody

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1 felt they shouldn't use the NHS because we're trying to  
2 protect it and so -- you know, I'm completely  
3 speculating but, you know, I would have --

4 **Q.** You don't need to --

5 **A.** -- tested that message to check that every aspect of it  
6 was working as it should with all different types of  
7 people.

8 **Q.** Thank you.

9 A completely different one now, the freedom day  
10 slogan. You explain in your witness statement that may  
11 have reduced adherence to social distancing earlier than  
12 would otherwise be the case, and certainly than was  
13 ideal, and certainly at a point when it was prior to  
14 people being vaccinated effectively; is that right?

15 **A.** That wasn't the freedom day slogan, it was the Eat Out  
16 to Help Out slogan. Freedom day came after vaccination  
17 so was less of a problem, but the Eat Out to Help Out  
18 slogan, yes, that came at a really crucially problematic  
19 time, because it was during the summer and that was  
20 when -- it was a really missed opportunity, that was  
21 when the infections were low and we could have all  
22 hopefully kept them low if everybody had understood how  
23 to resume activities safely, and had understood that  
24 only if we did that would we be able to avoid or  
25 minimise the need for further lockdowns.

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1 Instead, the Eat Out to Help Out scheme made people  
2 think that it was safe and that actually it was your  
3 duty to meet people and that wasn't going to lead to  
4 more infection spread. And we had warned back in April  
5 that, for example, if things were done for economic  
6 reasons, people would feel that they should be able to  
7 do them for social and psychological reasons, so that,  
8 you know, if to help out small businesses we could eat  
9 together, then to help out our family we should be able  
10 to eat with them.

11 So, you know --

12 **Q.** The --

13 **A.** -- to draw those wider conclusions.

14 **Q.** Then finally, if I can just ask you about this one, it's  
15 a slogan that came out in August of 2020 into September  
16 of 2020, and it's "Don't kill granny". It's a slogan  
17 that was repeated by the chief executive of various --  
18 of Preston city council, directors of public health, and  
19 indeed on 7 September Matt Hancock saying "Don't kill  
20 your gran by catching coronavirus and passing it on".  
21 Is that an appropriate form of messaging, from a SPI-B  
22 perspective?

23 **A.** Again, unless I'd actually pre-tested it with the target  
24 young people I couldn't say for sure but my instinct  
25 would be probably not because it is -- it is trying to

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1 grateful.

2 **THE WITNESS:** Thank you very much.

3 **(The witness withdrew)**

4 **LADY HALLETT:** Mr Keith, do you want me to take the break  
5 now, or ...

6 **MR KEITH:** As my Lady pleases.

7 **LADY HALLETT:** It's not quite time. It's up to you.

8 **MR KEITH:** Shall we crack on with the next witness?

9 **LADY HALLETT:** Okay.

10 **MR KEITH:** Professor Sir Peter Horby, please.

11 **PROFESSOR SIR PETER HORBY (affirmed)**

12 **Questions from LEAD COUNSEL TO THE INQUIRY**

13 **MR KEITH:** Good afternoon. Could you give the Inquiry your  
14 full name, please.

15 **A.** Good afternoon. My full name is Peter William Horby.

16 **Q.** Professor, thank you for the provision of your witness  
17 statement, and for attending today to give evidence.  
18 I'm sorry you have been kept waiting a little.

19 You are a professor of emerging infectious diseases  
20 and global health at the Centre for Tropical Medicine  
21 and Global Health at the University of Oxford; is that  
22 correct?

23 **A.** It was correct. I'm now the director of the Pandemic  
24 Sciences Institute, which is a slightly different  
25 organisational structure within the university.

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1 draw on fear and shame, and actually a lot of  
2 the reasons why infections were being transmitted from  
3 younger people to vulnerable older people was not due to  
4 people not caring if their granny died or, you know,  
5 being reckless, it was due to people not understanding  
6 the way that network, social networks interlock, so they  
7 didn't realise that if they, for example, hugged  
8 a friend who was their age, that friend might  
9 nevertheless be living with somebody who was vulnerable,  
10 and so -- I actually saw some much, much better  
11 messaging on the same topic during the pandemic where it  
12 showed sort of three young people meeting, and it showed  
13 the hidden links that each of them had to vulnerable  
14 people, so that even though it looked like three people  
15 that were not vulnerable meeting, actually they were all  
16 connected to vulnerable people. That was a much better  
17 one. And that kind of messaging, it doesn't blame  
18 people, it doesn't suggest they're recklessly  
19 endangering people, it educates them about risks that  
20 they didn't even understand that they needed to manage.

21 **MS CECIL:** Thank you, Professor Yardley.

22 My Lady, those are all the questions that I have.

23 Does your Ladyship have any questions?

24 **LADY HALLETT:** No, I have no more questions. Thank you very  
25 much indeed for your help, Professor Yardley, very

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1 **Q.** You are still a professor of emerging infectious  
2 diseases and global health --

3 **A.** Correct, yes.

4 **Q.** -- and you specialise in emerging and epidemic  
5 infectious diseases?

6 **A.** I do.

7 **Q.** On account of one of the lessons and the pieces of  
8 learning that you include in your statement, I want to  
9 ask you about some of the other no less important roles  
10 that you have. Are you also the executive director of  
11 ISARIC, the International Severe Acute Respiratory and  
12 emerging Infection Consortium? Are you also or were you  
13 also the co-chief investigator of the RECOVERY Trial,  
14 which was -- is the randomised evaluation of Covid-19  
15 therapy trial?

16 **A.** Yes, I am.

17 **Q.** You were also from 2018, significantly, chair of the  
18 NERVTAG committee, and I think that as chair of  
19 the NERVTAG committee you attended 75 meetings of  
20 NERVTAG, all the meetings between January 2020 and  
21 June 2021?

22 **A.** Well, NERVTAG nerve convened 75 meetings. I'm not sure  
23 I was in attendance at all of them, it would have been  
24 the vast majority.

25 **Q.** We'll excuse you those last few that you may not have

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1 attended, Professor.  
 2 As chair of NERVTAG, did you also attend SAGE and,  
 3 in that role, your statement shows that you attended  
 4 89 of 105 SAGE Covid-19 meetings?  
 5 **A.** That's correct.  
 6 **Q.** I want to commence your examination, please, about  
 7 asking you some questions about the Centre for Tropical  
 8 Medicine and Global Health at Oxford. It's part of the  
 9 Nuffield department of medicine, is it not?  
 10 **A.** That's correct.  
 11 **Q.** And because you are a specialist in emerging infectious  
 12 diseases, that comprises research and work in relation,  
 13 in particular, to the emergence of diseases abroad?  
 14 **A.** That's correct.  
 15 **Q.** The Centre for Tropical Medicine and Global Health has  
 16 a very extensive research portfolio and it employs, does  
 17 it not, a very significant number of principal  
 18 investigators and staff both in the United Kingdom and  
 19 abroad?  
 20 **A.** Yes.  
 21 **Q.** One of the points you make in your statement is that  
 22 a major lesson that is required to be drawn from  
 23 the pandemic is that there is an ongoing obligation to  
 24 combine academic excellence, scientific and medical  
 25 excellence, with public health and commercial

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1 an epidemic infection that we knew was coming.  
 2 **Q.** I'm going to ask you, Professor, just to go a little  
 3 more slowly, please, for the benefit of our  
 4 stenographer.  
 5 So it was set up after the 2009 influenza pandemic,  
 6 and on the commencement of the Covid-19 pandemic, was it  
 7 apparent to you that the protocols and the procedures  
 8 which ISARIC had developed over time would be required  
 9 to be activated to assist the United Kingdom Government  
 10 to respond to this pandemic?  
 11 **A.** Yes. So we had, with the World Health Organisation,  
 12 written a clinical characterisation protocol, one of  
 13 which was for acute respiratory infections, which was  
 14 designed for exactly this scenario, so --  
 15 **Q.** What is -- I'm sorry. What is a clinical  
 16 characterisation protocol?  
 17 **A.** So it is a study that has ethical approval to get a good  
 18 description from patients with a clinical syndrome,  
 19 their demographics, their existing comorbidities,  
 20 concurrent illnesses, their clinical presentation and  
 21 the natural history of disease, because all of that  
 22 information is critical both for clinical care but also  
 23 for calibration of your public health response.  
 24 **Q.** So putting it in lay terms, and you'll forgive me, were  
 25 you making the point, in fact, to the Chief Medical

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1 capabilities, because that will deliver remarkable  
 2 benefits at great speed?  
 3 **A.** Yes, that's correct.  
 4 **Q.** Was the centre, and the University of Oxford more  
 5 widely, concerned, as a result of that partnership  
 6 during the pandemic, with, of course, as is very well  
 7 known, the development of the Oxford-AstraZeneca  
 8 vaccine, the RECOVERY Trial, which you've mentioned and  
 9 which I'll come back to in a moment, the ISARIC  
 10 database, which is a worldwide clinical dataset -- how  
 11 many patient records does it contain now, Professor?  
 12 **A.** It now contains around a million patient records, with  
 13 about half of them from low, middle-income countries.  
 14 **Q.** Was Oxford also concerned with the development of  
 15 the NHS contact tracing app?  
 16 **A.** Yes.  
 17 **Q.** Just for a moment focusing on each of those particular  
 18 achievements, ISARIC, the International Severe Acute  
 19 Respiratory and emerging Infection Consortium, is it in  
 20 essence a global network of clinical research networks,  
 21 so providing a massive amount of data and information to  
 22 enable countries to respond to diseases? Is that what  
 23 it is about?  
 24 **A.** Yes, it was set up after the 2009 influenza pandemic  
 25 because of the failure to do good clinical research on

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1 Officer, that the government should activate this system  
 2 of acquiring data about clinical features of persons  
 3 suffering from the disease in order to better respond to  
 4 the crisis and to inform the government's response?  
 5 **A.** Yes, absolutely.  
 6 **Q.** All right.  
 7 Could we have INQ000221945, please.  
 8 You emailed the Chief Medical Officer on 17 January  
 9 asking him, in essence, to activate this protocol so  
 10 that information could start to be gathered on what it  
 11 amounted to, what the pandemic amounted to, what the  
 12 disease outbreak amounted to.  
 13 At the bottom of the page, in your email, in fact,  
 14 to the then Chief Medical Officer, Professor Sir  
 15 Chris Whitty, and also the Deputy Chief Medical Officer,  
 16 Professor Sir Jonathan Van-Tam, you say:  
 17 "... we need two things to happen:  
 18 "1. 2019 [novel coronavirus] is designated as  
 19 a priority pathogen of public health interest --  
 20 I believe this is a [Public Health England]  
 21 designation."  
 22 What is a designation as a "priority pathogen of  
 23 public health interest"?  
 24 **A.** Well, in this context, the National Institute for Health  
 25 Research, which is a national NHS-affiliated research

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- 1 network, has a portfolio of studies that can be  
 2 activated in a public health emergency but only if  
 3 the pathogen is designated as a pathogen of public  
 4 health interest. So we needed that to allow us to  
 5 activate the protocol.
- 6 **Q.** The Inquiry is aware, as is the public, that there came  
 7 a time in fact when the coronavirus was designated  
 8 somewhat differently, with a different classification,  
 9 known as a high-consequence infectious disease, it was  
 10 so classified on 16 January. Can you assist the Inquiry  
 11 as to whether that is the same designation of which you  
 12 are speaking there or something different, and if it's  
 13 something different why was Covid classified on  
 14 16 January as a high-consequence infectious disease?
- 15 **A.** So they're different classifications. This  
 16 classification in this email is around activation of  
 17 a clinical protocol. The other designation is around  
 18 how the pathogen and patients who are infected with  
 19 the pathogen are handled in terms of infection control  
 20 and laboratory biosafety.
- 21 **Q.** So is that, in essence, a designation directed to the --  
 22 well, directed by the government at the government to  
 23 take particular precautions when dealing with such  
 24 a disease?
- 25 **A.** Yes, and it's the Advisory Committee on Dangerous  
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- 1 **A.** Yes, absolutely, it would have been counterproductive,  
 2 I think, to have maintained that classification.
- 3 **Q.** In fact, does Covid have a mortality rate that is  
 4 somewhat lower than the sorts of diseases which often  
 5 are classified as HCID, such as Ebola, plague, SARS,  
 6 MERS and so on?
- 7 **A.** Yes, it does.
- 8 **Q.** And by the middle of March, had a specific diagnostic  
 9 test been developed to test for Covid?
- 10 **A.** I'm not exactly sure of the timelines of when  
 11 the diagnostics -- I mean, the sort of advanced  
 12 reference laboratory diagnostics were available, but  
 13 the sort of point of care lateral flow devices that  
 14 we're all used to using at home were not yet available.
- 15 **Q.** On the topic of the understanding of, in the early days,  
 16 the nature of the virus, one of the core participants  
 17 has asked, through Counsel to the Inquiry, to what  
 18 extent was NERVTAG in January aware of the nosocomial  
 19 risk, the risk that this virus would be readily  
 20 transmitted in hospitals and other healthcare settings?  
 21 Was that a concern that presented itself towards  
 22 the beginning of this chronology or was that something  
 23 about which learning was developed later?
- 24 **A.** The concern was there right from the start, and I think,  
 25 if my memory serves me right, there was an early email  
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- 1 Pathogens that advises the government on the designation  
 2 of whether it should be a -- designated as  
 3 a high-consequence infectious disease.
- 4 **Q.** Once the outbreak had crashed upon UK shores in  
 5 mid-March, Covid was declassified was an HCID, in fact  
 6 it was so declassified on 19 March. Why, very shortly,  
 7 was it deemed appropriate to declassify the virus as  
 8 an HCID at that stage?
- 9 **A.** So the purpose of the classification is to mitigate  
 10 the risk of transmission, either from patients to other  
 11 patients, healthcare workers or visitors to hospitals,  
 12 and to mitigate the risk of infection in a laboratory,  
 13 of laboratory workers or escape from the laboratory.  
 14 Now, that only makes sense as a measure if there's  
 15 not already widespread transmission of the virus. Once  
 16 you have the virus in the community, then those measures  
 17 make a lot less sense. In fact, they're  
 18 counterproductive, because they inhibit your ability to  
 19 manage patients and to do laboratory diagnostics,  
 20 for example.
- 21 **Q.** A considerable amount of public concern was expressed  
 22 about the de-designation of Covid as an HCID. Are you  
 23 saying that there were good clinical practical reasons  
 24 why the designation served no purpose after  
 25 the epidemic, the pandemic had erupted?  
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- 1 from the Deputy Chief Medical Officer, Jonathan Van-Tam,  
 2 saying that hospital worker infection would be one of  
 3 the red flags, that this was going to be a troublesome  
 4 virus. So it's always -- and for me personally,  
 5 I remember a conversation with somebody saying, "This is  
 6 like flu", sort of, you know, later on in the pandemic,  
 7 and saying, "It's not, we're seeing healthcare workers  
 8 dying". That really is a red flag. So it was very much  
 9 at the front of our minds that this is one of the flags  
 10 that we should be looking for.
- 11 **Q.** Just two points on that. You were in a good position,  
 12 on account of your many years of experience with  
 13 emerging infectious diseases, particularly abroad, to  
 14 understand that coronavirus was very much not  
 15 an influenza?
- 16 **A.** It depends on the coronavirus. We have --
- 17 **Q.** Of course.
- 18 **A.** -- endemic coronaviruses that cause the common cold and  
 19 then, at the other end of the spectrum, we had the SARS  
 20 coronavirus with quite a high case fatality rate, so  
 21 there is a huge spectrum, and we didn't yet know where  
 22 on that spectrum we would land.
- 23 **Q.** I should have said this coronavirus. It became readily  
 24 apparent to you that this coronavirus, SARS-CoV-2, had  
 25 very distinct differences to the usual run of influenza?  
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1 **A.** Yes. I had personal professional contacts in China who  
 2 were in Wuhan who we were in contact with, or I was in  
 3 contact with, from 2 January, and it was clear fairly  
 4 early that they were seeing severely ill cases, but one  
 5 had to be cautious about assuming from that that it's  
 6 very transmissible or that the very severe cases are  
 7 common amongst those infected.

