

Wednesday, 22 January 2025

(10.00 am)

**LADY HALLETT:** Mr Keith.

**MR KEITH:** Good morning, my Lady. The two witnesses this morning are, please, Professor Stephen Evans and Professor Daniel Prieto-Alhambra, if they could be sworn.

**PROFESSOR STEPHEN EVANS (sworn)**

**PROFESSOR DANIEL PRIETO-ALHAMBRA (affirmed)**

**Questions from LEAD COUNSEL TO THE INQUIRY for MODULE 4**

**MR KEITH:** My Lady, if it meets with your approval,

I propose to call and deal in detail with Professor Stephen Evans' report first because he deals primarily with the systems and processes to do with safety. But where we get to areas on which Professor Prieto-Alhambra has opined, I will bring him into the forensic debate, and then we will deal with the majority of Professor Prieto-Alhambra's report after that.

So perhaps I could commence with asking you both to identify yourselves and then we'll deal with your qualifications and expertise.

For the record, Professor Evans, could you give us, please, your full name.

**PROFESSOR EVANS:** Stephen James Weston Evans.

1

Tropical Medicine to become head of the epidemiology unit at the UK Medicines Control Agency, now the MHRA. You were an honorary professor of medical statistics at the London School of Hygiene and Tropical Medicine, as well as LHMC -- I'm sorry, I think I referred to LHMC as the London School of Hygiene and Tropical Medicine, but it is in fact the London Hospital Medical College.

You became professor of pharmacoepidemiology at the London School of Hygiene. You were on a number of EU committees on medicine safety between 2006 and 2018, a member of the WHO Global Advisory Committee on Vaccine Safety, chair of the Royal Statistical Society Medical Section and a host of other qualifications.

Importantly, for the purposes of the subject matter of your report, did you also have considerable involvement in the OpenSAFELY data programme, the collaboration from 2020, and also, during the course of the pandemic, did you give some limited advice to the Vaccine Effectiveness Expert Panel in the Cabinet Office and the vaccine effectiveness expert working group, organised by Public Health England?

**PROFESSOR EVANS:** I did.

**Q.** I think you participated as a volunteer in one of the trials, is that right?

**PROFESSOR EVANS:** I did, in the AstraZeneca trial.

3

**Q.** And Professor Prieto-Alhambra, your full name, please.

**PROFESSOR PRIETO-ALHAMBRA:** Professor Daniel Prieto-Alhambra.

**Q.** Thank you very much both for the provision of your expert reports, in your case, Professor Evans, dated 6 November 2024, and in your case, Professor Prieto-Alhambra, September 2024.

Both are very significant, lengthy documents, and we're very grateful to you for the evident hard work and time that has gone into those reports.

May we take it that both reports are the product of your own work, although, as we'll see in a moment, you've been greatly assisted by a number of other professionals and experts, and that the contents are true. I'm sure they are.

Dealing with your qualifications firstly, Professor Evans, your first degree was from Keele University in physics and chemistry, you have a long list of post-graduate qualifications but you were, from 1979, a senior lecturer, then the reader, then professor of medical statistics at LHMC, the London School of Hygiene and Tropical Medicine (sic). You were a member of the working party of the Royal Statistical Society on statistics and drug regulation.

You then left the London School of Hygiene and

2

**Q.** And are you also, as it happens, a convener of the statistics expert group at the Infected Blood Inquiry under Sir Brian Langstaff?

**PROFESSOR EVANS:** Yes.

**Q.** Professor Prieto-Alhambra, you, is this right, are an expert in pharmacoepidemiology. What is the discipline of pharmacoepidemiology, succinctly?

**PROFESSOR PRIETO-ALHAMBRA:** Yeah, it's a specialty of epidemiology where we study the use, the safety, and the benefits of medicines and vaccines in the general population or in wide populations.

**Q.** And is the element of epidemiology in pharmacoepidemiology reflective of the fact that you're dealing with the impact of medicines and vaccines, and their safety at population level? You're looking at trends, you're looking at the reality of the impact of the medicines and the vaccines.

**PROFESSOR PRIETO-ALHAMBRA:** Indeed, that is right. And also the use of observational data, typically, rather than randomised control trials.

**Q.** Have you trained and practised for many years as a medical doctor both in general practice, also in musculoskeletal sciences and rheumatology, and therefore you've got considerable experience of the clinical diagnosis and management of the some of the conditions

4

1 upon which you opine in your report?

2 **PROFESSOR PRIETO-ALHAMBRA:** That is correct.

3 **Q.** You very properly raised with the Inquiry the fact that,

4 during the pandemic, you spent some time supervising

5 a PhD student who was embedded within the UK Health

6 Security Agency. You also did some consultancy work

7 providing AstraZeneca with general advice on how to

8 design observational studies for the monitoring of

9 vaccine safety, but you are at pains to point out, quite

10 rightly, that you didn't conduct any studies for them or

11 studies funded by them in relation to Covid-19 vaccines,

12 and you obviously, therefore, weren't involved in any

13 shape or form in AstraZeneca's take on the production,

14 manufacture, authorisation of their Oxford-AstraZeneca

15 vaccine or the issue of TTS or thrombocytopenia and so

16 on.

17 **PROFESSOR PRIETO-ALHAMBRA:** That is all correct.

18 **Q.** In your case, Professor Prieto-Alhambra, have you been

19 greatly assisted by a number of co-authors, all of whom,

20 I think, are at the Nuffield Department of Orthopaedics,

21 Rheumatology and Musculoskeletal Sciences at Oxford?

22 Dr Annika Jödicke, Dr Edward Burn, Dr Xie and Dr Li.

23 They have all helped you in relation to some parts of

24 your report and provided information and data, but the

25 report is your work?

5

1 not proceed through to clinical trials?

2 **PROFESSOR EVANS:** Very large numbers.

3 **Q.** And in very rough terms, what is the purpose of the

4 pre-clinical trial process? Does it focus on safety?

5 Does it focus on whether or not the product works?

6 Whether or not it has unexpected side effects? What is

7 the purpose of the laboratory angle?

8 **PROFESSOR EVANS:** The laboratory angle is really to

9 understand the way it is likely to work in the human

10 body, and in particular, what kind of dose of the

11 product is likely to -- what sort of dose range among

12 the vast possibilities. It doesn't really look at

13 efficacy or safety at that stage.

14 **Q.** And, therefore, only if the tests are satisfactorily

15 completed at that stage may the product then be tested

16 on humans?

17 **PROFESSOR EVANS:** Yes, they will look in animals for things

18 like cancers that might only take a few weeks to develop

19 in an animal, whereas in a human being it might take

20 tens of years.

21 **Q.** And then the clinical study phase, does that comprise

22 three phases, in fact, pre-authorisation, phases I, II

23 and III?

24 **PROFESSOR EVANS:** Yes, those are labels that -- there are

25 overlaps between them.

7

1 **PROFESSOR PRIETO-ALHAMBRA:** Indeed, and with the review of

2 the literature, which was substantial.

3 **Q.** With the review of?

4 **PROFESSOR PRIETO-ALHAMBRA:** The literature, the published

5 evidence.

6 **Q.** Ah yes, we'll come to that in a moment.

7 Yes, there we are.

8 So we're going to start, please, Professor Evans,

9 with your report because you focus on the systems and

10 the processes and we need to address those first and get

11 them in our minds. And we are going to start with the

12 issue of trials.

13 The scientific process of trialling vaccines starts

14 in the laboratory, does it not, with what are known as

15 in vitro studies? What are they? Are they clinical

16 trials carried out on people or are they laboratory

17 tests?

18 **PROFESSOR EVANS:** They're laboratory tests.

19 **Q.** And can a manufacturer, hoping to produce a medicine,

20 whether it's a vaccine or not, proceed to the clinical

21 trials without having passed successfully through the

22 in vitro, the laboratory aspect of the trial process?

23 **PROFESSOR EVANS:** They have to go through that, and through

24 animal studies as well.

25 **Q.** And do many products, many studies end at that stage and

6

1 **Q.** Is phase IV a term given to such trials as may be

2 conducted post-authorisation --

3 **PROFESSOR EVANS:** Yes.

4 **Q.** -- focusing of course on clinical use?

5 **PROFESSOR EVANS:** Yes.

6 **Q.** Because post-authorisation the medicine will be in

7 general use or in use, and therefore can be given to

8 patients?

9 **PROFESSOR EVANS:** Yes.

10 **Q.** All right. So just focusing, then, on phases I, II, and

11 III, could you broadly delineate between them, please,

12 Professor? Phase I, what does it focus on?

13 **PROFESSOR EVANS:** Phase I is going to focus on whether we've

14 got the dose right, usually in healthy volunteers,

15 particularly for drugs, you will not be using people who

16 have got the disease that you're targeting, but for

17 vaccines, healthy people are your target. So you test

18 whether the dose seems to cause a really nasty adverse

19 effect or not, because you won't necessarily know that

20 beforehand.

21 **Q.** Phase II?

22 **PROFESSOR EVANS:** Phase II, you're beginning to -- you're

23 moving up the scale and you're beginning to be able to

24 understand whether the drug has the effect or the

25 vaccine has the effect you expect it to have, and you

8

1 will generally be measuring biochemical things within  
 2 the body's response, the so-called immune response to  
 3 the vaccine, to see whether that is happening in the way  
 4 you expect it to in phase II. And again, ensuring that  
 5 you narrow down the dose that -- you will have started  
 6 with a potentially very wide dose range, and you  
 7 gradually narrow it down to the optimal dose range.

8 **Q.** So phase II proceeds on the premise that the vaccine has  
 9 broadly the desired effect, but it's a question of  
 10 measuring more precisely its impact --

11 **PROFESSOR EVANS:** Yes, you're --

12 **Q.** -- particularly for the purposes of deciding dose?

13 **PROFESSOR EVANS:** You're measuring the effect of biochemical  
 14 things happening, the immune response in the body,  
 15 rather than the response to the virus.

16 **Q.** At the phase II stage, what size, in general terms,  
 17 might the participant group be?

18 **PROFESSOR EVANS:** Typically in the tens to perhaps in the  
 19 hundreds.

20 **Q.** And in all the phases, is the closest attention paid, of  
 21 course, to the consequences of providing the vaccine or  
 22 medicine -- and I emphasise the vaccine is just form of  
 23 medicine -- to the participant?

24 **PROFESSOR EVANS:** Yes.

25 **Q.** So these are very, very closely scrutinised procedures?

9

1 that randomisation a reflection of the giving on  
 2 a random basis of the proposed medicine to some  
 3 participants, but a placebo or a control to others?

4 **PROFESSOR EVANS:** Yes, the idea is that you can be certain,  
 5 within probability limits, that two groups, or more than  
 6 two groups, are the same in every respect, whether you  
 7 can measure those things or not.

8 **Q.** And so the outcome, the figures, the results, will be  
 9 indicative of the impact, they will reflect the impact  
 10 of the proposed medicine?

11 **PROFESSOR EVANS:** Yes.

12 **Q.** Because that is the only basis upon which there can be  
 13 a difference of outcomes?

14 **PROFESSOR EVANS:** Exactly.

15 **Q.** And how important is it that a randomised controlled  
 16 trial approach is applied in terms of eliminating bias  
 17 or rogue figures, or erroneous outcomes?

18 **PROFESSOR EVANS:** It is absolutely vital because otherwise  
 19 you don't know whether the people who get vaccinated are  
 20 the same, either in their characteristics or in their  
 21 behaviour, as those who are unvaccinated. So when I was  
 22 a participant in the trial, I didn't know what I was  
 23 getting, and I thought I was getting the placebo because  
 24 I didn't have any strong reactions. In fact I got the  
 25 real thing. But had I known what it was, I might have

11

1 **PROFESSOR EVANS:** Yes.

2 **Q.** Phase III, what is the difference with that? What  
 3 does it focus on?

4 **PROFESSOR EVANS:** For vaccine trials, you then will be  
 5 interested in whether people get the infection that  
 6 you're trying to prevent, so if it's Covid-19, you  
 7 actually test them to see whether they get that, rather  
 8 than simply whether their body is producing antibodies.

9 **Q.** So whether it works in practice?

10 **PROFESSOR EVANS:** Whether it works in the way that will make  
 11 a difference to the diseases in the population.

12 **Q.** And is safety and the possibility of side effects  
 13 something that is even more closely scrutinised in  
 14 phase III?

15 **PROFESSOR EVANS:** Yes, I would say they're probably of equal  
 16 scrutiny.

17 **Q.** And in terms of participant numbers, what sizes may  
 18 a phase III trial amount to?

19 **PROFESSOR EVANS:** In drugs it will still typically be in the  
 20 hundreds or perhaps into the thousands but with  
 21 vaccines, particularly more recent vaccines, it's in the  
 22 thousands and ten thousands.

23 **Q.** You refer repeatedly throughout your report to what is  
 24 elsewhere known as the gold standard of trial  
 25 procedures, namely a randomised controlled trial. Is

10

1 changed my behaviour.

2 **Q.** And you might have misreported perhaps even your  
 3 symptoms or any kind of reaction?

4 **PROFESSOR EVANS:** I might have behaved in different ways.

5 **Q.** That was a blind trial, because you didn't know whether  
 6 you were receiving the vaccine or a placebo. What is  
 7 a double-blind trial?

8 **PROFESSOR EVANS:** A double-blind trial is where the  
 9 participant and the investigator giving it to them do  
 10 not know.

11 **Q.** So who knows whether each participant is receiving --

12 **PROFESSOR EVANS:** It will be a statistician like me who has  
 13 hidden away the list of which treatments it is, and the  
 14 pharmacist or the manufacturer who has got the code that  
 15 says, "Bottle number 23 has the real thing".

16 **Q.** I now simply can't recall whether I've asked you to  
 17 opine on the general size of phase III trials.

18 **PROFESSOR EVANS:** Yes.

19 **Q.** I have?

20 **LADY HALLETT:** Different for drugs and different for  
 21 vaccines.

22 **MR KEITH:** Thank you very much.

23 In the context of the three Covid-19 UK vaccines  
 24 that we're focusing on, and they are the AstraZeneca --  
 25 Oxford-AstraZeneca, the Pfizer BioNTech and the Moderna

12

1 vaccines only, were there phase III trials in the  
2 majority or exclusively randomised controlled trials?

3 **PROFESSOR EVANS:** Yes.

4 **Q.** Were they double-blind or blind?

5 **PROFESSOR EVANS:** They were in some instances double-blind,  
6 in some instances single-blind. That was that the  
7 investigator did know in principle what the -- whether  
8 it was the real vaccine or a control being given.

9 **Q.** With that size of phase III trial in mind, why can they  
10 not be even larger?

11 **PROFESSOR EVANS:** The problem is that you will run the trial  
12 and generally there will be a data monitoring board that  
13 will look at the key outcomes. In the phase III trial  
14 it will be clinical infection. And you will ethically  
15 need to stop the trial, or stop recruitment to the  
16 trial, when you have convincing evidence of efficacy,  
17 because otherwise, you are subjecting your control group  
18 to no treatment or a treatment that is -- we know would  
19 be ineffective, when we know that there is an effective  
20 alternative. And that is regarded by most people as  
21 unethical.

22 **Q.** Essentially, it is unfair on the participant to oblige  
23 them to continue to take part in a trial that's ongoing  
24 when it's obvious that the vaccine which is being  
25 trialled can actually provide a real-world solution to

13

1 evidence that there could be a problem, to investigate  
2 things more carefully, and the data monitoring board  
3 will be an adviser to the investigators who don't know  
4 what the results are showing, saying is it efficacious  
5 or not? Is it ethical to continue randomising new  
6 patients to this trial?

7 **Q.** And what sort of people generally make up the data and  
8 safety monitoring board? You said it's independent, but  
9 are --

10 **PROFESSOR EVANS:** They're independent but they are typically  
11 about five people, maybe six people. They will  
12 generally have a very experienced clinician who is chair  
13 of it, but occasionally, it can be a statistician who is  
14 chair of it. I have chaired data monitoring committees  
15 in the past, but you require somebody who, as  
16 Professor Chris Whitty said, it's important to get the  
17 people right, and getting the people right is a key  
18 component. So you have people with experience in  
19 vaccines but you will also usually have a statistician  
20 who can help you with the numbers.

21 **Q.** You also refer to a different body, a trial steering  
22 committee, which appears to conduct the trial or be  
23 responsible for the conduct of the trial. By contrast,  
24 is it staffed by not just independent scientists but  
25 investigators and representatives of the manufacturer?

15

1 the terrible pathogenic disease -- (overspeaking) --

2 **PROFESSOR EVANS:** That's a subtly different point about the  
3 continuation, it's a question of whether you recruit new  
4 people. Is my new person going to come in and be likely  
5 to have the placebo when there is an effective  
6 treatment? And that would be regarded as unethical,  
7 generally.

8 **Q.** We're going to turn a little later in more detail to the  
9 very important issue of whether it is at all likely that  
10 very rare, serious side effects will be revealed by  
11 a trial consisting of participants to be measured in the  
12 tens of thousands, but I will come back to that.

13 In your report you set out much about the way in  
14 which major trials are conducted, and you refer to the  
15 existence of something called a data and safety  
16 monitoring board. You've already referred to it already  
17 this morning. What is that?

18 **PROFESSOR EVANS:** It's a group of independent people who  
19 will have access to the data that nobody else has access  
20 to, and will look at the results and say, for example,  
21 is there an adverse effect occurring with the vaccine  
22 that is occurring at such a rate that it suggests  
23 a significant harm? And if that were a serious adverse  
24 effect, then they may want to entirely stop the trial.  
25 They may pause the trial if there is just slight

14

1 **PROFESSOR EVANS:** Yes.

2 **Q.** And is it that body, the trial steering committee,  
3 which, as it says on the tin, steers the progress of the  
4 trial and hopefully to its conclusion?

5 **PROFESSOR EVANS:** (No audible response).

6 **Q.** As a general rule, indeed as a principle, will there  
7 ever be a representative from the manufacturer, the  
8 investigator or somebody else in the company, present at  
9 the data and safety monitoring board when that board is  
10 discussing matters such as unblinded data, ie who gets  
11 the placebo or the vaccine, and talking about highly  
12 sensitive issues concerning the -- (overspeaking) --

13 **PROFESSOR EVANS:** I cannot say that that never happens but  
14 I'd never participate in a board in which the  
15 manufacturer was present. It must be extremely rare if  
16 it does occur. I can't say never.

17 **Q.** And the presence and the role of the data and safety  
18 monitoring board is reflective, is it not, of the  
19 extraordinary importance which is placed on safety and  
20 monitoring safety, and observing the possibility of side  
21 effects in the course of the trial process?

22 **PROFESSOR EVANS:** Yes.

23 **Q.** Right. Elsewhere in your report, page 31, in fact, but  
24 we needn't go to it, you refer to the fact that  
25 randomised trials for the Covid vaccines were conducted

16

1 in many countries and many regulatory authorities were  
2 involved. The three Covid-19 UK vaccines were trialled  
3 in some cases in the United Kingdom and abroad, and  
4 I think in one of the cases exclusively abroad?

5 **PROFESSOR EVANS:** (Witness nodded).

6 **Q.** But between, as between the trials conducted in the  
7 United Kingdom and those conducted abroad, were there  
8 any significant differences in terms of the structures  
9 that were applied, the presence of a data and safety  
10 monitoring board, the use of blind and double blind  
11 randomised controlled trials, and the safety set-up for  
12 the regulation of those trials?