8 So we had a suspicion that this could be a serious  
 9 outbreak but not yet confirmation of that.

10 **Q.** At NERVTAG's second meeting, which was in fact on  
 11 21 January, there was debate about the nature or rather  
 12 the extent of the human-to-human transmission and  
 13 a reference was made to the fact that the virus then in  
 14 Wuhan or in China had been transmitted between a number  
 15 of healthcare workers who had been in a neurosurgical  
 16 unit where they had, regrettably, not worn PPE.

17 What impact on the thinking of NERVTAG did that  
 18 piece of information have, that the virus then emerging  
 19 in China had been transmitted, human to human  
 20 apparently, amongst healthcare workers?

21 **A.** So it started to narrow down where on that spectrum of  
 22 risk, I guess, we were. It did not yet indicate this  
 23 could be a pandemic, because, for example, another  
 24 coronavirus, Middle East respiratory coronavirus, MERS  
 25 coronavirus, that is transmitted primarily from camels

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1 estimates were that there was a case fatality rate of  
 2 about 10%, up to 10%.

3 In the end that turned out to be wrong by 500 to  
 4 1000-fold, it was no more serious than a seasonal  
 5 influenza. So you can get it catastrophically wrong  
 6 unless you have really good comprehensive data, not just  
 7 about the severe cases but about the whole extent of  
 8 illness and infection in the community.

9 **Q.** You have referred to a particular piece of data, case  
 10 fatality rate. Is it the position that, amongst  
 11 the most important pieces of data are the infection  
 12 fatality rate (what proportion of those persons who are  
 13 infected will die), the case fatality rate (what  
 14 proportion of confirmed cases will die) and also  
 15 hospitalisation rate (what proportion of the infected  
 16 population will require hospitalisation)?

17 **A.** Yes.

18 **Q.** Those are absolutely at the heart of a proper  
 19 understanding of what the virus might do?

20 **A.** Yes, as well as the transmissibility, what we now know  
 21 as the R number.

22 **Q.** They're all linked, though, of course?

23 **A.** Yes.

24 **Q.** You need to know the transmissibility, the reproduction  
 25 number, you need to know how it's going to spread,

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1 to humans, does cause quite significant hospital  
 2 outbreaks, with infection of other patients and of staff  
 3 and deaths in the vulnerable, but that has not -- has  
 4 not and had not at that time become a readily  
 5 transmissible virus outside of that setting. So we  
 6 could have remained either in that situation, where it  
 7 was a MERS-like virus, or it could have been more like  
 8 a SARS 2003 virus, which was transmitting a little bit  
 9 outside of the hospital, or it could have been more like  
 10 an influenza virus where it was readily transmissible in  
 11 the community, and we didn't know -- so we'd narrowed it  
 12 a bit but we didn't know where we were still.

13 **Q.** Does that highlight the vital importance of data? So  
 14 for any government seeking to respond to the possibility  
 15 of an epidemic, what is vital is to understand  
 16 the nature of the virus, its transmissibility, its  
 17 features, what it is capable of, in order to be able to  
 18 sensibly start making decisions?

19 **A.** Yes, absolutely, everything is dependent on that. And  
 20 if I may --

21 **Q.** Yes, please.

22 **A.** -- a good example is the H1N1 influenza pandemic which  
 23 started in Brazil, and the very early data were that it  
 24 was very severe because the initial cases had been  
 25 detected in intensive care, and some of the initial

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1 likely to spread, in order to be able to see the extent  
 2 of the infection and the risk of death or  
 3 hospitalisation?

4 **A.** Yes.

5 **Q.** All right.

6 **LADY HALLETT:** Pausing there?

7 **MR KEITH:** Yes.

8 **LADY HALLETT:** We will now break.

9 **MR KEITH:** Thank you, my Lady.

10 **LADY HALLETT:** 3.35, please.

11 **(3.18 pm)**

12 **(A short break)**

13 **(3.35 pm)**

14 **MR KEITH:** Professor, before the break, you were telling  
 15 the Inquiry about the ISARIC system, the ISARIC  
 16 procedure. Was one of or maybe the first -- one of the  
 17 first clinical descriptions of Covid-19 cases prepared  
 18 by an ISARIC member, a country or a medical institute  
 19 that is a member of ISARIC, and distributed through  
 20 the ISARIC process? So was ISARIC right in there at  
 21 the beginning with providing information about some of  
 22 the clinical features of Covid?

23 **A.** Yes. So my first conversation on 2 January was with  
 24 an ISARIC colleague in China, who I contacted, and it  
 25 transpired he was actually in Wuhan, leading the

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1 clinical research response. And we provided support to  
 2 him. So we provided him with the ISARIC tools, the case  
 3 record forms, the sort of questionnaires that are filled  
 4 in, and that format was used for the very first clinical  
 5 description of what became known as Covid-19, which was,  
 6 I think, published towards the end of January.

7 **Q.** It's obvious, isn't it, that, as professionals in this  
 8 field, you were constantly looking abroad to see how  
 9 this pandemic was developing, to try to see what  
 10 information you could get, what data you could assemble?  
 11 So is there any basis for the suggestion in some  
 12 quarters that the scientists and the professionals  
 13 involved in the management of this pandemic in  
 14 the United Kingdom were not completely aware of what was  
 15 happening abroad and what information and what data  
 16 could be gleaned from the emergence of the epidemic  
 17 elsewhere?

18 **A.** We were certainly extremely active, so from 2 January  
 19 I was on the phone almost every night to colleagues in  
 20 China and Asia, I was also on the phone to colleagues in  
 21 the World Health Organisation in Europe and elsewhere on  
 22 an almost daily basis, to try and get as good  
 23 information as we could get.

24 Now, often it's very partial, and we understood  
 25 that, and I think it's important that we had that

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1 "The increasing number of cases and widening  
 2 geographical spread of the disease raise grave concerns  
 3 about the future trajectory of the outbreak, especially  
 4 with the Chinese Lunar New Year quickly approaching."

5 On account of the millions of trips that would be  
 6 made thereafter.

7 If we go to the last page, 5 of 5, did you say this  
 8 in the last paragraph:

9 "We have to be aware of the challenge and concerns  
 10 brought by 2019 [novel coronavirus] to our community.  
 11 Every effort should be given to understand and control  
 12 the disease, and the time to act is now."

13 What did you mean by the appeal for the disease to  
 14 be controlled?

15 **A.** So, in affected countries, to take strong measures to  
 16 try to limit transmission, so that, ideally, we could  
 17 contain and eliminate the virus and prevent it causing  
 18 either bigger, country-wide, regional epidemics or  
 19 a pandemic.

20 **Q.** Does that apply equally, therefore, that approach, to  
 21 the United Kingdom?

22 **A.** It applies everywhere.

23 **Q.** To any country in which the virus has been able to gain  
 24 a foothold?

25 **A.** Yes.

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1 appreciation, that we shouldn't over-interpret the data.  
 2 But that was -- I mean, my very highest first priority  
 3 was to get a really good handle on what we're dealing  
 4 with.

5 **Q.** That's not to say that there weren't very real  
 6 difficulties in obtaining accurate, up-to-date  
 7 information from, in particular, China?

8 **A.** Yes, very, very challenging.

9 **Q.** You've mentioned the publication in *The Lancet*, could we  
 10 have INQ000222003. Just pause there.

11 **(Pause)**

12 If we could have page 2 of 5, please. Is this  
 13 the front page, the first page, in the bottom half, of  
 14 an article published in *The Lancet*, I think on  
 15 24 January, talking about how Wuhan, Hubei Province,  
 16 China, had become the centre of an outbreak of pneumonia  
 17 of unknown cause?

18 **A.** Yes, it is. It's one of a pair of papers. The first  
 19 paper is the clinical description that used some of  
 20 the ISARIC tools, and this is an accompanying commentary  
 21 of which I'm a co-author.

22 **Q.** If we could scroll back out and then go to page 4 of 5,  
 23 please, you can see that -- well, you'll be reminded,  
 24 Professor, that your commentary talks of, in the  
 25 left-hand column, around about halfway down, how:

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1 **Q.** That's ISARIC.

2 You've referred to the RECOVERY Trial, I want to ask  
 3 you some questions, please, about that. Was the  
 4 RECOVERY Trial a sophisticated system or trial by which  
 5 treatments for the potential benefit of persons  
 6 suffering from coronavirus or Covid-19 could be  
 7 evaluated?

8 **A.** It was. It is. It's still running now.

9 **Q.** It the RECOVERY Trial enrol its first patient on  
 10 19 March 2020, so relatively early on?

11 **A.** Yes.

12 **Q.** Is it led by a number of institutes or is it purely  
 13 a Nuffield Department of Medicine --

14 **A.** It's an Oxford University study that's led by myself but  
 15 also my co-investigator, Martin Landray, who is from  
 16 the Department of Population Health.

17 **Q.** I want to ask you about the RECOVERY Trial because was  
 18 it the RECOVERY Trial that led to the breakthrough  
 19 finding that there was a drug called dexamethasone  
 20 which, in the passage of time, in the fullness of time,  
 21 demonstrated itself capable of saving the lives of  
 22 hundreds of thousands of people?

23 **A.** Yes, that's correct. We found, I guess, the first  
 24 life-saving treatment that actually, luckily, was a drug  
 25 that is available worldwide.

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- 1 **Q.** It's a drug that is used, is it not, for patients who  
2 are seriously ill? It's not used on people who have  
3 mild symptoms, it's used on people who are on  
4 ventilators or who require oxygen, because it helps  
5 suppress the immune system and aids recovery?
- 6 **A.** Yes, that's right. And it has a very significant effect  
7 on reducing the risk of death.
- 8 **Q.** All right, and did the RECOVERY Trial also expose how  
9 some other very different drugs which were paraded in  
10 the press from time to time and by certain notable  
11 global figures had very little by way of beneficial  
12 impact or medicinal purpose whatsoever?
- 13 **A.** Yes, our first result was that hydroxychloroquine is not  
14 an effective treatment for hospitalised patients, and  
15 our second result was the benefits of dexamethasone.
- 16 **Q.** Hydroxychloroquine was notoriously promoted by the then  
17 President Trump?
- 18 **A.** It was.
- 19 **Q.** All right.  
20 That's RECOVERY. Then can we come, please, to SAGE,  
21 of which you were a member by virtue of being chair of  
22 NERVTAG.  
23 NERVTAG is a scientific advisory committee that  
24 reports, nominally, to the Department of Health and  
25 Social Care; is that right?