13 **PROFESSOR EVANS:** No, they're all done in exactly the same  
14 way according to a very rigidly set-out protocol. It is  
15 the different centres that exist within a single trial.

16 **Q.** And we'll hear a bit more from Professor Prieto-Alhambra  
17 a bit later, but were in fact some of the thresholds,  
18 some of the scientific requirements, for example, the  
19 degree of confidence in the efficacy of a vaccine, the  
20 way in which the products were to be trialled and  
21 investigated, agreed between certain western European,  
22 American and Canadian regulators?

23 **PROFESSOR EVANS:** Yes, international regulators agree.

24 **Q.** International regulators. So the whole process of the  
25 safety monitoring, the trialling and the authorisation

17

1 level, so that you get enough people who, on the control  
2 group, sadly, will get the infection. And you will then  
3 hope that the people on the vaccine will not get it, and  
4 you need to have sufficient numbers that say I've got  
5 convincing evidence that there is a real difference  
6 here, and that the vaccine is effective.

7 **Q.** And in your professional opinion, were the numbers  
8 involved in each of these three vaccines at the  
9 requisite level?

10 **PROFESSOR EVANS:** Absolutely.

11 **Q.** Efficacy. The effectiveness of a vaccine.

12 Plainly, there is little point in developing and  
13 manufacturing a vaccine that is safe but not effective?

14 **PROFESSOR EVANS:** Absolutely.

15 **Q.** It serves no purpose. At which part of the clinical  
16 trial process is efficacy generally determined?

17 **PROFESSOR EVANS:** For example, in the trial I was involved  
18 in, then every week I had to take a swab from my throat  
19 and my nose and send it in the post to a laboratory to  
20 see whether I had had Covid infection. In other cases,  
21 some of the trials would only do that for people who  
22 felt ill and who might have Covid and so you had to  
23 record whether somebody got the infection or not, or  
24 whether, in the other trials, it was a clinically  
25 relevant infection.

19

1 of all these vaccines was very much an international  
2 enterprise?

3 **PROFESSOR EVANS:** Very much.

4 **Q.** Regulated nationally, but based upon agreed structures,  
5 approaches, standards and thresholds internationally?

6 **PROFESSOR EVANS:** Yes.

7 **Q.** All right. Elsewhere in your report, on the subject of  
8 trials, you refer to the trial sizes and you make the  
9 point, and you've already made it this morning, that  
10 once efficacy has been shown, continuing to recruit  
11 sufficient numbers would be unethical.

12 What determines the precise size of the trial in  
13 respect of a particular medicinal product or vaccine?  
14 We note that although all trials were, I think, between  
15 20 and 30,000 at phase III level, some of them had more  
16 trials in more countries than others. What determines  
17 that?

18 **PROFESSOR EVANS:** There are practical considerations as to  
19 how many countries are involved but what you want to  
20 ensure, in terms of vaccine trials, is in phase III in  
21 particular, you're trying to prevent the disease. So if  
22 the disease is not occurring, if the virus is not  
23 circulating in the country, then you don't want to do  
24 a trial in that country. You want to do the trial in  
25 the place where the virus is circulating at a high

18

1 **Q.** Presumably, a vaccine as with many medicines, will have  
2 an impact on the body at a number of different levels.  
3 In the context of a vaccine, what a vaccine in general  
4 terms tries to do is to provoke the body into producing  
5 antibodies to fight the infection. But the body's  
6 antibody system is, no doubt, a very complex one.  
7 I think there are B cells, T cells, and any number of  
8 different levels of response. Is that -- is the nature  
9 of that response clinically examined in great deal, as  
10 part of the clinical trial process?

11 **PROFESSOR EVANS:** Yes, and it's important, as you say, that  
12 the vaccine is there to train the body to provide  
13 a means of fighting the virus. A drug doesn't do that.  
14 A drug attacks a virus, or some other element of the  
15 disease, directly. A vaccine does not have an effect  
16 directly on the virus.

17 **Q.** It can't be very straightforward to measure the antibody  
18 response of the human body?

19 **PROFESSOR EVANS:** It's not -- these days, it's not that  
20 difficult.

21 **Q.** It's not that difficult but is there, nevertheless, a  
22 system by which one can say how confident one is as to  
23 the degree of effectiveness or efficacy?

24 **PROFESSOR EVANS:** When you first start with a new vaccine,  
25 you aren't absolutely sure that the antibodies you

20

1 measure will reflect the clinical reality of preventing  
 2 clinical disease. But after you've done a few trials,  
 3 you then find that there are measurements of antibodies  
 4 that will predict the clinical disease, and those are  
 5 the ones that you concentrate on measuring in the  
 6 future.

7 **Q.** And coming back to the issue of what was agreed at the  
 8 international level, was agreement generally reached as  
 9 to the process by which degrees of confidence could be  
 10 expressed or had to be expressed publicly about the  
 11 degree of effectiveness?

12 **PROFESSOR EVANS:** Yes, it's -- (overspeaking) --

13 **Q.** We can see in the paperwork: vaccine X is 80% effective  
 14 with a confidence level of between X and Y?

15 **PROFESSOR EVANS:** Yes, and the idea is that when you didn't  
 16 know anything, you kind of assume that it would be  
 17 similar to a flu vaccine effectiveness, and so most of  
 18 the regulators required at least 50 and possibly even  
 19 60% vaccine efficacy. But you needed to be sure that it  
 20 wasn't below a certain level and in Europe and America  
 21 they had slightly different views on how low the  
 22 uncertainty could be.

23 **Q.** Safety. Conceptually, is safety something that is open  
 24 to objective measurement?

25 **PROFESSOR EVANS:** It's very difficult. Safety is

21

1 **Q.** And is that why there are what is known as  
 2 pre-authorisation safety studies and post-authorisation  
 3 safety studies?

4 **PROFESSOR EVANS:** Yes.

5 **Q.** Because after authority is given, and once the product  
 6 is being rolled out, there is a flood of new and  
 7 important data concerning the clinical use of that  
 8 product in real-world conditions?

9 **PROFESSOR EVANS:** Yes.

10 **Q.** All right. And is that why the post -- it's known as  
 11 the post-authorisation monitoring process, or safety  
 12 process, is so very important?

13 **PROFESSOR EVANS:** Yes.

14 **Q.** I think we've seen somewhere that within two days of the  
 15 rollout of the Pfizer BioNTech vaccine in the  
 16 United Kingdom, there were more vaccines delivered than  
 17 there had been in the entirety of all preceding clinical  
 18 trials?

19 **PROFESSOR EVANS:** Yes, I believe that to be true.

20 **Q.** Right. All medicines, including vaccines, may give rise  
 21 to a side effect, that is to say something that's  
 22 undesirable, not what is intended?

23 **PROFESSOR EVANS:** I know of no effective medicine that does  
 24 not have unwanted effects, usually adverse.

25 **Q.** We've seen in the paperwork references to a number of

23

1 a euphemism, I think, for harm. We can only measure  
 2 harms, and safety is the relative absence of harm. So  
 3 we look for harms. And when we start out, we think  
 4 there will be a certain kind of harm for a vaccine.  
 5 Most people will get a sore arm when they get the  
 6 injection, some will get a headache, some will get  
 7 a slight fever, but you will check very carefully that  
 8 there aren't very many people getting a very high fever,  
 9 39 degrees or 40 degrees, and potentially causing  
 10 serious illness. And so you check very carefully for  
 11 those things.

12 **Q.** So it simply cannot be said of any product, let alone  
 13 a vaccine, it is safe or it is not safe. What is  
 14 required to be done is to analyse the relative safety of  
 15 the product by examining the benefit and comparing it to  
 16 the risk?

17 **PROFESSOR EVANS:** Absolutely. And this also develops over  
 18 time. Our knowledge basically increases. I've talked  
 19 about this as a map, and that we're trying to explore  
 20 the entire territory of the effect of a drug. And at  
 21 first, we only know a little bit about that map, but  
 22 gradually, as we use it more, have bigger trials and  
 23 then start to use it, we will extend our knowledge and  
 24 we'll have mapped the knowledge of that area of the  
 25 drug.

22

1 descriptions and a number of terminological phrases,  
 2 adverse events of special interest, serious adverse  
 3 reactions, adverse effects, adverse reactions, adverse  
 4 drug reactions and suspected unsuspected serious adverse  
 5 effects.

6 You won't, I think, agree with this proposition, but  
 7 by and large we're talking about side effects?

8 **PROFESSOR EVANS:** Yes.

9 **Q.** Right. Coming back to the trial process, if a side  
 10 effect, that is to say something that is not sought,  
 11 it's not what the purpose of the product is, and it's  
 12 undesirable, if it is rare or very rare or extremely  
 13 rare, and the MHRA defines each of those words by  
 14 reference to the statistical likelihood of them  
 15 occurring, one in 10,000 for rare, I think one in  
 16 100,000 for very rare, and fewer than one in 100,000 is  
 17 generally regarded as being extremely rare.

18 If a side effect is rare, very rare or extremely  
 19 rare, is it likely to appear in a trial consisting of  
 20 around 30,000, 40,000, 50,000 participants?

21 **PROFESSOR EVANS:** Simply put, the very rare and extremely  
 22 rare will not be seen, even, in the trials generally,  
 23 unless by chance.

24 **Q.** Because obviously, if a side effect will only appear one  
 25 in every 100,000 cases, a trial of 50,000 will not reach

24

1 that point at which, statistically, the occurrence is  
 2 likely to occur?  
 3 **PROFESSOR EVANS:** Yes. We can say what the probability of  
 4 having one in that 50,000 -- even if it occurs generally  
 5 at one in 100,000, in the 50,000 it might occur, but you  
 6 wouldn't get -- it would be very unlikely that you got  
 7 two occurring in 50,000.  
 8 **Q.** Moreover, and perhaps it's even more difficult  
 9 a concept, if a person takes a vaccine, receives  
 10 a vaccine, and there is then a medical condition that  
 11 becomes apparent, a reddening of the arm, or some  
 12 medical condition, the issue immediately arises as to  
 13 whether or not that appearance is coincidental or was  
 14 caused by the taking of the vaccine, or, I suppose,  
 15 might have been the result of Covid-19 itself, in this  
 16 case, because a person might be infected with Covid  
 17 unknowingly and then be vaccinated. So can you ever  
 18 immediately tell from the mere existence or presence of  
 19 a medical condition that it was necessarily caused by  
 20 the vaccine?  
 21 **PROFESSOR EVANS:** Very difficult indeed, in individual  
 22 cases. And that's why we have a randomised trial in  
 23 which we can have a large number of people, and when  
 24 there is an excess in the vaccinated group and we do the  
 25 statistical analysis on it, we can find that there is

25

1 **Q.** And how long, in general terms, do those sorts of  
 2 reactions or conditions take to appear and disappear?  
 3 **PROFESSOR EVANS:** They take generally from hours to a very  
 4 few days. Generally less than a week.  
 5 **Q.** What can be done about a condition or a reaction that  
 6 may, in the human body, take weeks or months or maybe  
 7 even years to develop and therefore appear?  
 8 **PROFESSOR EVANS:** For weeks and months the trials will go on  
 9 following up people. And even when a trial stops  
 10 recruiting, and as in the case of the AstraZeneca trial  
 11 I was in, the licensed vaccine became available, and  
 12 I asked to be unblinded to see whether I had. But I was  
 13 continued to be followed up for another year or more to  
 14 see whether there were adverse effects of any serious  
 15 nature.  
 16 **Q.** And what can -- or further, or moreover, be done about  
 17 what is known as the multi-hit impact, that is to say  
 18 a person taking a vaccine and suffering already from  
 19 other conditions, comorbidities, perhaps, or being  
 20 subject to environmental factors which means that the  
 21 combination of taking a vaccine, alongside their  
 22 pre-existing or to-be-developed condition externally,  
 23 brings about an unexpected, or unlikely consequence?  
 24 **PROFESSOR EVANS:** These are the very rare reactions that we  
 25 will not be able to study easily in a randomised trial.

27

1 convincing evidence.  
 2 And the randomised trial means that other factors  
 3 that might explain it will not be a possible  
 4 explanation, whereas in observational studies, it is  
 5 much more difficult.  
 6 **Q.** Presumably, there are some responses to the taking of  
 7 a vaccine in particular, which has to be injected, known  
 8 as reactogenicity or conditions associated with  
 9 reactogenicity, which are obviously connected to the  
 10 vaccine because they might be a reddening of the arm or  
 11 having, I don't know, flu-like symptoms within an hour  
 12 of taking the vaccine.  
 13 In relation to that sort of side effect, are they  
 14 generally ever severe or serious?  
 15 **PROFESSOR EVANS:** Almost all vaccines, if they've got as far  
 16 as being trialled in phase III, will not have a high  
 17 rate of the higher, more severe reactions. But that is  
 18 what the phase III trial will be looking for: to check  
 19 that there isn't a high rate of the more severe forms.  
 20 **Q.** Can you say whether or not the vast majority of the side  
 21 effects or reactions to the vaccines in the phase III  
 22 trials were of that type?  
 23 **PROFESSOR EVANS:** Yes.  
 24 **Q.** Mild, momentary, reactogenicity-type reactions?  
 25 **PROFESSOR EVANS:** Yes.

26

1 **Q.** And so what is done about them in terms of  
 2 post-authorisation monitoring?  
 3 **PROFESSOR EVANS:** Well, we need to have very large numbers  
 4 of people vaccinated, and we need to see what their  
 5 health effects are, both immediately after, and also  
 6 months and perhaps years after the vaccine.  
 7 **Q.** And in light of all that, do you conclude for the  
 8 record, at page 16 of your report, that whilst it is  
 9 relatively easy to detect frequent and rapid onset  
 10 adverse effects, it is much more difficult to detect  
 11 rare and serious or delayed side effects?  
 12 **PROFESSOR EVANS:** Yes.  
 13 **Q.** And that is why so much scrutiny must be paid to the  
 14 post-authorisation, post-marketing surveillance as it's  
 15 known.  
 16 Quality. We needn't, I think, spend a great deal of  
 17 time on quality. It's not within the scope, in fact, of  
 18 this module, but presumably a significant part of the  
 19 authorisation in the trial and the checking processes,  
 20 as well as the regulatory scrutiny, focuses on quality.  
 21 So not just effectiveness or safety, but whether or not  
 22 it's good quality.  
 23 **PROFESSOR EVANS:** Yes.  
 24 **Q.** And on that point, does each regulator, and including  
 25 the MHRA, test medicinal products including vaccines for

28

1 their quality?

2 **PROFESSOR EVANS:** Yes.

3 **Q.** And is there a process by which laboratories, in the

4 MHRA's case, the -- what were known as the National

5 Institute for Biological Standards and Control

6 laboratories, test each batch?

7 **PROFESSOR EVANS:** Yes, they're the world leaders in the

8 field.

9 **Q.** Can that testing test for safety and effectiveness or

10 does it -- can it only test for quality?

11 **PROFESSOR EVANS:** It can only test for quality but some

12 aspects of the quality will lead to adverse effects.

13 Impurities may well lead to infections.

14 **Q.** Just give us some idea of the scale of this, please,

15 Professor. How big is a batch? How many doses does

16 a batch have?

17 **PROFESSOR EVANS:** Well, with vaccines, a batch is made as

18 a biological process rather than a chemical process, and

19 so they're rather variable in size. I'm not an expert

20 in that field but I would understand that typical

21 batches will have between a few thousand doses and a few

22 hundred thousand doses. It doesn't have millions of

23 doses generally, nor does it have tens or hundreds, but

24 it's thousands to tens of thousands, and probably

25 typically, I would have thought, about 50,000 doses.

29

1 across the world, by any number of different regulators?

2 **PROFESSOR EVANS:** They may well have been, yes.

3 **Q.** The authorisation process, please. All countries, by

4 and large -- well, I've just detracted from my own --

5 departed from my own question. Do most countries

6 regulate the marketing and supply of medicines?

7 **PROFESSOR EVANS:** Yes.

8 **Q.** In the case of the United Kingdom, and it's the whole of

9 the United Kingdom, is it the MHRA?

10 **PROFESSOR EVANS:** Yes.

11 **Q.** The MHRA is nominally part of government, but is it in

12 fact an independent regulator?

13 **PROFESSOR EVANS:** I think they would fiercely --

14 **Q.** They would object to that description, would they?

15 **PROFESSOR EVANS:** -- object to the idea that they were part

16 of government. They are --

17 **Q.** They are part of the state, maybe?

18 **PROFESSOR EVANS:** They are part of the state but they are

19 very much independent.

20 **Q.** They -- I think, actually, nominally, they regard

21 themselves as being part of the DHSC, but yes --

22 **PROFESSOR EVANS:** Yes, administratively they come under the

23 Department of Health, but this is a separation of

24 powers --

25 **Q.** So operationally --

31

1 But it may be rather larger.

2 I also understand, but I'm -- as I say, I'm not an

3 expert in that area, but as the experience with the

4 manufacturing process improves, then the batch size may

5 become steadily larger.

6 **Q.** Do you understand, and there is clear evidence that the

7 MHRA's laboratories test every single batch, that the

8 batches that are tested are the product of the same

9 manufacturing process in respect of each vaccine? So if

10 you test every batch, you haven't got a position in

11 which half the batches are being made by an offshore

12 different manufacturing process than the other half?

13 **PROFESSOR EVANS:** They're meant to be made under exactly the

14 same process. But it's a biological process and that's

15 why particularly with vaccines it's important to check

16 their quality.

17 **Q.** And presumably the batch testing is something which is

18 also open to international regulation and agreement and

19 scrutiny, and therefore the MHRA's processes for batch

20 testing would be very much aligned with the near

21 identical or very similar processes being conducted by

22 other regulators?

23 **PROFESSOR EVANS:** Yes.

24 **Q.** Does it follow that the UK Covid-19 vaccines would

25 therefore have been tested, because they were rolled out

30

1 **PROFESSOR EVANS:** Their operation and their powers are

2 independent of government.

3 **Q.** Yes. And in the case of the UK Covid-19 vaccines, are

4 you aware of how they ramped up the number of staff and

5 the scope of their functions and what they were doing in

6 order to be able to deal with the unprecedented

7 authorisation process?

8 **PROFESSOR EVANS:** Yes.

9 **Q.** You've already mentioned, along the way, something about

10 the skill and the standard of the MHRA. Where does it

11 stand in the world rankings in terms of skill,

12 diligence, robust overview?

13 **PROFESSOR EVANS:** I think in terms of its size, it is

14 certainly in the top five. At one stage I think it

15 might have been regarded as the world's premier

16 regulator but probably most people would regard the FDA

17 in America, the Food and Drug Administration, which is

18 a massive body with enormous amounts of funding, as

19 being the world premier regulator.

20 **Q.** Does, in fact, the MHRA not just regulate and authorise

21 medicinal products and medicines in the United Kingdom,

22 but scrutinise and check, and study medicinal products

23 and medicines from elsewhere in the world, and I think

24 provide semi-regulatory or scrutinising processes for

25 other people?