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- 1 **A.** Yes.
- 2 **Q.** -- I think.
- 3 **A.** It is.
- 4 **Q.** By the time Covid had come to the United Kingdom, by  
5 definition it was perhaps no longer a new and emerging  
6 viral threat; it had arrived?
- 7 **A.** Yes.
- 8 **Q.** Why was it necessary to keep NERVTAG going and to keep  
9 NERVTAG running at such a hot rate throughout  
10 the currency of the entire pandemic?
- 11 **A.** Well, I think there were advantages to doing that, and  
12 I think it was the right decision.  
13 One is it's a multidisciplinary committee, so it was  
14 set up and it has, you know, clinical, virological,  
15 sociobehavioural, modelling expertise, so it had,  
16 you know, quite a broad membership. Also it was  
17 a well established committee, so we were used to working  
18 with each other, and so it meant that we could operate  
19 effectively quickly, and much of the detailed technical  
20 work that SAGE would be looking for was within the scope  
21 of NERVTAG's remit.  
22 So we had both the background and the expertise to  
23 answer those commissions.
- 24 **Q.** Were those commissions always clearly identified or were  
25 there difficulties occasionally which required NERVTAG

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- 1 **A.** Yes, that's correct.
- 2 **Q.** Why is it only nominally that it reported to the DHSC?  
3 Was that because in time, practically, it fed its  
4 learning and its reports to a considerable extent into  
5 SAGE?
- 6 **A.** Yes, so it's a statutory committee in that it's  
7 a standing committee that is sort of owned by  
8 the Department of Health and Social Care. During  
9 the pandemic it was quite early on agreed that NERVTAG  
10 should continue to operate, but it would report, almost  
11 have dual reporting, it would have responsibility to  
12 the DHSC, but also to SAGE.
- 13 **Q.** From whom or from what did NERVTAG receive its  
14 commission?
- 15 **A.** From SAGE. Well, prior to the pandemic, just from  
16 Department of Health and Social Care. Once the pandemic  
17 or the outbreak had begun and SAGE had been stood up, we  
18 took commissions from SAGE, from Department of Health  
19 and Social Care, and often from other sources, like  
20 Government Office for Science or Public Health England,  
21 but we did try to limit that and ask for it to be -- all  
22 of those commissions to be screened through either SAGE  
23 or DHSC.
- 24 **Q.** NERVTAG is the New and Emerging Respiratory Virus  
25 Threats Advisory Group --

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- 1 to push back and say, bluntly, "This question is too  
2 broad or too specific or we don't understand what it  
3 means"?
- 4 **A.** Yes, definitely. And one can understand why that might  
5 happen in the heat of what was happening, but I think  
6 there were categories where it was too broad,  
7 you know -- we were asked about, you know, what's  
8 effective at preventing transmission, and that is  
9 a very, very broad question, it's almost a PhD thesis,  
10 or were not really scientific, technical questions, they  
11 were straying into what is sort of standard knowledge  
12 and standard operational knowledge. For example, some  
13 of the questions around protective equipment and  
14 disinfection is not really a sort of difficult  
15 scientific question.
- 16 **Q.** Did the governance structures around NERVTAG work well,  
17 so your chairing of the group, your relations with  
18 government, such as they were, and your relationship  
19 with SAGE?
- 20 **A.** Yes, I think they worked well. It was very hard work,  
21 and I think we would have benefited from a better  
22 resourced secretariat, and probably some additional  
23 scientific -- junior scientific support to help me  
24 prepare papers, et cetera. But the relationships worked  
25 well.

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1 Q. By attending at SAGE yourself as the chair of NERVTAG,  
2 presumably you could see how the work and the learning  
3 that NERVTAG had provided was then discussed, debated  
4 and resolved in SAGE?

5 A. Yes.

6 Q. Where did the information or the conclusions go  
7 thereafter?

8 A. Thereafter, they went to government, and I don't know  
9 much more than that. You know, it was very clear that  
10 the Chief Scientific Adviser and the Chief Medical  
11 Officer were often walking straight out of SAGE meetings  
12 into meetings with ministers, the Prime Minister,  
13 Cabinet Office, et cetera, and relaying the  
14 SAGE position or the SAGE advice to them. But we didn't  
15 have -- I personally did not have much visibility of  
16 what happened outside of SAGE.

17 Q. And to be absolutely clear about this, you never had any  
18 concerns about the ability, the scientific and  
19 professional, intellectual capacity of the CMO and  
20 the GCSA to faithfully represent the views of SAGE to  
21 government?

22 A. I think they both are incredibly talented, they're great  
23 communicators, and I had absolute confidence in them.

24 Q. On SAGE itself, do you express in your statement --  
25 well, do you identify a number of areas in which you

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1 generally understood the advice that they were  
2 receiving, they may not have been provided with  
3 the answers that they were seeking, in part on account  
4 of this divide, this division of understanding as to  
5 what SAGE was there to do?

6 A. Yes. Perhaps sometimes they weren't even sure what  
7 answers they were after.

8 I think it would have been beneficial to have a much  
9 closer dialogue between the policymakers and the  
10 scientists, so we could understand the thinking of  
11 the policymakers and what their direction of travel and  
12 what their goals were, so that we could craft the most  
13 useful science advice.

14 Q. Do you think that the division between the provision of  
15 scientific advice and the making of policy was  
16 understood by the public?

17 A. Largely -- well, it's hard to say, but I think that  
18 certainly there was some misunderstandings about what  
19 the scientists were doing and what the policymakers were  
20 doing and where the division lay.

21 **LADY HALLETT:** Would you need the closer dialogue between  
22 policymakers and scientists if the CMO and the Chief  
23 Scientific Adviser were able to relay to you  
24 the government's objectives? Surely they would be  
25 the source, under the system you've described?

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1 began to have concerns about the way in which SAGE was  
2 operating, in particular in relation to its role as  
3 a provider of advice to government, and this interface  
4 between the provision of advice and operational or  
5 proactive measures that were required to be identified?

6 A. I'm not sure I quite understand your question, Mr Keith.

7 Q. Yes. Well, I'll put it another way. In your statement  
8 at paragraph 145, you identify that there may have been  
9 a problem with the ability of SAGE to provide advice  
10 because it didn't know what the nature of  
11 the government's objectives were, what its strategy was,  
12 and therefore it was unable to point its advice or to  
13 calibrate its advice to the best possible effect?

14 A. Yes, that's correct.

15 I think it's very difficult to provide science  
16 advice in a vacuum. It's a bit like being asked to,  
17 you know, provide a map but you've not been told  
18 the destination that you're heading to. So sometimes  
19 the scientific questions were obvious and the advice to  
20 give may be complex but it was straightforward. But  
21 other times, without understanding what it was that  
22 the objective, the policy objective, or the goal was, it  
23 became very difficult to give, I think, the most helpful  
24 advice.

25 Q. Did you get the impression that, whilst policymakers

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1 A. I think it would have -- it would have helped if perhaps  
2 the CSA and the CMO had a clearer steer from government  
3 as to what the policy objectives were in the short,  
4 medium and long term. But also, on occasions, I think  
5 it would have also helped to have had a roundtable  
6 dialogue --

7 **LADY HALLETT:** Have everybody round the table?

8 A. Yeah -- around specific really important questions so  
9 that we could get a really -- a much clearer idea of  
10 the policy objectives, and maybe for the scientists to  
11 challenge the policymakers to think more clearly about  
12 what their policy objectives are, so that we could do  
13 the science advice as best we could.

14 **MR KEITH:** "Following the science" was that well known  
15 mantra; may we presume that you weren't a devotee to  
16 that phrase?

17 A. It certainly was something that was unpopular amongst  
18 all of the scientists I spoke to, for two main reasons.  
19 One, science is rarely black and white, there are  
20 different interpretations of science and there are  
21 different degrees of interpretation, and you will see  
22 that throughout the Inquiry, no doubt. Secondly, it  
23 assumes that there is a direct relationship between  
24 a piece of science advice and a policy decision, where  
25 that's not the case. There are many other factors

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1 influencing the policy decisions, around ethics,  
 2 economics, politics, which are outside of the science  
 3 advice.

4 **Q.** Did you ever feel that the scientific advice provided by  
 5 NERVTAG and SAGE was cherry-picked or, to use a more  
 6 pejorative expression, manipulated by policymakers, that  
 7 they took from you what they wished and then claimed  
 8 that they were following you?

9 **A.** I never had -- I didn't personally have a very strong  
 10 feeling around that. I did feel that there were  
 11 decisions made that did not necessarily fully align with  
 12 the science advice, and for me one of the issues was  
 13 there was not a feedback cycle, so where the policy  
 14 decisions did not match the science position we didn't  
 15 really get feedback as to why that policy decision was  
 16 made, which I think would have helped us feel more  
 17 comfortable about what was happening.

18 **Q.** In your statement, you say that it would have been  
 19 helpful to SAGE to have a greater expertise on it from  
 20 frontline public health practitioners. Why do you say  
 21 that?

22 **A.** Whilst there were people in the room with public health  
 23 expertise -- I mean, I myself, my medical speciality is  
 24 public health, but I'm not a practising frontline public  
 25 health worker, and also the deputy chief medical

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1 perspective and lessons that might be learned, and  
 2 you've referred already to your own direct contacts  
 3 with, no doubt, a multitude of similar experts abroad.

4 Could we have INQ000106108, please. This is  
 5 a document, it's minutes, in fact, of a SAGE meeting on  
 6 11 February.

7 If we just go to the second page, please, points 1  
 8 and 7, just to get our bearings, this is around the time  
 9 where there was a debate about what the reasonable  
 10 worst-case scenario approach should be, and how in  
 11 general terms the government should continue to plan,  
 12 and you'll recall, Professor, the reference to using  
 13 influenza pandemic assumptions.

14 Further down the page, at point 7, my Lady will  
 15 recall this from another witness:

16 "It is not possible for the UK to accelerate  
 17 diagnostic capability to include Covid-19 alongside  
 18 regular flu testing ..."

19 Then on page 3, please, you can see two-thirds of  
 20 the way down the page:

21 "Action: FCO and DfID to work with SPI-M secretariat  
 22 to finalise the detailed breakdown of data required from  
 23 Chinese and other national authorities, and the routes  
 24 through which this data should be shared."

25 So is this a good example of the constant steps that

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1 officers, you know, have public health training as well.  
 2 But that's different from being at the frontline running  
 3 a public health department in a local council or on the  
 4 ground. And I think one of the messages, I think from  
 5 my evidence, is that, you know, science needs to be in  
 6 context, it needs to be in the policy context but it  
 7 also needs to be in the operational context, and so  
 8 I think having those kind of people giving an input  
 9 would have helped us to refine the advice we were  
 10 giving.

11 **Q.** Was SAGE and NERVTAG, were they both too scientific, if  
 12 you like, or too dominated by biomedics as opposed to  
 13 pandemic management experts?

14 **A.** That is one of the dilemmas. As a science advisory  
 15 committee, you want a table full of eminent scientists  
 16 who people will recognise as leading experts in that  
 17 area of science, but if that is not contextualised then  
 18 you can get science that's not meaningful or helpful or  
 19 practical. So at some point there has to be that  
 20 sort of ground truthing of it, and perhaps that's at  
 21 the committee level, NERVTAG or SAGE level, but perhaps  
 22 it's in a different forum, but it does have to happen  
 23 somewhere.

24 **Q.** Another point you make in your statement is that SAGE  
 25 spent considerable time reviewing international data

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1 SAGE took to try to accumulate as much information as it  
 2 could about the data which you've described as being of  
 3 such great importance?

4 **A.** Yes. And you can see there that the request was to be  
 5 issued to UK heads of mission, so really using  
 6 the Foreign Office network as a way to gather  
 7 intelligence to help the UK response.

8 **Q.** In broad terms, did SAGE and NERVTAG have difficulties  
 9 in or encounter difficulties in being asked repeatedly  
 10 to give advice in broadly the same areas? Were you  
 11 forced to return to issues which you believed that you  
 12 had already resolved, or asked questions or asked to  
 13 address issues which were outside the strict remit of  
 14 either committee?

15 **A.** On the second issue, yes. I think particularly,  
 16 you know, my experience with NERVTAG, we were asked  
 17 sort of technical operational questions that weren't  
 18 really requiring, you know, heavy scientific inputs.

19 On the first question, we were asked to revisit  
 20 items, but I think often quite sensibly. And we come to  
 21 this later, but the use of face coverings is one where  
 22 it came back to NERVTAG, I think for good reasons.

23 **Q.** Do you believe that your learning, your meetings, your  
 24 consultation was sufficiently transparent and known to  
 25 the public?

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1 A. For NERVTAG, I hope so. We had -- the membership was  
2 publicly available, because it was a standing committee,  
3 the terms of reference of the committee was publicly  
4 available, and we endeavoured to write as detailed  
5 minutes as we could and to publish those as quickly as  
6 we could. There was a bit of delay initially just  
7 because of workload and for no other reason, but we got  
8 those out as quickly as we could. And I think, you  
9 know, that was very helpful.

10 But as you know, the SAGE membership and the SAGE  
11 minutes took a bit longer to be made publicly available.

12 Q. The Inquiry has heard a considerable amount of evidence  
13 about the way in which the documents, the minutes  
14 so-called of SAGE, in particular, reflected a consensus  
15 position.

16 You give an example in your statement at  
17 paragraph 101 in fact that at one particular meeting,  
18 I think it was 24 January, the debate had to  
19 a significant extent revolved around one of *The Lancet*  
20 papers to which you've taken us, one of the documents of  
21 which you were a co-author, but that the minutes of that  
22 particular SAGE on 24 January simply do not reflect that  
23 debate, indeed they make no mention of that *Lancet*  
24 article, either the scientific paper or your commentary  
25 at all?

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1 from clinical management of Covid, epidemiology of  
2 SARS-CoV-2, immunity, travel screening, SARS-2 in the  
3 care home sector, reinfection, variants, transmission,  
4 virology and the like?

5 A. Yes.

6 Q. How many papers did NERVTAG prepare and publish, do you  
7 recall, in total during that period?

8 A. I don't recall, but it would have been well over 100,  
9 I would think. So each of the meetings would have  
10 several papers prepared for it or submitted to it, and  
11 with subgroups, et cetera, we produced a lot of  
12 material.