32



1 **PROFESSOR EVANS:** Yes, though the European Medicines Agency  
 2 does rather more of that.  
 3 **Q.** All right. And we'll hear more from Dame June Raine  
 4 later, but the MHRA is greatly assisted, is it not, by  
 5 what is known as the -- a committee known as the  
 6 Commission on Human Medicines which provides expert  
 7 advice and we've seen from the paperwork that in  
 8 relation to every aspect of safety regulation in this  
 9 case, there are very, very learned, detailed papers  
 10 produced and meetings held in respect of giving advice  
 11 to the MHRA on safety issues?  
 12 **PROFESSOR EVANS:** (No audible answer).  
 13 **Q.** How important are the expert workings that fall within  
 14 the scope of the Commission on Human Medicines?  
 15 **PROFESSOR EVANS:** Inevitably any finite group of people  
 16 can't have all the expertise, and so having expertise  
 17 for particular areas such as vaccines, they won't -- on  
 18 the main CHM, it won't have all vaccine experts on it,  
 19 but the vaccine working group is a specialist group and  
 20 they will all have expertise in vaccines. So it's a way  
 21 of broadening the depth, as well as the range of  
 22 expertise available to the MHRA.  
 23 **Q.** When the MHRA looks at safety, and quality and  
 24 effectiveness for the purposes of deciding whether to  
 25 authorise a medicinal product, is it concerned with cost

33

1 **Q.** And there's a significant section in your report which  
 2 emphasises that there are bodies across the  
 3 United Kingdom, NICE in England and Wales, the Scottish  
 4 Intercollegiate Guidelines Network in Scotland, and the  
 5 Scottish Medicines Consortium, and in Northern Ireland,  
 6 NICE is applied through their devolved structures, which  
 7 are concerned with the issue of whether or not  
 8 a particular medicinal product should be offered to  
 9 members of the public clinically, but they have no role  
 10 whatsoever in the issue of safety, do they?  
 11 **PROFESSOR EVANS:** No.  
 12 **Q.** The authorisation in relation to the UK vaccines was  
 13 granted under what's known as Regulation 174 of the  
 14 Human Medicines Regulations. A number of people have  
 15 observed that that is a UK legal provision, it's a UK  
 16 regulation, 174, and it is not the legal structure which  
 17 was and is applied at the European level at the European  
 18 Union, to which -- of which we were part until 11 pm on  
 19 31 January 2020.  
 20 Is the regulatory system under 174 in fact derived  
 21 from a European directive or regulation?  
 22 **PROFESSOR EVANS:** Yes, it was a European regulation,  
 23 effectively, that was allowed under European law in  
 24 public health emergencies, for any member state to take  
 25 their own action for a public health emergency, and

35

1 or the practicalities of delivery?  
 2 **PROFESSOR EVANS:** No.  
 3 **Q.** In this case, in relation to the three Covid-19 UK  
 4 vaccines, the MHRA authorised each vaccine with varying  
 5 conditions?  
 6 **PROFESSOR EVANS:** Yes.  
 7 **Q.** So the MHRA cannot just authorise a vaccine, it can put  
 8 conditions on --  
 9 **PROFESSOR EVANS:** Yes.  
 10 **Q.** -- the scope of the authorisation?  
 11 **PROFESSOR EVANS:** Yes.  
 12 **Q.** And by and large, we needn't look at them in detail,  
 13 there were conditions placed by the MHRA in relation to  
 14 age, in relation to dosage interval, and in relation to  
 15 whether or not certain sectorial groups should be,  
 16 subject to the advice of the JCVI and the government,  
 17 offered a vaccine?  
 18 **PROFESSOR EVANS:** Those would be called the indication and  
 19 they do that all the time for all medicines. There may  
 20 be additional conditions when the knowledge on something  
 21 is rather more limited, and they specify that extra  
 22 studies must be done, and it requires those to be done  
 23 before they get a full marketing authorisation, and that  
 24 specific post-authorisation safety studies may need to  
 25 be carried out.

34

1 Hungary did the same, and they were part of the EU and  
 2 still are, for the moment at least.  
 3 **Q.** And Regulation 174 existed prior to our departure at the  
 4 end of the transition period --  
 5 **PROFESSOR EVANS:** Yes, it was under the 2012 law.  
 6 **Q.** And it continued to exist following our departure?  
 7 **PROFESSOR EVANS:** It did.  
 8 **Q.** Northern Ireland, as it happens, remained after the  
 9 transition period part of the European medicinal  
 10 regulatory structure, but did Regulation 174  
 11 nevertheless apply to Northern Ireland, and was  
 12 available to be utilised in the context of Northern  
 13 Ireland?  
 14 **PROFESSOR EVANS:** That is my understanding. I'm not  
 15 a lawyer.  
 16 **Q.** All right.  
 17 **PROFESSOR EVANS:** But I think one of the other things is  
 18 that there is a European procedure, and the Pfizer  
 19 vaccine was authorised under European law prior to the  
 20 end of 2020, and the consequence was that the UK had  
 21 a marketing authorisation under European law that was  
 22 then carried over into 2021. So it's a very complex  
 23 legal issue caused by Brexit in that instance.  
 24 **Q.** But because of the use of Regulation 174, a consistent  
 25 approach could be applied in terms of the level of

36

1 scrutiny and legal authorisation across the whole of the  
2 United Kingdom, and secondly, was there any difference  
3 in substance --

4 **PROFESSOR EVANS:** No.

5 **Q.** -- between the UK regulatory authorisation process, and  
6 the Europeans'?

7 **PROFESSOR EVANS:** No.

8 **Q.** Finally, then, on this topic, when authority came to be  
9 considered in respect of each of these vaccines, it's  
10 plain from the evidence that an issue had arisen in  
11 relation to AstraZeneca, in July and September of 2020,  
12 of a very, very small number of cases of what is known  
13 as transverse myelitis appearing. The existence of  
14 those handful of cases paused in both occasions -- on  
15 both occasions, the trial process, but they were  
16 recommenced, and they didn't prevent the authority being  
17 given, ultimately, for the use of the vaccine,  
18 because -- and we needn't go there -- it's clear that  
19 the MHRA and the CHM, the Commission on Human Medicines,  
20 determined that they were not causatively the result of  
21 the vaccine.

22 Putting that issue aside, did any vaccine  
23 manufacturer in any of these three cases report, during  
24 the trial process, a SUSAR? That is to say the adverse  
25 effect, the serious -- sorry, the suspected unexpected

37

1 **PROFESSOR EVANS:** Yes, it's usually in the manufacturer's  
2 interests because they have to pay a big fee when they  
3 ask for an authorisation, and so they wouldn't want to  
4 submit until they're sure they've got a product that  
5 works, because it's going to cost them a lot of money to  
6 have it assessed.

7 **Q.** In relation to the authorisation process, was there  
8 similarly a rolling review whereby, as a result of very  
9 close, daily, hourly liaison between the MHRA and the  
10 manufacturers, the data was constantly provided rather  
11 than being delivered in one fell swoop?

12 **PROFESSOR EVANS:** Yes.

13 **Q.** In your opinion, did that more expedited and tweaked  
14 process have any impact at all on the degree of  
15 scrutiny, on the MHRA's understanding of the levels of  
16 safety in the clinical trial process, or in relation to  
17 the authorisation process?

18 **PROFESSOR EVANS:** No, I think the scrutiny is likely to have  
19 been greater than in a single op.

20 **Q.** Could you elaborate on that? We, of course, are dealing  
21 with the trial and authorisation process for vaccines  
22 which are subject to incredible public scrutiny.  
23 I mean, it was a matter of the greatest importance to  
24 everybody. I mean, Covid presented almost, I suppose,  
25 an existential threat. Can you express a view as to the

39

1 serious adverse effect.

2 **PROFESSOR EVANS:** Adverse reaction, yes.

3 **Q.** Adverse reaction?

4 **PROFESSOR EVANS:** As far as I know, they did not.

5 **Q.** Right.

6 And is it your opinion, therefore, page 32 of your  
7 report, that the authorisation process in the  
8 United Kingdom was appropriate to the circumstances, was  
9 based on a great deal of data, and in fact was  
10 completely aligned to the approach of authorisation  
11 considered and granted in other countries?

12 **PROFESSOR EVANS:** Yes, I would agree. And even if there had  
13 been a few SUSARs, that wouldn't have affected it.

14 **Q.** Do you know of anything that the United Kingdom missed  
15 in comparison with other countries at that time?

16 **PROFESSOR EVANS:** No.

17 **Q.** It is well known that in order to apply a more expedited  
18 process, the MHRA altered its procedures for the receipt  
19 of data in relation to the trial process and in relation  
20 to the application for authorisation?

21 **PROFESSOR EVANS:** Yes.

22 **Q.** So in relation to the trial process, it allowed data to  
23 be provided on a rolling basis rather than delaying the  
24 whole system by waiting for the manufacturer to produce  
25 all the data at the end in one fell swoop?

38

1 reality of the degree of scrutiny and care and attention  
2 that was applied by regulators across the western world?

3 **PROFESSOR EVANS:** I think there's no doubt that they were  
4 aware that if they authorised a vaccine that was bad,  
5 either in not being effective, or having serious adverse  
6 effects at a sufficient rate to make the vaccine  
7 regarded as useless, they were in real trouble. And  
8 I think they are public spirited, and they worked every  
9 hour there was in order to carry out the assessment.

10 And by doing it in this rolling way, they became  
11 very familiar with the data. They were doing this  
12 almost exclusively. There was almost nothing -- they  
13 weren't doing work for the European Medicines Agency at  
14 the time, and so I -- you'd have to ask Dame June Raine,  
15 but I think that virtually everybody in that agency was  
16 concentrating on doing it, and so the scrutiny was very  
17 intense indeed.

18 **Q.** Professor Prieto-Alhambra, we're at the point where your  
19 report, which deals largely with the more forensic issue  
20 of particular side effects caused by the vaccines, or  
21 associated with the vaccines, or which coincidentally  
22 followed the receipt of the vaccines, but nevertheless,  
23 you've expressed some views in an overall sense on the  
24 regulatory and the authorisation process.

25 At paragraph 3.16 of your report you say:

40

1 "... it is my view that the modifications made to  
2 the ... safety regulatory system in response to the  
3 pandemic ... did not negatively affect the ability to  
4 effectively identify and respond to safety issues ..."