13 Q. Were the reports that were provided to NERVTAG, and  
14 which you debated, and the scientific learning that you  
15 had prepared for NERVTAG, was all that underlying  
16 material published or made available to the public by  
17 the government?

18 A. It was, unless there were reasons not to. Sometimes  
19 the data was in confidence or was pre-publication and  
20 academics didn't want it to be shared until it had been  
21 through peer review. But our general principle was: be  
22 as open as we possibly could at all times.

23 Q. Does the evidence show that there were occasions when  
24 you even directed the secretariat to ensure that  
25 material of which you had become aware or reports that

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1 A. Yes, I think that the SAGE minutes were focused on  
2 identifying the key areas of consensus, the key pieces  
3 of advice, written, you can see, more from the position  
4 of a briefing paper to a minister, in contrast to  
5 the NERVTAG minutes, which were written with a lot more  
6 detail, including when there was disagreement and  
7 discussion, as a sort of public record of how we reached  
8 the position.

9 And I must say, in retrospect, that's been very  
10 helpful for me, because I can go back and see who  
11 disagreed with whom and why we reached a certain  
12 position.

13 Q. Did NERVTAG produce a report -- perhaps not an annual  
14 report, but a report -- subsequently detailing the  
15 majority of the work that it had done between  
16 January 2020 and June 2021?

17 A. Yes, NERVTAG traditionally has written an annual report,  
18 so although this covered a longer period, it was our  
19 attempt to do the annual report that covered the sort of  
20 first 18 months of the pandemic.

21 Q. Could we have INQ000221969, please, and page 3 of that  
22 document. It's the fifth annual report. On the  
23 contents page, Professor, can we see or can we gain  
24 an understanding of the relatively large number of areas  
25 on which NERVTAG provided advice and which it reviewed,

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1 you had received from other bodies, for example Public  
2 Health England or ONS, be made public so that the public  
3 could understand the nature of your debate and why you'd  
4 reached the conclusions that you had?

5 A. Yes, on a number of occasions there were pieces of  
6 information that we saw as papers submitted to NERVTAG  
7 that we thought were of national interest and therefore  
8 we minuted that these should be made publicly available.  
9 We had no power to make that happen, but we could minute  
10 it and recommend it to DHSC and to government.

11 Q. Now, I want to ask you some questions about  
12 the chronology and bring you back to the beginning of  
13 January.

14 You say in your statement how planning for  
15 an extraordinary NERVTAG meeting began on 9 January,  
16 when the World Health Organisation announced that the  
17 cause of the outbreak was probably a novel coronavirus.

18 A. Correct.

19 Q. Was one of the first issues that NERVTAG therefore had  
20 to consider port screening?

21 A. That was one of the first issues we were asked to  
22 consider.

23 Q. It may seem self-evident, but the DHSC or SAGE wanted  
24 NERVTAG to consider this issue because one of the first  
25 steps the government might consider taking was imposing

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1 restrictions on the border?  
 2 **A.** Yes.  
 3 **Q.** In general terms, and mindful that at that stage,  
 4 Professor, there was no sophisticated testing system in  
 5 place at all, were there distinct restrictions or limits  
 6 on what could be done by way of screening arrivals at  
 7 the border?  
 8 **A.** So the only options in the absence of a test were  
 9 symptom screening, really, so fever screening, which you  
 10 can do through temperature monitors, or asking people to  
 11 fill in a questionnaire about whether they've had  
 12 a certain suite of symptoms or not.  
 13 **Q.** Are people generally prone to want to declare that  
 14 they've got symptoms of a new and emerging infectious  
 15 disease?  
 16 **A.** I would imagine many are not.  
 17 **Q.** In relation to temperature screening or symptom  
 18 screening, is that a particularly effective way of  
 19 ascertaining whether or not people are infected?  
 20 **A.** It's not, it's very insensitive, particularly when  
 21 you've got an emerging infection which is quite rare.  
 22 The vast majority of people with a fever you'll pick up  
 23 will not have the infection, and so you will be  
 24 quarantining and evaluating a very, very large number of  
 25 people when there's very few real cases, but you will

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1 been no 'significant' human to human transmission, which  
 2 implies there may be some evidence of limited human to  
 3 human transmission ..."

4 So by this time, the end of January, it was becoming  
 5 apparent from data from China that there probably was  
 6 human-to-human transmission?  
 7 **A.** I think the data, but also the careful use of "no  
 8 'significant' human to human transmission" which implies  
 9 that it's not none.  
 10 **Q.** Page 6, please, 3.9:  
 11 "The current PHE risk assessment for this virus was  
 12 presented ..."  
 13 Professor, what does the PHE risk assessment assess?  
 14 **A.** It's a good question. We actually had debated this  
 15 considerably in NERVTAG before the pandemic, and it's  
 16 very difficult to do a meaningful and informative and  
 17 intuitive risk assessment, and actually in retrospect  
 18 this risk assessment was, if anything, unhelpful. It's  
 19 a risk assessment based on the current risk today to,  
 20 you know, the UK population, what's the risk to someone  
 21 on, you know, the Clapham omnibus or whatever, which at  
 22 that time was very low, because there were no cases  
 23 outside China, and the risk to a UK traveller is low  
 24 because, you know, it wasn't an extensive outbreak  
 25 outside of the UK. But it can and was interpreted as us

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1 also miss a large number of the real cases because they  
 2 are incubating disease, so they're infected but they're  
 3 not yet showing symptoms.

4 So, you know, the data is -- you know, it varies,  
 5 but, you know, for every case you'd detect you'd miss 15  
 6 to 20 of what you're looking for, as well as having to  
 7 evaluate many hundreds or potentially thousands of  
 8 non-cases.

9 So it's very widely regarded as a very poor measure,  
 10 a very ineffective measure.

11 **Q.** So it's ineffective, and presumably any kind of border  
 12 restriction comes at considerable cost, and not just  
 13 irritation and inconvenience to travellers but is a very  
 14 difficult system to put into place operationally?

15 **A.** Yes, and costly, and also may divert resources from  
 16 better activities like screening people who present to  
 17 healthcare centres, asking them about their travel  
 18 history and then focusing on those patients rather than  
 19 screening a large, very large number of travellers.

20 **Q.** Could we have INQ000023107, please, on the screen.  
 21 These are the minutes from that particular NERVTAG  
 22 meeting on 13 January. If we look at the first page, we  
 23 can see who was in attendance, the contents at the  
 24 bottom, and then on page 3, please, paragraph 3.2:

25 "Members note that it has been stated that there has  
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1 saying that the future risk was very low, which is  
 2 a quite different proposition. But it became  
 3 a distraction, unfortunately.

4 **LADY HALLETT:** Isn't the right thing to do to say "We cannot  
 5 carry out a risk assessment until we know more"?

6 **A.** Well, I think we could make a comment about the risk to,  
 7 you know, someone walking down Euston Road at that time,  
 8 which was very low. We couldn't make an assessment of  
 9 the risk in the next six months, one year. I think we  
 10 could have been -- that should have been communicated  
 11 better.

12 **MR KEITH:** The purpose of the PHE risk assessment process is  
 13 to inform the public as to what the Public Health  
 14 England, the government, believes is the then current  
 15 risk.

16 **A.** Yes.

17 **Q.** Having a risk assessment process which focuses only on  
 18 the risk at that particular day, on that occasion --

19 **A.** Yeah.

20 **Q.** -- fundamentally invalidates the validity of such  
 21 a public assessment, does it not?

22 **A.** Well, extremely limits it and, as I said, in the past at  
 23 NERVTAG we have gone round and round with PHE trying to  
 24 develop a more meaningful risk assessment, and this  
 25 process was completely unhelpful actually, it was

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1 distracting, it gave the wrong message and in fact, you  
2 know, it might imply we weren't doing much but we were  
3 doing an awful lot. So it didn't actually even reflect  
4 into what actions were taken.

5 So one of my recommendations is that there needs to  
6 be a much more refined approach to risk assessments and  
7 communication of risk.

8 **Q.** Do you think that if at the end of January Public Health  
9 England had declared openly and publicly: there is  
10 currently no viral activity in the United Kingdom but  
11 that, given the impossibility of effective containment,  
12 given what we know about human-to-human transmission,  
13 given that we know that the travelling around China and  
14 the Far East of millions of people, including hundreds  
15 of thousands of infected people, there's a very high  
16 risk that that virus will come here?

17 **A.** Yes, and I can't be sure that wasn't said, because  
18 I wasn't following all, you know, the public  
19 communications from PHE or government.

20 **Q.** But there was no formal risk announcement that went to  
21 anything like that degree of alerting both the  
22 government and the population --

23 **A.** No.

24 **Q.** -- that this highly dangerous, fatal viral outbreak was  
25 surely coming?

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1 Then over the page on page 9, we can see action 2,  
2 DHSC to endeavour to establish if exit screening is  
3 taking place in Wuhan. DHSC, action 3, to raise the  
4 issue of advice posters at port of entry.

5 So the actions appeared to be designed to see  
6 whether there were any sorts of controls on travellers  
7 coming out of China, out of Wuhan, to see whether  
8 infected persons were being stopped?

9 **A.** Yes.

10 **Q.** And on the UK end, the DHSC wasn't going to publish  
11 posters but it was going to raise the issue of whether  
12 or not advice posters should be posted at ports of  
13 entry?

14 **A.** Yes. I can't remember the actual wording of the -- in  
15 the more detailed minutes of action 3, but it -- there  
16 were a number of measures recommended around  
17 highlighting to travellers the potential they may be  
18 infected and what they should do if they develop  
19 symptoms.

20 **Q.** Given what was beginning to be understood about the  
21 spread of the virus in South East Asia, human-to-human  
22 transmission, the beginnings of an understanding of the  
23 possible infection and fatality rates, do you believe  
24 that these actions were sufficient?

25 **A.** In terms of border measures, yes, because it was our

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1 **A.** So we have one risk assessment framework which is the  
2 sort of government forward looking one, which --

3 **Q.** The national security risk --

4 **A.** The national security --

5 **Q.** Yes, we've heard a great deal about that. What was  
6 that?

7 **A.** The risk in the next --

8 **Q.** Yes.

9 **A.** -- you know, five, ten years, and then we have this kind  
10 of risk assessment, which is what's the risk now. What  
11 we are missing in the middle is, you know, what's the  
12 risk in the next two, four, six, one year, and therefore  
13 what should we be preparing people for and preparing for  
14 ourselves.

15 **Q.** I was -- I've now diverted you away from travel to the  
16 PHE risk assessment process. Could we have page 7:  
17 "The current Public Health England travel advice was  
18 presented:

19 "Travellers should practice good general hygiene  
20 measures such as hand washing ... travellers are advised  
21 to avoid consumption of any food ... and follow the  
22 advice of local health authorities ... there are no  
23 travel restrictions to or from Wuhan City ... travellers  
24 developing a fever and cough within 14 days of  
25 travelling from Wuhan should seek medical advice."

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1 belief and it was standard and there was a document with  
2 one of those first two NERVTAG meetings about the  
3 current position of the European Centers for Disease  
4 Control, the World Health Organisation and other bodies  
5 and other scientists around the value of symptom  
6 screening.

7 **Q.** Pause there. The WHO and the ECDC were recommending in  
8 general terms against the imposition of travel  
9 restrictions, weren't they?

10 **A.** Yes.

11 **Q.** All right.

12 **A.** And travel screening.

13 So the settled position generally was that border  
14 symptom screening is generally ineffective and it is  
15 sometimes implemented but, you know, it is not the most  
16 effective thing to do.

17 There is another issue around preventing travel, so,  
18 you know, shutting borders, shutting flights, which is  
19 more effective, much more effective, but only if you do  
20 it at a very high level, and I think that's in some of  
21 the minutes in one of the first two meetings, that you  
22 have to stop, you know, 70% to 90% of travel to even  
23 have a delay of one to two weeks. So it's a very --  
24 it's effective, but only if done at a very stringent  
25 level, and it's not something we were asked about but we

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1 did comment on it.

2 **Q.** It's well known that New Zealand was a country which did  
3 apply very stringent travel restrictions; it effectively  
4 closed its border by imposing mandatory quarantining  
5 firstly on all travellers and then only allowing  
6 residents in with quarantine.

7 By the time that New Zealand had done that,  
8 Professor, can you recall at what stage the  
9 United Kingdom was at in terms of the spread of the  
10 virus?

11 **A.** Yes, so most of the countries that introduced complete  
12 travel bans like New Zealand did so, you know, around,  
13 starting around sort of mid-March. So I think 18 March  
14 was when New Zealand introduced their complete travel  
15 ban. By that time, in the UK we already had extensive  
16 infection within the country, and it was now a domestic  
17 problem, it wasn't an imported problem.

18 So stringent restrictions on people coming into the  
19 UK, they would have had to have been very high level,  
20 you know, 70% plus of all travel stopped, not just from  
21 China because the disease was seeded around the world --  
22 in the event we were seeded from Europe, not from  
23 South East Asia -- and would have had to have been done  
24 very early.

25 It's hard to see that that would have happened early

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1 **A.** Yes, we didn't have good awareness of what was happening  
2 in the country, which meant that by the time we knew  
3 that, it was too late for travel restrictions to have  
4 had any significant impact.

5 **Q.** Coming back to the issue of what NERVTAG was doing  
6 otherwise, and mindful of that index of the areas that  
7 you looked at, was NERVTAG asked to look at social  
8 distancing or was that a matter for SPI-M?

9 **A.** We were asked about the 2-metre rule and the basis for  
10 2 metres as opposed to 1 metre or 4 metres, but we  
11 weren't asked about social distancing as a population  
12 level intervention.