5 By that reference to modifications, are you  
6 referring to the way in which data was received in  
7 respect of the trials, and also the way in which data  
8 was received in relation to the applications for  
9 authorisation?

10 **PROFESSOR PRIETO-ALHAMBRA:** Indeed. Yes.

11 **Q.** You too make the point that of course, given the scale  
12 of the trials, none of the potential serious adverse  
13 effects which were subsequently identified as being  
14 associated, that is to say, without expressing a view on  
15 whether they were causatively connected to the vaccines,  
16 none of those were known about at the time because they  
17 were all too rare to be detected even in a very large  
18 clinical trial?

19 **PROFESSOR PRIETO-ALHAMBRA:** I think Professor Evans  
20 explained that elegantly with numbers.

21 **Q.** So you agree with what he said in relation to that?

22 **LADY HALLETT:** Professor, you have a very soft voice.  
23 I don't know if you always have a soft voice when you're  
24 speaking to your students but you do here. If you could  
25 speak up, I would be grateful.

41

1 scientific literature which provides low quality, or low  
2 to moderate quality, evidence for the proposition that  
3 there is an association between vaccines and transverse  
4 myelitis?

5 **PROFESSOR PRIETO-ALHAMBRA:** Indeed, that's our conclusion.

6 **Q.** Right. I'm afraid that's all I'm going to ask you for  
7 the moment, Professor. We're back to Professor Evans.

8 Could we now spend a little time, not very long,  
9 dealing with the general obligation on manufacturers to  
10 tell regulators any information in their possession  
11 which relates to the safety of the product, or which  
12 might impact upon, post-authorisation, the conditions of  
13 the authorisation or the grant of authorisation itself.  
14 What can you say about the general extent of the  
15 obligation on manufacturers?

16 **PROFESSOR EVANS:** It's a legal requirement.

17 **Q.** Does that legal requirement extend to -- well, how far  
18 does that legal requirement extend, in terms of  
19 information relating to the safety of the product under  
20 manufacture? Is it anything to do with safety or is it  
21 anything which might impact upon the grant of  
22 authorisation? How is it assessed?

23 **PROFESSOR EVANS:** I think that one has to realise that it  
24 isn't the manufacturer who is really doing the trials;  
25 it is being done in hospitals or in general practices

43

1 **PROFESSOR PRIETO-ALHAMBRA:** I will do.

2 **MR KEITH:** Obviously that observation must exclude, of  
3 course, the bringing to the attention of the MHRA and  
4 the CHM, in July and September 2020, the handful of  
5 cases of transverse myelitis in relation to AstraZeneca.

6 But that was a condition at that time, which was  
7 presumably addressed in very great detail. Was a view  
8 ever reached as to whether or not a causative connection  
9 could be established between that handful of cases of  
10 transverse myelitis and the vaccine, or was it  
11 coincidental or perhaps associated with Covid-19 itself?

12 **PROFESSOR PRIETO-ALHAMBRA:** I think transverse myelitis is  
13 one of these, I see, adverse events of a special  
14 interest that we know, from previous experience with  
15 other vaccines, could be potentially related to  
16 vaccination. So it was greatly monitored very closely  
17 by the MHRA and any other international regulators.  
18 Despite that, the quality of the evidence on a causal  
19 association is low, maybe moderate. There's a number of  
20 studies, some of them good quality, with inconsistent  
21 results.

22 **Q.** So there is -- and we'll look in more detail at the  
23 nature of the literature review that you did, but  
24 without going into it in detail, your overall view was  
25 that there is material in the public domain by way of

42

1 around the world.

2 **Q.** Well, that's phase IV.

3 **PROFESSOR EVANS:** No, but even in phase III, it's -- you  
4 are -- I was recruited through Southampton University  
5 Hospital, and so I was studied within an academic  
6 centre. And so even in phase III trials, they're being  
7 done with the real patients in the real world, but  
8 they're under very controlled conditions. And so those  
9 clinicians know that they have an absolute requirement  
10 to report adverse effects to the investigators, who then  
11 have to report it, and it's reported on to the data  
12 monitoring board and to the manufacturer.

13 And so the whole process means that if Stephen Evans  
14 got a really severe adverse reaction, there will be  
15 a nurse who starts with it and then a doctor and so on,  
16 and it will eventually end up at the MHRA through at  
17 least one mechanism, and very often there's multiple  
18 mechanisms whereby it can reach the MHRA.

19 So there is very considerable pressure on companies  
20 to keep to any legal requirement they have. It's  
21 possible that they will interpret the law in a slightly  
22 different way in different circumstances, but generally,  
23 my experience is that they're very good in that.

24 **Q.** And just so we're clear about this, and I won't away my  
25 question to you, the phase IV trials focus on the

44

1 receipt of a vaccine or a product in clinical use.

2 **PROFESSOR EVANS:** Yes, so once --

3 **Q.** Because it's --

4 **PROFESSOR EVANS:** Once it's been authorised, that's the

5 point.

6 **Q.** It's been given to the public?

7 **PROFESSOR EVANS:** Yes.

8 **Q.** But hospitals and academic institutions and so on and so

9 forth will encourage members of the public to

10 participate in the phase III trials pre-authorisation?

11 **PROFESSOR EVANS:** Exactly, exactly.

12 **Q.** Which is why members of the public --

13 **PROFESSOR EVANS:** Yes.

14 **Q.** -- would receive the vaccine?

15 **PROFESSOR EVANS:** Yes.

16 **Q.** Right. I won't ask you the detail of it, we'll deal

17 with it with Dame June Raine, but a manufacturer is

18 obliged to produce a number of documents throughout the

19 trial pre-authorisation stage by way of case safety

20 reports, update safety reports, periodic safety update

21 reports, and make provision for something known as risk

22 management plans, that's to say how you intend to go

23 about addressing and monitoring safety

24 post-authorisation?

25 **PROFESSOR EVANS:** Yes, that will be part of an enormous

45

1 and you may need to have trials in them. But if I have

2 trials in, let us say, people from Southampton, then

3 they're likely to be similar results to London, and

4 they'll be similar results to Paris, and they'll even be

5 similar results to Cape Town, in terms of efficacy.

6 With safety, it is a little more difficult. In

7 general, they will be similar, but not quite as -- and

8 they're certainly not identical. So diversity in the

9 trial for efficacy reasons is not usually a major

10 consideration. It becomes more of a consideration when

11 harms might be associated with different groups.

12 **Q.** In relation to ethnic minority communities, in general

13 terms, did any of the three Covid-19 UK vaccines give

14 rise to different results, different outcomes, during

15 the trials, in terms of the risk of adverse reactions or

16 side effects in the case of ethnic minorities?

17 **PROFESSOR EVANS:** Not as far as I'm aware. Look, one of the

18 problems, of course, is that you would -- if you were to

19 be really sure of it, you would need to have 30,000

20 people from one particular ethnic minority in order to

21 be sure, and that would need to be repeated across

22 others. So we're back to the ethical problem of: do we

23 carry on doing randomised trials with hundreds of

24 thousands of people, and --

25 **Q.** And such a trial, would it be as equally

47

1 dossier -- you know, piles of paper, if it's all on

2 paper, that are several feet high -- that are submitted

3 to the regulator.

4 **Q.** Does it follow that from the provision of information

5 during the trials, that the regulator will have a very

6 good understanding of the levels of diversity in the

7 trials, whether or not there is a degree, an untoward

8 degree, of bias in the trial process, and whether or not

9 the trials are being tried across all sectors of the

10 population who may, ultimately, benefit from the

11 product, or perhaps, necessarily, have to include groups

12 such as pregnant women or the immunosuppressed or those

13 with comorbidities?

14 **PROFESSOR EVANS:** The MHRA will be aware of all that, yes.

15 **Q.** And in relation to the Covid-19 vaccines, in terms of

16 diversity, do you have a view as to the degree of

17 diversity?

18 **PROFESSOR EVANS:** In nearly all trials the degree of

19 diversity is not ideal for a whole host of reasons. But

20 in terms of efficacy, it is very rarely the case,

21 extremely rarely the case, that major groups will have

22 different efficacy, though that tends to be more of

23 a case with young children. Young children will behave

24 -- are not young adults, they will not behave in the

25 same way. And so their response may be quite different,

46

1 unrepresentative of the population which is intended to

2 be benefited?

3 **PROFESSOR EVANS:** Yes. So major efforts are made to be

4 diverse, and that's one of the reasons why you may go to

5 multiple centres and multiple countries. So for the

6 AstraZeneca vaccine, a great deal of the data arose from

7 South Africa. With trials in America, the ethnic

8 diversity was -- was -- they made efforts. It still

9 wasn't representative, but there was considerable effort

10 made to include people from different racial

11 backgrounds.

12 **Q.** I want to ask you about that in a moment but before we

13 get there, just on the question of the representative

14 nature of the trials generally, so in relation to

15 safety, where there is a real issue in terms of the

16 position of members of the ethnic minorities, the ethnic

17 minority communities, is not in relation to whether or

18 not the possible impact upon them genetically, by virtue

19 of a suspected adverse side effect from a vaccine, it's

20 about confidence. The great need to ensure that trials

21 are representative of the population is to encourage

22 confidence that they are proper trials, that they've

23 adequately got on top of all the safety issues, and that

24 the vaccine is something which can -- (overspeaking) --

25 **PROFESSOR EVANS:** Yes, it's an issue of confidence but

48

1 you're also interested in the data, if there is anything  
2 startling that you notice, and that's part of what  
3 a data monitoring board would do, it will look at  
4 subgroups and look at individuals, and so it will raise,  
5 hey, we might have a problem here.

6 **Q.** But obviously, if you're a pregnant woman or you're  
7 a child, there is a greater likelihood that there will  
8 be a different outcome in terms of safety than other  
9 sectorial groups.