13 **Q.** But you were presumably, as chair of NERVTAG and  
14 therefore an attendee on SAGE, aware of the general flow  
15 of the debate about the extent of human-to-human  
16 transmission, the extent of asymptomatic infection, and  
17 also the debate about the impact on the NHS at the  
18 beginning of March?

19 **A.** Yes.

20 **Q.** When did you in general terms become aware, Professor,  
21 that the figures for the infection fatality rate, the  
22 case fatality rate, the infection hospitalisation rate,  
23 indicated numbers of deaths and hospitalisation in such  
24 large numbers that the NHS would become overwhelmed?

25 **A.** I would have to go back and look at the -- I know at one

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1 enough because, you know, we didn't have our first  
2 domestic cases until, you know, I think it was late  
3 February, by which time it was too late, and for the UK  
4 to have led the world and closed all the borders in --  
5 would have had to have been early February, I think it's  
6 very difficult to imagine that that would have been  
7 done.

8 **Q.** So just to pick up on a couple of points there, did  
9 subsequent genomic sequencing analysis show that there  
10 had been hundreds, if not thousands of individual  
11 seedings, that is infection points, within the  
12 United Kingdom in particularly the later part of  
13 February and the beginning of March?

14 **A.** Yes, from Italy, France --

15 **Q.** From Western Europe?

16 **A.** -- yeah, Spain.

17 **Q.** And that the majority, as it transpired, of those  
18 infections had gone unknown --

19 **A.** Yes.

20 **Q.** -- because they were asymptomatic?

21 **A.** Yes.

22 **Q.** So the position at the end of February was the infection  
23 had already taken hold, there was sustained community  
24 transmission, but that our ability to be aware of that  
25 was significantly hindered?

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1 of the NERVTAG meetings we were asked to give opinion on  
2 those very parameters for SPI-M modelling, in which we  
3 gave some indication of where we thought the most  
4 reasonable numbers were, and I believe that was towards  
5 the end of February, early March.

6 **Q.** I ask you because your statement makes the point that  
7 the situational awareness of SAGE and of NERVTAG was  
8 poor in February until, as you've described, more data  
9 became available. But the data that was absent, what  
10 sort of data was that? Was it data that disabled you  
11 and SAGE from understanding the likely impact of the  
12 virus on hospitals, and what the numbers of deaths and  
13 hospitalisations would be, or was it the more  
14 sophisticated data that was absent concerning the detail  
15 of latent periods and incubation periods and the more  
16 nuanced information about the virus?

17 **A.** So, I think there are a number of layers to the  
18 underlying question about whether we should have acted  
19 earlier. What we were facing was becoming very apparent  
20 toward the end of February and, from those parameters,  
21 were we to get extensive transmission in the UK it would  
22 be very serious, there would be a very large number of  
23 hospitalisations and deaths that would quite feasibly  
24 overwhelm the NHS.

25 What was missing was when that was going to happen.

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1 Was it going to happen next week, one month, two months,  
2 four months? And you can see from some of the earlier  
3 papers there was uncertainty. I think one of the pieces  
4 of evidence you showed me earlier said that it would be  
5 two to four months from domestic transmission in the UK  
6 to the peak, which turned out to be wrong; it turned out  
7 to be one month.

8 So I think we were becoming aware of what to expect,  
9 and that was becoming very well known, and that was  
10 discussed at SAGE and was known to NERVTAG and was in  
11 the SPI-M modelling. But we didn't know when it was  
12 going to happen, and also we didn't know what we should  
13 do about it, because the more nuanced data you were  
14 talking about is important if we're deciding how long  
15 you quarantine people for, how long you need to get your  
16 results from test and trace back to reduce transmission.

17 So, yes, we knew what was coming, but there were  
18 other things that we didn't know, and they were the  
19 things that became apparent in March.

20 **Q.** A considerable amount of time was spent debating the  
21 nature of what possible interventions could be applied,  
22 in modelling terms what might be the impact of whatever  
23 measures the government sought --

24 **A.** Yeah.

25 **Q.** -- saw fit to impose. But to what extent, if any -- and  
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1 thought based on our earlier data? And that was  
2 probably, you know, a week or ten days earlier than the  
3 lockdown that we thought we knew enough scientifically.

4 Then there's the question about -- which is not my  
5 area -- when politically would it have been acceptable?  
6 And I think it is important to think about the number of  
7 cases we were having in the UK at that time, which,  
8 you know, was quite low. We only had the first UK  
9 domestic case identified -- because there were actually  
10 a lot -- in late February, and so the numbers were  
11 creeping up. So at which point it would have been seen  
12 as a measure that could be taken at a political level is  
13 a different question.

14 **Q.** I now want to look at some of the important areas, other  
15 important areas that NERVTAG provided advice upon, not  
16 directly related to the lockdown decision or NPIs.

17 NERVTAG played a very considerable role, as you've  
18 described, in advising on the efficacy of face masks, on  
19 the protection of the vulnerable and in particular those  
20 in care homes, and also on the issue of contact tracing.

21 So just dealing with those three in order: in  
22 relation to face masks, from late January, as you've  
23 already described, NERVTAG was tasked to provide advice  
24 and specifically on the efficacy, the utility of face  
25 masks. Is this the position: that by mid-February  
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1 I genuinely put it neutrally -- did the focus for those  
2 early weeks in March on the modelling, the working out  
3 of what possible interventions might have the best  
4 effect, the consequences of NPIs, concealed the reality,  
5 a much more brutal and less scientific reality, which  
6 was just the numbers of the virus and the epidemic would  
7 be bound to lead to the NHS being overwhelmed?

8 **A.** I don't think it concealed it. You know, it was  
9 a fairly straightforward calculation to see that,  
10 you know, with a 1% fatality rate and 80% of the  
11 population being infected, you were going to see a lot  
12 of people dying and you would see a lot of people in  
13 hospital. And so the work that was done in March to  
14 improve the situational awareness, to try to understand  
15 when that was coming and how fast it would come, and to  
16 try to design the best interventions, I don't think hid  
17 it, but you might not see that from the SAGE minutes.

18 **Q.** To what extent, if any, Professor, do you believe that  
19 the decision-making process that led to the first  
20 lockdown may have been too slow?

21 **A.** I think it could have been done earlier. There's  
22 a scientific question about how much earlier. When did  
23 we know that we could identify when the peak was going  
24 to happen, that it was going to be in a month, not in,  
25 you know, two to four months, which we'd previously  
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1 NERVTAG recommended that wearing a face mask by  
2 symptomatic people is recommended, if tolerated, but  
3 that the wearing of face masks by well people living  
4 with symptomatic people is not recommended, and also not  
5 recommended is the wearing of face masks in public?

6 Were there a number of meetings of SAGE and NERVTAG  
7 through February, April -- 7 and 19 and 13 April and  
8 then 14 April -- at which NERVTAG and SAGE returned  
9 repeatedly to the issue of face masks?

10 **A.** Yes, that's right, and this is one of the issues I said  
11 I think rightly came back round again.

12 **Q.** On 7 April, the SAGE minutes show that NERVTAG had  
13 concluded that the increased use of masks would have  
14 minimal effect.

15 On 9 April, the NERVTAG minutes from that day,  
16 NERVTAG 13, showed that Sir Jonathan Van-Tam had asked  
17 you to return to the issue of face masks because other  
18 countries had introduced what's known as soft advisory  
19 positions in relation to the use of face masks, and he  
20 was concerned that NERVTAG and SAGE should re-examine  
21 the issue; is that correct?

22 **A.** That's correct.

23 **Q.** Was there then a very considerable consideration  
24 provided by a paper dated 13 April called "*Face mask use  
25 in the Community*"? Did that paper summarise all the  
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1 evidence which had gone before, set out a number of  
 2 policy options, and basically conclude that there was  
 3 weak evidence that the use of face masks by symptomatic  
 4 people may reduce transmission?  
 5 **A.** That's correct. It summarised the evidence as we saw  
 6 it, which is something we might want to discuss.  
 7 **Q.** How did you see it, as NERVTAG, by 16 April?  
 8 **A.** So NERVTAG had looked at the issues of face masks in the  
 9 past, pre-pandemic, and had taken quite a stringent  
 10 scientific view that the highest quality evidence is  
 11 randomised controlled trials, where people are  
 12 randomised to have a face mask or not -- not other sorts  
 13 of studies, not just observational studies, which have  
 14 many biases, or physical studies, how much virus is  
 15 filtered -- and that data was fairly clear that there  
 16 may be some small benefits, but it wasn't clear and the  
 17 evidence was weak. And we maintained that position on  
 18 how we saw the evidence, focusing on the data from  
 19 randomised controlled trials. Others placed more weight  
 20 on the physical evidence of filtration and the  
 21 observational data.  
 22 **Q.** To what extent was the argument for the wearing of face  
 23 masks strengthened by the application of a precautionary  
 24 approach: well, it may not have much practical benefit,  
 25 and there's only some weak evidence to support the  
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1 which may weaken trust in your scientific independence  
 2 and integrity, and you can see that face masks are still  
 3 a controversial issue with different interpretation of  
 4 the data. So we were trying to be, I think, very  
 5 scientifically clean.  
 6 **MR KEITH:** At that time, so in April, it was very apparent  
 7 to NERVTAG, wasn't it, that the government had real  
 8 concerns about -- this is your second point -- about the  
 9 availability of masks? If NERVTAG or SAGE were to  
 10 recommend the wearing of face masks, the government was  
 11 concerned that that would take limited number of masks,  
 12 such as there were, away from the healthcare sector?  
 13 I don't know whether we have this in the system,  
 14 INQ000102697, page 33. This is a page from a WhatsApp  
 15 group including Mr Hancock, and you can see at about  
 16 the tenth or eleventh entry, 16.04 -- 16 April 2020,  
 17 22.03.53, Matt Hancock MP:  
 18 "WE DO NOT HAVE ENOUGH MASKS TO SAY THESE THINGS."  
 19 Then:  
 20 "Talking about this before we are ready risks taking  
 21 masks from nurses and social care workers who really  
 22 need them. It is self-indulgent and dangerous."  
 23 Now, that wasn't a remark made specifically in  
 24 relation to the NERVTAG consideration but it shows,  
 25 doesn't it, that the government was concerned about the  
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1 beneficial consequences of wearing a face mask, but it's  
 2 a good thing to do?  
 3 **A.** There are two considerations there. One is there was  
 4 an issue early on about the availability of face masks  
 5 and using them for a setting where they're less  
 6 effective and less useful. The second was around  
 7 communicating doing something when the evidence wasn't  
 8 strong. But the reason it came back to us -- and  
 9 I think it was right -- was the context had changed.  
 10 The threat was much greater and more present than when  
 11 we made the first recommendation. There was emerging  
 12 data, observational data, which is sort of non-trial  
 13 data, from places like Hong Kong, and there was more  
 14 data about asymptomatic transmission.  
 15 So the context, the evidence hadn't really changed.  
 16 It had a bit, that we now had some Covid data rather  
 17 than flu data, but the context had changed dramatically.  
 18 **LADY HALLETT:** I'm sorry, I'm not following, Sir Peter. If  
 19 there's a possible benefit, what's the downside?  
 20 **A.** The downside is you might divert face masks from  
 21 healthcare workers and those who need them most, and  
 22 those in who they're most effective, so sick people or  
 23 the clinically very vulnerable.  
 24 The second downside is that you are making  
 25 a population-wide recommendation based on weak evidence,  
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1 practicalities?  
 2 **A.** Yes, I mean, it's the first time I've seen that, and  
 3 it -- we were not -- in no way were we pressured by  
 4 anyone from government to make any advice based on the  
 5 availability of masks but, as we had healthcare workers  
 6 on the committee, it was a clear issue about the  
 7 availability of PPE for healthcare workers, and raised  
 8 by committee members that it could divert stocks away  
 9 from places where they're more effective.  
 10 **Q.** In the event, Professor, following the advice given by  
 11 NERVTAG and adopted by SAGE, the government advised on  
 12 11 May the public to consider wearing face coverings,  
 13 and then in June they became mandatory in public  
 14 transport, and then in July in shops?  
 15 **A.** Well, I would say it wasn't just on the basis of  
 16 NERVTAG, and I think this was -- you know, this is  
 17 an example of effective challenge where DH or SAGE  
 18 commissioned other expert groups to look at the data.  
 19 The Royal Society and the DELVE group produced a paper,  
 20 and also there were some other groups that looked at the  
 21 data. So there was an attempt to get differing  
 22 scientific views of the value of it, and it was those,  
 23 all of those inputs I think that changed the position,  
 24 not just NERVTAG.  
 25 **Q.** But NERVTAG was not an outlier, was it? The general  
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1 consensus was, from those other no less worthy  
 2 scientific groups, was that there was some weak evidence  
 3 to support the wearing of face masks and that in all the  
 4 circumstances it was something you could recommend?  
 5 **A.** Yes, that's correct, and that matched what others were  
 6 doing. So we were seeing WHO and the United States  
 7 shift their position at the same time.  
 8 **Q.** The WHO changed its recommendation in June, did it not?  
 9 **A.** Yes, I believe so, yep.  
 10 **Q.** Contact tracing, shortly.  
 11 Did NERVTAG and SPI-M hold an extraordinary meeting  
 12 on 26 April where it considered issues such as what  
 13 sort of people should be contact traced, should they be  
 14 the self-diagnosed contacts of an index case or  
 15 a confirmed case, people who had confirmed -- were  
 16 confirmed to have coronavirus, and issues concerning how  
 17 long the period of quarantine should be, what advice  
 18 should be given to contacts, and whether or not testing  
 19 of asymptomatic contacts was advisable?  
 20 **A.** Yes.  
 21 **Q.** So NERVTAG was at the heart of the debate about the  
 22 nature of the contact tracing system which the  
 23 government sought to build in those late spring months  
 24 and then through the summer?  
 25 **A.** I believe the government, Public Health England, had  
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1 over Easter, and you expressed full concern, didn't you,  
 2 about the high rates of positivity, tests showing  
 3 positive tests in care homes amongst residents and  
 4 staff, even though many of those individuals had been  
 5 asymptomatic at the time of testing?  
 6 **A.** Yes.  
 7 **Q.** Did, therefore, you ask Public Health England to bring  
 8 a paper to your next NERVTAG meeting to answer specific  
 9 questions you had about the management of SARS Covid  
 10 positive people in care homes?  
 11 **A.** Yes, we were in a sort of dilemma in that we were not  
 12 commissioned to look at this, it was not scientific  
 13 advice, but it was something that was worrying us as  
 14 a committee; and so in a way that was a vehicle to bring  
 15 it back on to the NERVTAG agenda, was to ask PHE to see  
 16 what advice they might want from us.  
 17 **Q.** In light of the answers provided by PHE at the next  
 18 meeting, did you agree that more stringent measures were  
 19 needed for nursing homes to improve shielding of  
 20 vulnerable individuals, because they're naturally highly  
 21 vulnerable?  
 22 **A.** Yes.  
 23 **Q.** And you made a specific recommendation that your  
 24 comments be relayed to the DHSC, in particular that  
 25 positive but asymptomatic staff should not provide care  
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1 an idea of what they wanted to put in place, and they  
 2 were asking NERVTAG to give a scientific opinion on the  
 3 validity of what they were proposing to do.  
 4 **Q.** Finally, care homes, as I mentioned. In light of the  
 5 time, I'm going to deal with this fairly shortly,  
 6 Professor, but it is an extremely important issue and  
 7 I don't think anyone to think that, because of the  
 8 shortness of time, that less importance is being paid to  
 9 it.  
 10 NERVTAG, from April onwards, discussed measures for  
 11 the care of staff and residents in the care sector, did  
 12 they not? From April did your committee raise very  
 13 significant concerns about the likely impact of the  
 14 epidemic, the disease, on care homes and on what could  
 15 and should be done to afford them a greater level of  
 16 protection?  
 17 **A.** Yes. We were not commissioned to do that. It was  
 18 actually a very operational, not a scientific issue, but  
 19 it became apparent during our review of data as part of  
 20 our scientific activities that there was a problem, and  
 21 although it really sat outside our remit of giving  
 22 science advice, it was something we felt that we should  
 23 raise with Department of Health and Social Care.  
 24 **Q.** On 24 April, your 15th NERVTAG meeting investigated the  
 25 well publicised outbreaks of the infection in care homes  
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1 or have any contact with vulnerable individuals?  
 2 **A.** Yes.  
 3 **Q.** You again, at a later meeting, asked for more  
 4 reassurance that your concerns had been acted upon, and  
 5 eventually you wrote to the CMO, as the chair of  
 6 NERVTAG, pointing out that you'd highlighted high rates  
 7 of transmission in care homes, that you had asked for  
 8 reassurance about the measures which would be applied,  
 9 and that you were unclear on what practical steps the  
 10 government was actually taking?  
 11 **A.** Yes, I mean, we have a number of routes available to us.  
 12 One is minuting our concerns; number two is a formal  
 13 minuted action to pass a concern on to particular  
 14 individuals in DHSC; and the final route open to us is  
 15 to write a formal letter from the chair to the Chief  
 16 Medical Officer who, you know, is the responsible person  
 17 for the committee within the Department of Health.  
 18 **Q.** I don't know whether we have this on the system,  
 19 INQ000221994. I think we do, thank you.  
 20 Sir Chris Whitty replied on 26 May. In that letter  
 21 which comes from, we can see from the heading, the Chief  
 22 Medical Officer and Chief Scientific Adviser,  
 23 Professor Chris Whitty, within the Department of Health  
 24 and Social Care, he referred to -- he referred back to  
 25 the government's published adult social care action  
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1 plan. He summarised what the approach had been in that  
2 action plan. He said:

3 "We have been working on the next steps of  
4 interventions."

5 Then he referred again with these words to that  
6 plan:

7 "This care home support package sets out steps that  
8 must now be taken to keep people in care homes safe."

9 There's a reference to funding on 13 May.

10 Then over the page, what is been done in terms of  
11 tests being made generally available, clinical support,  
12 local authority care home support plans, building the  
13 workforce.

14 Did that letter, Professor, address the concerns  
15 that you had raised repeatedly in your communications  
16 within NERVTAG and to the government?

17 **A.** Yes, I felt it did, and particularly the -- setting up  
18 the care home subgroup meant that we felt there was  
19 a group dedicated to addressing this problem and  
20 monitoring it and evaluating the measures, so we felt  
21 satisfied that this now was being taken care of.

22 **Q.** NERVTAG believed it had done all that it could --

23 **A.** Yes.

24 **Q.** -- to ensure its concerns were met?

25 **A.** Yes.

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1 To move on, please, to May 2020, because at this  
2 stage one of NERVTAG's subgroups appears to have  
3 grappled with this question of definition, and that's  
4 the clinical risk stratification group --

5 **A.** Yes.

6 **Q.** -- which is one of the ones that you refer to in your  
7 statement.

8 So this was a group which was established in  
9 response to a commission from DHSC and the CMO's office,  
10 the objective being to produce a risk prediction  
11 algorithm to estimate hospital outcomes and mortality  
12 outcomes in the adult population, and that was to be  
13 rolled out in healthcare settings.

14 That's the summary, I think, from the annual report  
15 that you referred to earlier.

16 **A.** Yes.

17 **Q.** Is it right that that ultimately, the product of that  
18 group, became QCovid?

19 **A.** That's correct.

20 **Q.** So that was the risk prediction tool that was in  
21 operation.

22 **A.** Yes.

23 **Q.** So you tell us in your statement, Professor, that you  
24 attended meetings of this subgroup, at least initially,  
25 until it was set up --

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1 **MR KEITH:** Thank you very much.

2 My Lady, those are all my questions.

3 **LADY HALLETT:** I think I've agreed to -- I think it's  
4 Ms Stone going first.

5 **Questions from MS STONE**

6 **MS STONE:** Thank you, my Lady.

7 Good afternoon, Professor. I ask questions on  
8 behalf of Covid Bereaved Families for Justice UK. Could  
9 I ask you some questions, please, about the definition  
10 of Covid mortality and see if you can help us with that.

11 To contextualise, at NERVTAG meetings from at least,  
12 I think, late March, you received and discussed regular  
13 surveillance updates, and that included data on  
14 mortality, did it not?

15 **A.** Yes.

16 **Q.** So at that stage, so March into April 2020, what was  
17 your understanding about how Covid mortality was being  
18 defined and measured, please?

19 **A.** I would have to go back and look at that, but it was --  
20 you know, I believe it was around, you know, deaths  
21 within 28 days of a Covid diagnosis.

22 **Q.** So was there also an element about Covid-19 appearing on  
23 a death certificate?

24 **A.** I don't recall us ever discussing that.

25 **Q.** Thank you.

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1 **A.** Yes.

2 **Q.** -- and then you left it to others, I think?

3 So in that context, can I ask you specifically about  
4 a discussion which took place at the first meeting of  
5 that subgroup about definitions in respect of Covid  
6 mortality, please.

7 I'd be grateful for INQ000221965, please.

8 Thank you. So we can see this, Professor, on the  
9 screen. It's a minute of a meeting which took place on  
10 20 May 2020, and we can see that you're amongst those  
11 who are noted to be present.

12 **A.** Yes.

13 **Q.** If we could go, please, to page 2 and section 2, and  
14 this deals with development of the model. The Inquiry's  
15 heard quite a lot about modelling this week, but in  
16 essence this tool was a form of modelling, of model, was  
17 it?

18 **A.** Yes, it was. It is.

19 **Q.** If we can look at paragraph 2.3 in particular, we can  
20 see there that the group discussed possible outcome  
21 measures, and most agreed that the risk of death if  
22 positive for Covid-19 should be the primary outcome  
23 measure, noting that a definition of Covid-19 positive  
24 death was required; and then there's an action point  
25 which says that:

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1 "All to contribute towards developing a precise  
2 definition of Covid-19 mortality, ideally to match the  
3 figures which the government has been publishing."

4 First question, please, Professor, is: why was  
5 a definition of Covid-19 positive death required in this  
6 context?

7 **A.** Because the objective was to try and get more refined  
8 estimates of individual risk of dying if they had  
9 a Covid infection, and dying due to the Covid infection.  
10 So the first thing is to be very clear about what your  
11 definition is comprised of.

12 **Q.** Can you help us with how it was proposed that all  
13 members of the group would contribute to that exercise?

14 **A.** Unfortunately I can't, because I wasn't chairing  
15 the meeting, and the development of the tool and the  
16 models was under Professor Hippisley-Cox's management,  
17 and I hadn't been involved in developing these kind of  
18 tools before.

19 **Q.** I see.

20 Can I ask you then, please, if you can help us with  
21 the significance of the final words there in that  
22 action, which are "ideally to match the figures which  
23 the government has been publishing"?

24 **A.** That's a very good question. I don't recall that  
25 statement or remember why that was put in there.

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1 **MS STONE:** Yes, thank you, Professor.

2 Thank you, my Lady.

3 **LADY HALLETT:** Thank you, Ms Stone.

4 Mr Metzger, I think you can just complete the  
5 questioning.

6 **MR METZGER:** Yes, of course, my Lady. There are a small  
7 number of questions which I understood were going to be  
8 put, which I think -- subject, of course, to my Lady --  
9 were going to be put by Mr Keith.

10 I will be very short, but I do need to ask  
11 permission to go a little wider than the questions  
12 I have permission to ask. I shouldn't be too long.

13 **LADY HALLETT:** Well, we have to finish by 5 at the very  
14 latest, Mr Metzger, so I'm sorry, you've got your  
15 five minutes.

#### 16 Questions from MR METZGER KC

17 **MR METZGER:** Professor Horby, first can you confirm that  
18 NERVTAG confirmed that identifying the end of symptoms  
19 may be very prolonged or very difficult to define on  
20 6 March 2020, and specifically discussed ongoing  
21 clinical issues post-Covid and the potential need for  
22 a clinical forum on 15 May?

23 **A.** Yes, correct, we did.

24 **Q.** Thank you.

25 Can you outline NERVTAG's discussions on Long Covid

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1 **LADY HALLETT:** I think we're going to have to move on,

2 Ms Stone, I'm afraid.

3 **MS STONE:** Yes.

4 **LADY HALLETT:** I have been asked to take a break, and I am  
5 anxious to try and complete the professor's evidence, so  
6 could you move on, please.

7 **MS STONE:** Of course, my Lady.

8 Does the fact that this was being raised as an issue  
9 indicate that there wasn't a standard definition of  
10 Covid mortality by May 2020?

11 **A.** I think that's correct, it's difficult to define causes  
12 of death, but it's incredibly important, and there are  
13 many different ways to define a cause of death, and it's  
14 not straightforward, but it does need to be discussed  
15 transparently and agreed.

16 **Q.** And finally, how was the definition agreed in this forum  
17 going to be used? Did it have any wider application  
18 than the risk stratification tool?

19 **A.** Not that I recall, but the use of the risk  
20 stratification tool was used for, I think, vaccination  
21 policy, so it did have material implications.

22 **Q.** So it was policy going forward, was it, including  
23 vaccinations?

24 **A.** It was used as a tool, I think, for people being  
25 prioritised for vaccination.

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1 and the outcome of the discussions? We note -- and I'm  
2 not going to take you to them -- the minutes of NERVTAG  
3 show that Long Covid was only first mentioned on  
4 4 September 2020, and that during the course of that  
5 meeting the issue of Long Covid was raised, and the  
6 minutes note:

7 "Should NERVTAG look at this and have a view?"

8 The question is: the action was for you,  
9 Professor Horby, to discuss with Jonathan Van-Tam  
10 whether advice was needed for NERVTAG on Long Covid; is  
11 that right?

12 **A.** I believe so, yes.

13 **Q.** Thank you. And why, when discussions on clinical issues  
14 post-Covid were identified by NERVTAG back in May 2020,  
15 was Long Covid only discussed in September of that year?

16 **A.** So the quotes that you gave from May were really about  
17 when we should define a point for quarantining or  
18 isolation of patients, the start of illness or the end  
19 of illness? Should somebody stay in quarantine for  
20 seven or 14 days after start of illness or, you know,  
21 four to seven days after end of illness? And the  
22 clinicians amongst us on the committee noted that there  
23 can be long-term symptoms like chronic cough, et cetera,  
24 fatigue, which make it quite difficult to define an end  
25 point.

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1 So that was the context for that discussion. It  
 2 wasn't a context about: what are the longer term  
 3 complications of Covid? And, you're right, that wasn't  
 4 really raised until quite a lot later.  
 5 **Q.** Thank you.  
 6 Are you able to comment on the ISARIC Long Covid  
 7 study, when it was established, whether it was launched  
 8 in response to SAGE 29's discussions, and why you didn't  
 9 mention ISARIC's work on Long Covid in your witness  
 10 statement?  
 11 **A.** Yes. Thank you for that, it's a good point.  
 12 We did start to engage on Long Covid through ISARIC  
 13 towards sort of late summer, we engaged with the  
 14 Long Covid survivors group, and they were co-developers  
 15 of the Long Covid protocol, which we have established  
 16 and is -- data is being collected on that. But you're  
 17 right, it's an omission from the evidence statement.  
 18 **Q.** Thank you.  
 19 Lastly, areas that were given permission for  
 20 previously.  
 21 Professor Brightling and Dr Evans in their expert  
 22 report on Long Covid commend ISARIC's study as  
 23 a hibernating observational study of people hospitalised  
 24 for an acute infection that was trial-ready at the onset  
 25 of the pandemic.