10 **PROFESSOR EVANS:** Not necessarily.

11 **Q.** Not necessarily? All right. Add then the reality of  
12 these vaccines, as you say, in respect of at least two  
13 of them, there were -- or well, in fact all of them --  
14 there were trials outside the United Kingdom?

15 **PROFESSOR EVANS:** Yes.

16 **Q.** And in relation to, I think, AstraZeneca, there were  
17 trials in Brazil and South Africa?

18 **PROFESSOR EVANS:** Yes.

19 **Q.** And the representative make-up of the trial in Brazil,  
20 for example, was 31%, 31.4% non-white, and in South  
21 Africa, 87% non-white.

22 **PROFESSOR EVANS:** And that's -- (overspeaking) --

23 **Q.** So does it follow that --

24 **PROFESSOR EVANS:** -- representative of South Africa.

25 **Q.** When debating diversity and whether or not trials are  
49

1 **Q.** And -- but you say:

2 "Given the rarity of the later identified serious  
3 adverse events, it is unlikely that including a higher  
4 proportion of people from specific ethnicities would  
5 have affected our ability to identify specific safety  
6 issues."

7 What do you mean by that phrase?

8 **PROFESSOR PRIETO-ALHAMBRA:** I think it's very much in line  
9 with what Professor Evans was saying, given the rarity,  
10 the low frequency of these adverse events, w-e wouldn't  
11 still have the numbers to identify them in the trials,  
12 even if we had increased the proportion of ethnic  
13 minorities in them.

14 **Q.** And do you make the point, which I've endeavoured,  
15 rather inelegantly, to put to Professor Evans, that  
16 perhaps -- well, one of the most important aspects of  
17 the need to improve diversity is because it will improve  
18 our understanding of the risk-benefit, as well as reduce  
19 vaccine hesitancy amongst those underrepresented groups?

20 **PROFESSOR PRIETO-ALHAMBRA:** That is indeed one of my points  
21 in the report.

22 **MR KEITH:** My Lady, if that's a convenient --

23 **LADY HALLETT:** Your leading question has got the answers --

24 **MR KEITH:** Yes.

25 **LADY HALLETT:** -- ultimately.  
51

1 properly representative of the population, one must  
2 remember, is this right, that the trials were being  
3 conducted outside the United Kingdom as well as inside  
4 the United Kingdom?

5 **PROFESSOR EVANS:** Yes.

6 **Q.** All right. And just finally, then, please on this  
7 topic, Professor Prieto-Alhambra, at pages 19 and 20 of  
8 your report, under the heading of "Diversity in clinical  
9 trials", you say that, on this topic of sectorial  
10 representation:

11 "The initial AstraZeneca trials included a lower  
12 than desirable number of elderly people ... [which] led  
13 to some criticism about the potential efficacy of [the]  
14 vaccine in older populations.

15 "Sex representation was approximately balanced ..."

16 But pregnant women were, as we've heard, excluded  
17 from all phase III trials.

18 And:

19 "Most ethnic groups were included in ... Phase III  
20 trials for all three vaccines, albeit in lower  
21 proportions in their representation in the overall  
22 population."

23 But is that in relation to UK trials?

24 **PROFESSOR PRIETO-ALHAMBRA:** That is in relation to UK  
25 trials, yes.  
50

1 **MR KEITH:** I'm so sorry, one gets to the stage where I'm  
2 afraid one just has to cut to the heart of it.

3 **LADY HALLETT:** No, no, it's all right. I'm not being  
4 serious. 11.35, please.

5 (11.21 am)

6 (A short break)

7 (11.35 am)

8 **LADY HALLETT:** Mr Keith.

9 **MR KEITH:** Professor Evans, after authorisation is granted  
10 for a vaccine, in this case the three vaccines,  
11 presumably there is a mass of data which is accumulated  
12 and made available, based upon the -- or drawn from and  
13 reporting on the pre-existing phase III trials on  
14 members of the public and on the clinical rollout of the  
15 vaccine.

16 In the case of the United Kingdom, are there in fact  
17 a great deal many data sources reporting on, broadly,  
18 the issue of safety of the vaccines?

19 **PROFESSOR EVANS:** Yes.

20 **Q.** I'm going to look in a moment on the MHRA's four pillars  
21 and their post-authorisation approach, and I'm not  
22 concerned about the manufacturers' obligation to report  
23 and to continue to report on safety and related matters,  
24 but focusing on the data, are there a number of data  
25 management tools across the United Kingdom based very  
52

1 broadly upon GP records, NHS records, the academic and  
2 health institutes which carry out the trials, as well as  
3 management tools relating to the delivery, the actual  
4 immunisation process?

5 **PROFESSOR EVANS:** Yes.

6 **Q.** In your view, does that data process, however disparate  
7 it might appear to be, did it provide a proper, thorough  
8 overview, or process by which safety related issues and  
9 problems and side effects could emerge?

10 **PROFESSOR EVANS:** Some very clever and determined people  
11 managed to bring those data sources together to do that,  
12 yes.

13 **Q.** And did they include observational studies which took  
14 place both before and after authorisation?

15 **PROFESSOR EVANS:** Yes.

16 **Q.** How good, how thorough, were those observational studies  
17 in producing data, accurate data, which would give the  
18 regulator and the public a good understanding of the  
19 reality of the position?

20 **PROFESSOR EVANS:** Non-randomised studies are subject to  
21 biases in the way that randomised trials are not. The  
22 quality in the UK of such studies was as high as  
23 anywhere in the world, and it provided enormously  
24 important data.

25 **Q.** How important, in terms of giving rise to real-world

53

1 rates.

2 And so this was the first, basic paper that was able  
3 to do that. They subsequently were able to link to  
4 vaccination records to not only death records but some  
5 hospital admission records, and a variety of other  
6 things. They were never able to link to occupational  
7 records. But OpenSAFELY has produced and has gone on  
8 producing many papers that were of international as well  
9 as UK importance.

10 **Q.** And to get some idea of the scale, properly anonymised  
11 and properly produced data in the case, I think, of tens  
12 of millions of people, was accumulated and amalgamated  
13 and analysed by this OpenSAFELY process; is that right?

14 **PROFESSOR EVANS:** Yes. And the key thing was "SAFELY". It  
15 enabled the research to be done protecting any knowledge  
16 of any individual participants from any of the  
17 investigators. So, as an investigator, I couldn't tell  
18 whether Mr Hugo Keith was included in my analysis or  
19 not, whether you -- and you may well have been, but  
20 I wouldn't be able to identify you at any stage. And  
21 the care that was taken to do that is part of the  
22 "SAFELY": it's not to do with the safety of medicines,  
23 it's to do with the safety of the data of the  
24 participant. So that requires very clever computing  
25 skills to do that.

55

1 data, are electronic health records kept in the  
2 United Kingdom?

3 **PROFESSOR EVANS:** They're absolutely vital. The general  
4 practice system is the bedrock of this. Linking to  
5 other records is possible and was done in the pandemic,  
6 but isn't always simple.

7 **Q.** Is there a national system for the retention of  
8 electronic health records, or is there a trans-UK  
9 system?

10 **PROFESSOR EVANS:** Some of the GP systems cross the different  
11 countries. Most are either well represented in Scotland  
12 or in England.

13 **Q.** Could you tell us something, please, about the  
14 OpenSAFELY observational study that was carried out.  
15 How important was that in terms of providing useful,  
16 safety-related information?

17 **PROFESSOR EVANS:** I'm biased because I was a participant in  
18 that. It went from idea between Ben Goldacre and  
19 Liam Smeeth, who were in Oxford and the London School of  
20 Hygiene and Tropical Medicine, to a paper that was  
21 published in The Lancet subsequently in 42 days, and it  
22 was quite extraordinary. But the idea was that, based  
23 on one of the largest providers of GP records, they  
24 decided they could track people who had Covid tests and  
25 who had got Covid, and be able to look at their death

54

1 **Q.** And is the aim of such a data system to try to identify  
2 trends, occurrences, events, in terms of the appearance  
3 of side effects and safety-related issues, which are of  
4 significance?

5 **PROFESSOR EVANS:** That was one of the objects, yes.

6 **Q.** Right. And were there, in fact, a number of other data  
7 links -- I think you refer to something called the  
8 "Clinical Practice Datalink", there were data links put  
9 into place by GP service providers, so there was a mass  
10 of data out there?

11 **PROFESSOR EVANS:** Yes, OpenSAFELY began with one GP provider  
12 and then included the other major one, such that they  
13 had 95%. But Professor Prieto-Alhambra was involved in  
14 other studies, and in a number of instances, these were  
15 done across national boundaries, so that he could talk  
16 about a study done in Spain as well as the UK.

17 **Q.** Well, that's extremely helpful, because you can now give  
18 evidence for him as well.

19 Professor, your report at page 14, if we could have  
20 that up, please, at paragraph 3.19 you extol the virtues  
21 of the pseudonymised NHS records and linked data, data  
22 from the National Immunisation Management System  
23 registry. Did those systems allow quality and timely  
24 research on safety to be done?

25 **PROFESSOR PRIETO-ALHAMBRA:** Indeed, I think that's UK NHS

56

1 pseudonymised records were world leading in the  
 2 investigation of safety of Covid vaccines, and the  
 3 NIMS registry specifically made this possible for us to  
 4 see a complete exposure to vaccination, which is  
 5 extremely important to be able to identify people who  
 6 were, or were not exposed to the vaccines.  
 7 **Q.** By comparison to the amount of data accumulated by  
 8 manufacturers pre-authorisation, what can you say about  
 9 the scale of the data that was accumulated  
 10 post-authorisation?

11 **PROFESSOR PRIETO-ALHAMBRA:** So post-authorisation we  
 12 accumulated an order of magnitude of more numbers of  
 13 patients. The nature of the data and the way it is  
 14 collected is fundamentally different, though, because  
 15 pre-authorisation data would include randomised control  
 16 trials, whilst the post-authorisation data is mostly  
 17 observational and collected in routine practice, meaning  
 18 that you need to be more careful with the quality of  
 19 that data and also with the biases arising from the fact  
 20 that it's observational and not randomised.