1 were missing sort of historic data that made us think  
 2 that this would be a major issue.  
 3 **MR METZER:** Okay. Thank you very much, Professor Horby.  
 4 Thank you, my Lady.  
 5 **LADY HALLETT:** Thank you, Mr Metzger.  
 6 **MR KEITH:** My Lady, we're back on track in terms of  
 7 timetable. That concludes today's evidence.  
 8 **LADY HALLETT:** I'm sure we all send our apologies to our  
 9 stenographer.  
 10 10 o'clock tomorrow, please.  
 11 I'm so sorry, thank you so much, Professor  
 12 Sir Peter, I'm really grateful for all your help.  
 13 **THE WITNESS:** Thank you.  
 14 **LADY HALLETT:** And for all that, obviously, you've done to  
 15 try and assist in this kind of pandemic and indeed  
 16 others. Thank you.  
 17 **THE WITNESS:** Thank you.  
 18 **(The witness withdrew)**  
 19 **(5.00 pm)**  
 20 **(The hearing adjourned until 10 am**  
 21 **on Thursday, 19 October 2023)**  
 22  
 23  
 24  
 25

1 Do you agree that the focus of ISARIC, WHO(?), the  
 2 CCP, and on ISARIC 3C, were on patients suffering from  
 3 acute Covid-19?  
 4 **A.** Yes, that's correct.  
 5 **Q.** And could surveillance of long-term sequelae have been  
 6 built into the sleeping observational study that was  
 7 trial-ready at the start of the pandemic?  
 8 **A.** Yes, it could have done and we intend to do that in the  
 9 future. It was an omission.  
 10 **Q.** Thank you.  
 11 Lastly, Professor Brightling and Dr Evans also gave  
 12 evidence to the Inquiry that the risk of long-term  
 13 sequelae was foreseeable before the Covid-19 pandemic  
 14 based on evidence of post-viral sequelae from both MERS  
 15 and SARS.  
 16 If ISARIC was developed in 2012 and activated for  
 17 MERS, do you accept that the absence of monitoring  
 18 long-term sequelae initially was a blind spot of  
 19 ISARIC's?  
 20 **A.** Having personally seen SARS cases and avian flu cases  
 21 and worked closely with people who've seen MERS cases,  
 22 long-term sequelae were not highlighted as a common or  
 23 major problem, they were recognised but weren't seen to  
 24 be a major common problem. So I think at that time we  
 25 may have underappreciated it, but I don't see that we

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[1]<br>57/24<br><b>12.58 pm</b> [1] 116/22<br><b>13</b> [1] 204/16<br><b>13 April</b> [2] 204/7<br>204/24<br><b>13 February</b> [2] 5/24<br>6/3<br><b>13 January</b> [1]<br>190/22<br><b>13 March</b> [1] 67/1<br><b>13 May</b> [1] 213/9<br><b>14</b> [3] 78/5 96/17<br>96/18<br><b>14 April</b> [1] 204/8<br><b>14 days</b> [2] 194/24<br>220/20<br><b>14 March</b> [3] 64/13<br>73/4 77/4<br><b>145</b> [1] 178/8<br><b>15</b> [1] 190/5<br><b>15 May</b> [1] 219/22<br><b>15th</b> [1] 210/24<br><b>16 April</b> [1] 205/7<br><b>16 April 2020</b> [1]<br>207/16<br><b>16 January</b> [2]<br>161/10 161/14<br><b>16 June 2021</b> [1]<br>63/25<br><b>16 March</b> [1] 65/11<br><b>16.04</b> [1] 207/16<br><b>17 January</b> [1] 160/8<br><b>17.1</b> [1] 78/14<br><b>17.16</b> [1] 86/14 | <b>17.18</b> [1] 87/21<br><b>17.19</b> [1] 88/19<br><b>18 March</b> [1] 197/13<br><b>18 months</b> [1]<br>186/20<br><b>18 October 2023</b> [1]<br>1/1<br><b>19</b> [22] 4/12 5/3<br>63/11 78/3 82/24<br>105/17 106/24 156/14<br>157/4 159/6 168/17<br>169/5 172/6 183/17<br>204/7 214/22 216/22<br>216/23 217/2 217/5<br>222/3 222/13<br><b>19 March</b> [1] 162/6<br><b>19 March 2020</b> [1]<br>172/10<br><b>19 October 2023</b> [1]<br>223/21<br><b>1918</b> [4] 67/24 68/13<br>68/25 70/22<br><br><b>2</b><br><b>2 January</b> [3] 165/3<br>168/23 169/18<br><b>2 metres</b> [1] 199/10<br><b>2 o'clock</b> [1] 116/21<br><b>2,000</b> [1] 97/2<br><b>2,000 people</b> [1]<br>107/10<br><b>2-metre</b> [1] 199/9<br><b>2.00 pm</b> [1] 116/24<br><b>2.3</b> [1] 216/19<br><b>20</b> [1] 190/6<br><b>20 May 2020</b> [1]<br>216/10<br><b>20,000 people</b> [1]<br>120/4<br><b>200</b> [1] 110/8<br><b>2003</b> [1] 166/8<br><b>2009</b> [8] 2/8 2/13 9/1<br>62/5 69/11 118/24<br>158/24 159/5<br><b>2009/2010</b> [1] 4/3<br><b>2010</b> [3] 2/14 4/3<br>118/24<br><b>2012</b> [1] 222/16<br><b>2018</b> [1] 156/17<br><b>2019</b> [2] 160/18<br>171/10<br><b>2020</b> [38] 3/4 4/4 4/7<br>4/24 5/13 5/22 9/4<br>18/19 36/2 40/19<br>40/23 48/16 48/19<br>54/1 57/24 62/7 87/12<br>90/1 114/19 120/12<br>120/20 121/3 139/20<br>140/7 144/18 153/15<br>153/16 156/20 172/10<br>186/16 207/16 214/16<br>215/1 216/10 218/10<br>219/20 220/4 220/14<br><b>2021</b> [8] 11/12 63/25 | 89/3 89/9 89/23 90/8<br>156/21 186/16<br><b>2022</b> [4] 11/3 11/4<br>22/14 87/12<br><b>2023</b> [4] 1/1 1/16<br>117/21 223/21<br><b>21 August 2023</b> [1]<br>1/16<br><b>21 January</b> [1]<br>165/11<br><b>21.7</b> [1] 16/3<br><b>22 March</b> [2] 80/9<br>83/18<br><b>22 October 2020</b> [1]<br>114/19<br><b>22.03.53</b> [1] 207/17<br><b>22.22</b> [1] 106/12<br><b>23 April</b> [1] 73/4<br><b>23 March</b> [1] 80/11<br><b>24</b> [2] 7/11 11/25<br><b>24 April</b> [1] 210/24<br><b>24 February</b> [1]<br>18/20<br><b>24 January</b> [3]<br>170/15 185/18 185/22<br><b>25</b> [1] 8/7<br><b>26</b> [1] 8/10<br><b>26 April</b> [1] 209/12<br><b>26 January</b> [1]<br>120/20<br><b>26 May</b> [1] 212/20<br><b>26 pages</b> [1] 117/25<br><b>28</b> [1] 8/13<br><b>28 days</b> [1] 214/21<br><b>29's</b> [1] 221/8<br><br><b>3</b><br><b>3 April</b> [1] 84/22<br><b>3 March</b> [3] 101/6<br>101/23 103/23<br><b>3.18 pm</b> [1] 168/11<br><b>3.2</b> [1] 190/24<br><b>3.35</b> [1] 168/10<br><b>3.35 pm</b> [1] 168/13<br><b>3.9</b> [1] 191/10<br><b>33</b> [1] 207/14<br><b>37</b> [1] 28/5<br><b>37.8</b> [1] 14/25<br><b>38</b> [3] 15/21 29/8<br>31/20<br><b>39</b> [1] 29/17<br><b>3C</b> [1] 222/2<br><br><b>4</b><br><b>4 March</b> [5] 93/25<br>95/16 97/22 99/15<br>102/23<br><b>4 metres</b> [1] 199/10<br><b>4 September 2020</b> [1]<br>220/4<br><b>4.1</b> [1] 11/24<br><b>4.3</b> [1] 113/12<br><b>41</b> [1] 121/24<br><b>48</b> [1] 22/16 | <b>49</b> [1] 44/14<br><br><b>5</b><br><b>5.00 pm</b> [1] 223/19<br><b>5.3</b> [1] 130/7<br><b>50</b> [1] 70/18<br><b>500</b> [1] 167/3<br><b>51</b> [2] 36/17 48/14<br><b>56</b> [1] 32/14<br><br><b>6</b><br><b>6 March 2020</b> [1]<br>219/20<br><b>6.3</b> [2] 28/5 28/8<br><b>6.5</b> [1] 29/17<br><b>6.9</b> [1] 31/14<br><b>60</b> [1] 95/18<br><b>600 papers</b> [1]<br>119/18<br><b>62</b> [1] 107/18<br><b>69</b> [1] 78/13<br><br><b>7</b><br><b>7 April</b> [1] 204/12<br><b>7 September</b> [1]<br>153/19<br><b>7.2</b> [1] 22/11<br><b>7.5</b> [1] 23/21<br><b>7/7</b> [1] 2/6<br><b>70</b> [2] 196/22 197/20<br><b>70 years</b> [1] 70/18<br><b>73</b> [6] 86/13 95/21<br>95/25 96/20 97/6 97/9<br><b>75</b> [2] 87/20 156/19<br><b>75 meetings</b> [1]<br>156/22<br><br><b>8</b><br><b>80</b> [1] 202/10<br><b>87.9</b> [1] 107/16<br><b>89 of</b> [1] 157/4<br><br><b>9</b><br><b>9 and</b> [1] 57/24<br><b>9 April</b> [1] 204/15<br><b>9 January</b> [1] 188/15<br><b>9 June</b> [1] 54/10<br><b>9 March</b> [2] 58/24<br>59/12<br><b>9.1</b> [1] 62/17<br><b>9.2</b> [1] 63/2<br><b>90</b> [1] 196/22<br><b>91</b> [1] 16/3<br><b>94</b> [1] 13/15<br><b>94 advice</b> [1] 13/15<br><b>94 papers</b> [1] 22/5<br><b>96 papers</b> [1] 122/9<br><br><b>A</b><br><b>ability</b> [9] 45/24<br>50/19 125/2 133/7<br>140/13 162/18 177/18<br>178/9 198/24<br><b>able</b> [27] 13/9 15/6 |
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|--|--|--|---|--|
| <p><b>A</b></p> <p><b>able... [25]</b> 19/24<br/>26/16 35/1 46/1 59/3<br/>61/19 73/23 122/18<br/>125/7 125/8 126/6<br/>126/11 126/24 130/2<br/>130/18 139/3 140/18<br/>152/24 153/6 153/9<br/>166/17 168/1 171/23<br/>179/23 221/6</p> <p><b>about [253]</b></p> <p><b>above [2]</b> 88/22<br/>134/24</p> <p><b>abroad [6]</b> 157/13<br/>157/19 164/13 169/8<br/>169/15 183/3</p> <p><b>absence [7]</b> 112/14<br/>115/15 115/23 116/2<br/>126/22 189/8 222/17</p> <p><b>absent [2]</b> 200/9<br/>200/14</p> <p><b>absolute [1]</b> 177/23</p> <p><b>absolutely [24]</b> 12/10<br/>28/21 50/22 51/7 52/8<br/>52/19 59/8 62/6 71/17<br/>79/17 80/6 84/19 89/1<br/>98/15 108/5 109/20<br/>128/24 138/10 148/24<br/>160/5 163/1 166/19<br/>167/18 177/17</p> <p><b>abuse [2]</b> 25/21<br/>151/6</p> <p><b>academic [14]</b> 1/25<br/>3/23 39/8 39/10 40/3<br/>45/12 45/15 51/5 51/7<br/>51/10 52/7 62/5 67/17<br/>157/24</p> <p><b>academics [8]</b> 18/5<br/>30/3 39/21 45/12 46/3<br/>50/22 92/20 187/20</p> <p><b>accelerate [1]</b> 183/16</p> <p><b>accept [2]</b> 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| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>mid-February [3]</b><br>10/24 18/19 203/25  | <b>mirror [1]</b> 148/3  | <b>more [101]</b> 4/19 6/5<br>7/3 9/9 10/5 10/22<br>11/22 13/17 14/19<br>17/14 20/14 25/6<br>27/19 30/8 30/12<br>34/25 35/1 35/21<br>36/14 39/22 41/25<br>42/15 44/24 47/18<br>48/12 49/19 50/15<br>50/16 50/18 50/24<br>51/21 53/23 54/4 54/9<br>54/22 54/23 56/14<br>63/16 69/11 71/15<br>72/7 73/3 74/11 74/16<br>74/20 74/21 75/21<br>75/23 77/1 85/17<br>102/17 105/2 110/25<br>115/20 117/15 126/12<br>127/15 130/18 133/24<br>135/4 138/4 139/3<br>142/19 143/17 144/5<br>144/6 146/19 147/8<br>147/21 151/8 153/4<br>154/24 158/4 159/3<br>166/7 166/9 167/4<br>177/9 180/11 181/5<br>181/16 186/3 186/5<br>192/5 192/24 193/6<br>195/15 196/19 196/19<br>200/8 200/13 200/15<br>201/13 202/5 205/19<br>206/10 206/13 208/9<br>211/18 212/3 217/7   | <b>motivation [5]</b> 70/25<br>76/12 85/17 113/14<br>140/10  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>mid-March [2]</b> 162/5<br>197/13   | <b>miscategorised [1]</b><br>23/12   | <b>months [10]</b> 38/14<br>40/22 75/5 186/20<br>192/9 201/1 201/2<br>201/5 202/25 209/23<br>201/5 202/25 209/23<br>7/3 9/9 10/5 10/22<br>11/22 13/17 14/19<br>17/14 20/14 25/6<br>27/19 30/8 30/12<br>34/25 35/1 35/21<br>36/14 39/22 41/25<br>42/15 44/24 47/18<br>48/12 49/19 50/15<br>50/16 50/18 50/24<br>51/21 53/23 54/4 54/9<br>54/22 54/23 56/14<br>63/16 69/11 71/15<br>72/7 73/3 74/11 74/16<br>74/20 74/21 75/21<br>75/23 77/1 85/17<br>102/17 105/2 110/25<br>115/20 117/15 126/12<br>127/15 130/18 133/24<br>135/4 138/4 139/3<br>142/19 143/17 144/5<br>144/6 146/19 147/8<br>147/21 151/8 153/4<br>154/24 158/4 159/3<br>166/7 166/9 167/4<br>177/9 180/11 181/5<br>181/16 186/3 186/5<br>192/5 192/24 193/6<br>195/15 196/19 196/19<br>200/8 200/13 200/15<br>201/13 202/5 205/19<br>206/10 206/13 208/9<br>211/18 212/3 217/7 | <b>motivates [1]</b> 79/7  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   | <b>misinterpreted [1]</b><br>116/13  | <b>morning [9]</b> 1/3 1/4<br>1/5 80/16 116/21  | <b>motivating [1]</b> 78/18  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>Middle East [1]</b><br>165/24   | <b>mismatch [2]</b> 96/9<br>96/11  |   | <b>motivation [5]</b> 70/25<br>76/12 85/17 113/14<br>140/10  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle-income [1]</b><br>158/13   | <b>misreading [1]</b> 76/1   |   | <b>motorbike [1]</b> 83/22   |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 | <b>miss [2]</b> 190/1 190/5  |   | <b>mounting [1]</b> 58/2   |
| <b>memory [2]</b> 110/4<br>163/25   | <b>mid-February [3]</b><br>10/24 18/19 203/25  | <b>missed [4]</b> 26/16<br>40/8 44/7 152/20  |   | <b>move [18]</b> 18/15<br>22/24 29/17 36/15<br>53/10 57/10 57/17<br>87/20 91/6 91/7 96/15<br>128/25 136/23 148/25<br>149/6 215/1 218/1<br>218/6  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>mid-March [2]</b> 162/5<br>197/13   | <b>missing [3]</b> 194/11<br>200/25 223/1  |   | <b>moved [4]</b> 11/8 11/19<br>48/10 54/2  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   | <b>mission [1]</b> 184/5   |   | <b>moving [3]</b> 12/12<br>15/23 47/1  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>Middle East [1]</b><br>165/24   | <b>mistake [1]</b> 33/20   |   | <b>MP [1]</b> 207/17   |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle-income [1]</b><br>158/13   | <b>misunderstanding [1]</b> 10/1   |   | <b>MPs [1]</b> 63/24   |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 | <b>misunderstandings [1]</b> 179/18  |   | <b>Mr [44]</b> 1/3 50/12<br>53/13 53/17 55/3<br>57/15 72/18 73/21<br>74/4 90/5 90/10 90/13<br>90/15 90/25 91/2<br>93/11 101/7 101/19<br>102/7 105/6 105/11<br>106/7 106/8 109/7<br>109/8 109/9 110/11<br>110/12 113/6 113/7<br>113/8 116/7 155/4<br>178/6 207/15 219/4<br>219/9 219/14 219/16<br>223/5 224/9 224/11<br>224/13 224/25 |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>mid-February [3]</b><br>10/24 18/19 203/25  | <b>misunderstood [2]</b><br>25/13 116/13   |   | <b>Mr Amlot [3]</b> 101/7<br>101/19 102/7  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>mid-March [2]</b> 162/5<br>197/13   | <b>misuse [1]</b> 55/13  |   | <b>Mr Dayle [4]</b> 93/11<br>109/8 110/12 113/6  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   | <b>mitigate [4]</b> 79/23<br>100/7 162/9 162/12  |   | <b>Mr Halpern [4]</b> 72/18<br>73/21 105/6 105/11  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>Middle East [1]</b><br>165/24   | <b>mitigation [2]</b> 58/3<br>58/8   |   | <b>Mr Hancock [5]</b><br>90/10 90/15 90/25   |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle-income [1]</b><br>158/13   | <b>mix [1]</b> 94/22   |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 | <b>mixed [1]</b> 106/2   |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>mid-February [3]</b><br>10/24 18/19 203/25  | <b>Mm [5]</b> 119/7 120/24<br>121/19 134/13 147/3  |   |  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>mid-March [2]</b> 162/5<br>197/13   | <b>Mm-hm [5]</b> 119/7<br>120/24 121/19 134/13<br>147/3  |   |  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   | <b>mode [1]</b> 138/5  |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>Middle East [1]</b><br>165/24   | <b>model [3]</b> 78/24<br>216/14 216/16  |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle-income [1]</b><br>158/13   | <b>modeller [1]</b> 15/2   |   |  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 | <b>modelling [11]</b> 31/17<br>32/6 137/8 137/19<br>175/15 200/2 201/11  |   |  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>mid-February [3]</b><br>10/24 18/19 203/25  |  |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>mid-March [2]</b> 162/5<br>197/13   |  |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   |  |   |  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>Middle East [1]</b><br>165/24   |  |   |  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle-income [1]</b><br>158/13   |  |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 |  |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>mid-February [3]</b><br>10/24 18/19 203/25  |  |   |  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>mid-March [2]</b> 162/5<br>197/13   |  |   |  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   |  |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>Middle East [1]</b><br>165/24   |  |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle-income [1]</b><br>158/13   |  |   |  |
| <b>men [3]</b> 13/11 14/25<br>111/13  | <b>might [47]</b> 5/5 7/22<br>15/12 17/14 17/18<br>26/16 26/18 39/11<br>40/17 40/24 45/5 47/6<br>53/15 56/24 69/9<br>69/19 70/10 70/21<br>72/10 72/13 72/18<br>76/16 76/22 79/21<br>80/25 83/21 88/6<br>91/17 91/21 115/11<br>115/20 130/3 133/16<br>151/14 151/25 154/8<br>167/19 176/4 183/1<br>188/25 193/2 201/22<br>202/3 202/17 205/6<br>206/20 211/16 |  |   |  |
| <b>mention [6]</b> 2/12<br>27/17 52/4 52/5<br>185/23 221/9  | <b>mid-February [3]</b><br>10/24 18/19 203/25  |  |   |  |
| <b>mentioned [24]</b> 19/8<br>22/7 23/8 31/23 32/15<br>40/20 48/18 56/15<br>62/4 63/8 67/4 67/20<br>70/8 85/1 87/2 90/23<br>97/25 126/3 138/15<br>149/25 158/8 170/9<br>210/4 220/3 | <b>mid-March [2]</b> 162/5<br>197/13   |  |   |  |
| <b>memory [2]</b> 110/4<br>163/25   | <b>middle [7]</b> 17/4<br>102/23 149/3 158/13<br>163/8 165/24 194/11   |  |   |  |
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| <b>Mr Hancock... [2]</b><br>91/2 207/15<br><b>Mr Keith [2]</b> 178/6<br>219/9<br><b>Mr Metzger [5]</b> 113/7<br>116/7 219/4 219/14<br>223/5<br><b>Mr O'Connor [2]</b> 1/3<br>57/15<br><b>Mr Poole [2]</b> 90/5<br>90/13<br><b>Mr Wainwright [4]</b><br>50/12 53/13 53/17<br>55/3<br><b>Mr Wilcock [2]</b> 106/7<br>109/7<br><b>Ms [11]</b> 93/13 93/15<br>93/16 106/6 116/25<br>214/4 214/5 218/2<br>219/3 224/7 224/23<br><b>Ms Cecil [1]</b> 116/25<br><b>Ms Morris [3]</b> 93/13<br>93/15 106/6<br><b>Ms Stone [3]</b> 214/4<br>218/2 219/3<br><b>much [58]</b> 17/23 18/2<br>25/1 34/11 53/23<br>53/24 55/8 56/2 69/11<br>69/20 89/13 90/6 93/7<br>96/24 103/1 105/15<br>106/3 109/5 110/17<br>112/19 116/5 116/9<br>116/15 116/17 117/23<br>122/6 126/6 126/11<br>126/12 137/5 137/6<br>143/17 146/16 147/20<br>154/10 154/10 154/16<br>154/25 155/2 164/8<br>164/14 175/19 177/9<br>177/15 179/8 180/9<br>184/1 193/2 193/6<br>196/19 202/5 202/22<br>205/14 205/24 206/10<br>214/1 223/3 223/11<br><b>multidisciplinary [2]</b><br>13/1 175/13<br><b>multiple [4]</b> 48/19<br>50/7 78/4 99/16<br><b>multiplication [1]</b><br>79/4<br><b>multitude [1]</b> 183/3<br><b>must [7]</b> 26/13 44/19<br>46/1 46/8 83/2 186/9<br>213/8<br><b>my [91]</b> 1/4 3/17 5/1<br>5/16 6/25 9/24 18/6<br>18/12 23/11 23/15<br>26/11 39/1 39/6 43/7<br>44/1 46/1 48/7 50/25<br>53/25 54/3 56/3 57/10<br>57/16 62/19 63/22<br>71/4 75/4 76/1 76/14 | <b>my Lady [23]</b> 1/4<br>57/10 57/16 93/8<br>93/12 106/5 109/10<br>110/14 113/5 113/9<br>116/6 117/1 154/22<br>168/9 183/14 214/2<br>214/6 218/7 219/2<br>219/6 219/8 223/4<br>223/6<br><b>myself [5]</b> 64/11<br>127/11 147/12 172/14<br>181/23   | <b>N</b><br><b>name [9]</b> 1/8 6/8 6/13<br>11/14 35/14 35/17<br>61/23 155/14 155/15<br><b>names [3]</b> 6/5 23/16<br>29/19<br><b>narrow [1]</b> 165/21<br><b>narrowed [1]</b> 166/11<br><b>nation [1]</b> 146/14<br><b>national [8]</b> 8/11<br>118/16 160/24 160/25<br>183/23 188/7 194/3<br>194/4<br><b>nations [4]</b> 108/2<br>108/3 108/7 108/11<br><b>natural [1]</b> 159/21<br><b>naturally [1]</b> 211/20<br><b>nature [8]</b> 19/5<br>163/16 165/11 166/16<br>178/10 188/3 201/21<br>209/22<br><b>nebulous [1]</b> 70/12<br><b>necessarily [6]</b> 18/1<br>45/21 69/21 74/22<br>126/7 181/11<br><b>necessary [4]</b> 29/12<br>61/4 130/21 175/8<br><b>need [40]</b> 1/12 5/17<br>6/18 17/14 20/4 35/3<br>39/11 42/2 44/2 47/12   |   |  |

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| 16/10 16/13 17/15           | 149/18 175/25                  | 5/18 7/9 7/20 7/23          | <b>ONS [1]</b> 188/2          | 26/6 26/17 30/7 30/23        |
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| 69/20 82/18 106/23          | 114/19 223/21                  | 48/12 49/25 50/3            | 93/2 131/6 174/10             | 99/21 100/7 100/19           |
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| 147/1 149/9 157/17          | <b>odds [1]</b> 105/14         | 63/16 65/18 65/24           | <b>operation [1]</b> 215/21   | 129/3 130/2 133/1            |
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| 212/11 212/12 219/7         | <b>offered [1]</b> 102/7       | 98/22 99/2 105/2            | <b>operationally [1]</b>      | 175/18 178/21 180/25         |
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| <b>nursing [1]</b> 211/19   | 212/22                         | 157/21 159/12 163/16        | 142/10 145/11 182/12          | 152/12 199/6                 |
|                             | <b>officers [1]</b> 182/1      | 164/2 164/9 165/4           | 199/10                        | <b>our [59]</b> 1/4 9/15     |
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|                             | <b>officio [2]</b> 2/16 3/9    | 185/20 188/19 188/21        | <b>opt [2]</b> 16/20 16/22    | 39/12 40/3 40/25             |
|                             | <b>often [17]</b> 9/13 15/25   | 188/24 192/9 193/5          | <b>opted [2]</b> 16/21        | 45/13 63/3 67/25 85/7        |
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| <b>sentence [6]</b> 8/13<br>68/2 83/5 106/16<br>107/15 107/21  | <b>seven days [1]</b><br>220/21   | <b>showing [3]</b> 95/9   | <b>Simon [1]</b> 90/24  | <b>social [34]</b> 13/10<br>13/13 68/3 74/11<br>74/17 77/23 81/7<br>81/20 82/1 82/24<br>93/22 94/20 95/17<br>99/20 100/25 101/9<br>101/11 101/16 102/8<br>107/9 120/17 152/11<br>153/7 154/6 173/25<br>174/8 174/16 174/19<br>199/7 199/11 207/21<br>210/23 212/24 212/25 |
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