21 **Q.** But there was very much more of it?

22 **PROFESSOR PRIETO-ALHAMBRA:** Yes.

23 **Q.** It's obviously a complex system, and there were a number  
 24 of data sources, were there not, both related to  
 25 observational studies carried out on the population, but

57

1 and, let's say, informal collaboration and conversations  
 2 that made that transfer of certain pieces of information  
 3 possible, but of course, not being -- formally sitting  
 4 in the same table might have limited access to certain  
 5 pieces of information. When I then go in my report, one  
 6 by one, with the different adverse events, I do not  
 7 think there was a big impact of that in how, I think,  
 8 were managed, but clearly I think a learning for the  
 9 future should be that we should make sure that we have  
 10 a more formal collaboration and a better flow of data,  
 11 if possible.

12 **Q.** The second point you make, at a different part of your  
 13 report, page 11, paragraph 3.6, is that there needs to  
 14 be a system by which the studies known as  
 15 post-authorisation safety studies, PASS, can be  
 16 organised and managed. And one difference you say,  
 17 particular difference between the European Medicines  
 18 Agency and the FDA, Health Canada, and us, in the form  
 19 of MHRA, is availability of a process by which PASS  
 20 studies can be easily or straightforwardly commissioned.  
 21 Why does that matter, given the mass of data which  
 22 appears to have been available?

23 **PROFESSOR PRIETO-ALHAMBRA:** So it matters because generating  
 24 evidence, or knowledge from these masses of data  
 25 requires very specific expertise, and the regulators, in

59

1 also based on the records kept of the immunisation  
 2 process itself. So, for example, you referred to the  
 3 Vaccination Management Tool in Scotland and also to  
 4 NIMS, the National Immunisation Management -- service?  
 5 **PROFESSOR PRIETO-ALHAMBRA:** System.

6 **Q.** System, thank you, in England. In your assessment, were  
 7 those systems for the accumulation of data efficient and  
 8 sufficient?

9 **PROFESSOR PRIETO-ALHAMBRA:** They could always improve.  
 10 So if you look at my recommendations, I do think  
 11 that we can make sure that there are systems to link the  
 12 data more quickly and more efficiently, but they were,  
 13 as I said, world leading and much better than the data  
 14 that many other countries had available.

15 **Q.** Well, there are two aspects to which you refer in that  
 16 context. One is, of course, following the departure  
 17 from the European Union, at the end of the transition  
 18 period, the United Kingdom no longer sat on, by right,  
 19 the European Medicines Agency or had direct access to  
 20 any of its data sources. Do you think that that absence  
 21 of a link, direct link in the absence of a formal  
 22 presence at Europe made a difference in terms of the  
 23 MHRA's oversight of the data which was available, the  
 24 reality of immunisation, and the safety system?

25 **PROFESSOR PRIETO-ALHAMBRA:** I believe there was very fluent  
 58

1 this case MHRA, need to have that expertise available  
 2 in-house but also they need to have access to it through  
 3 commissioning of these kind of studies. If you look at  
 4 the examples that I mentioned in my report of, for  
 5 example, Sentinel for the US FDA, C-NODES for Health  
 6 Canada, or DARWIN EU for the EMA, they are structured  
 7 systems that enable the rapid commissioning and  
 8 execution of such studies. And I think it would be  
 9 beneficial to have a similar system here.

10 **Q.** All right. That's data. Another important part of this  
 11 jigsaw, is the continuing obligation on manufacturers to  
 12 produce safety-related information.

13 Professor Evans, is there a general obligation  
 14 continuing on manufacturers after authorisation to  
 15 continue to make available safety-related information?

16 **PROFESSOR EVANS:** Yes, the frequency with which they have to  
 17 do so changed over time. It was -- it's generally, for  
 18 most medicines annually, but it became six-monthly,  
 19 three-monthly, and even monthly, obligations put on them  
 20 to update the regulators with their safety information.

21 **Q.** And in general terms, did they have to provide not just  
 22 pre-authorisation case safety reports, that's to say  
 23 particular instances where safety-related issues had  
 24 arisen, but periodic safety update reports,  
 25 post-authorisation safety study protocols, final study

60

1 reports, as well as, you said earlier, risk management  
2 plans?

3 **PROFESSOR EVANS:** Yes.

4 **Q.** So a complex and somewhat byzantine process of  
5 reporting.

6 **PROFESSOR EVANS:** Byzantine is not the word I would use.

7 I think that it sounds bureaucratic but in a number of  
8 instances it has real clinical and public health  
9 benefit, but at times, it can be bureaucratic. I'd  
10 sympathise with you.

11 **Q.** Byzantine was not meant to be pejorative, I deliberately  
12 didn't use the word "bureaucratic". It's quite complex.

13 **PROFESSOR EVANS:** It is.

14 **Q.** But overall, in your assessment, does it work in  
15 ensuring a high level of confidence that any relevant  
16 knowledge in the possession of the manufacturers is  
17 brought to the attention of the regulator?

18 **PROFESSOR EVANS:** Yes, I think in general it does work.

19 **Q.** Then we come on to the obligation on the MHRA to  
20 continue to assess safety, and Professor Evans, the MHRA  
21 extols the virtues of something called its four pillars  
22 of review. Without asking you to identify them one  
23 after the other, they consist of the Yellow Card system  
24 with an added-on monitoring system, two analytical  
25 systems by which they assess trends and the theoretical

61

1 that there are, to me, two important differences or  
2 possibly even three, in the data. The first is the  
3 passive things, the Yellow Card system, which relies on  
4 people in the general public, doctors, health  
5 professionals in general, and patients reporting to the  
6 MHRA. Then there is a looking at electronic health  
7 records in general, to look for problems. And then  
8 there are specific studies, using electronic health  
9 records.

10 **Q.** Just dealing firstly, then, with the Yellow Card system,  
11 that passive system, because it requires members of the  
12 public to get in touch and say, "This has happened to me  
13 and I'm reporting it," did it have an add-on or an  
14 additional aspect to it, which was that during the  
15 pandemic, the MHRA invited people to put themselves  
16 forward for monitoring, having identified themselves in  
17 the Yellow Card system, so that they could be followed  
18 up?

19 **PROFESSOR EVANS:** Yes.

20 **Q.** Do you have any idea of how many people were invited to  
21 be monitored and how many people --

22 **PROFESSOR EVANS:** Of the order of a million.

23 **Q.** And how many people in reality agreed to be followed up?

24 **PROFESSOR EVANS:** My recollection is that it was of the  
25 order of 50,000.

63

1 and the hypothetical possibility of things happening,  
2 and therefore, if something happens, they realise it's  
3 out of kilter, and also, the obligation to continue to  
4 assess material provided by the manufacturers.

5 Do, in your assessment, those four pillars work in  
6 terms of ensuring that everything that can be done to  
7 make sure that side effects and safety-related issues  
8 are picked up?

9 **PROFESSOR EVANS:** In totality, yes.

10 **Q.** They say -- well, they have four elements. One of them  
11 is the formal epidemiological studies which are carried  
12 out. Are those studies which are carried out, do they  
13 overlap with the sorts of studies that we've been  
14 discussing generally in terms of the provision of data?

15 **PROFESSOR EVANS:** Yes.

16 **Q.** Or are they particular studies directed --

17 **PROFESSOR EVANS:** Both.

18 **Q.** -- and managed by the MHRA?

19 **PROFESSOR EVANS:** The MHRA will do relatively few studies of  
20 its own. They interact mainly with manufacturers, and  
21 they require the manufacturers to do the studies. The  
22 manufacturers may then get either independent  
23 organisations or academics to do them, and the sort of  
24 things that Professor Prieto-Alhambra said are examples  
25 of those studies. But I think you should understand

62

1 **Q.** So in the context of the issue about the importance of  
2 ensuring that population and the public have confidence  
3 in these systems, there is a process by which they can  
4 materially contribute to it?

5 **PROFESSOR EVANS:** Absolutely.

6 **Q.** But in terms of the monitoring system, it wasn't an  
7 opportunity that was greatly availed of?

8 **PROFESSOR EVANS:** I don't -- my personal view is that it was  
9 not of enormous utility. The Yellow Card system itself  
10 was very useful but there are biases in that, and the  
11 biases in the monitoring system, because it's only  
12 50,000 who respond out of a million, are potentially  
13 much greater. Electronic health records are a much  
14 better source for making decisions on whether an effect  
15 that you might have seen in the Yellow Card system is  
16 causal.

17 **Q.** Professor Prieto-Alhambra, at paragraph 3.17, your view  
18 is that, by and large, the Yellow Card Scheme did allow  
19 the MHRA to identify safety issues in a timely manner  
20 and to produce swift guidance and documentation. So you  
21 think, by and large, it did work?

22 **PROFESSOR PRIETO-ALHAMBRA:** (Witness nodded).

23 **Q.** Do you have a view as to the efficacy of the monitoring  
24 add-on system?

25 **PROFESSOR PRIETO-ALHAMBRA:** I think that the Yellow Card

64



1 system worked really well, as it has always done, and  
2 it's always, or typically always, the main source of the  
3 first signals. The monitoring add-on did not add much,  
4 in my opinion or in my knowledge.

5 **Q.** The second aspect, second pillar, is what is known as  
6 the rapid cycle analysis. Could you describe in lay  
7 terms what that was? What did the MHRA do in terms of  
8 trying to analyse pre-defined events and draw  
9 conclusions?

10 **PROFESSOR EVANS:** Rapid cycle analysis was developed  
11 probably in America, where they used electronic health  
12 records to very rapidly look at whether there was an  
13 excess of a particular effect of interest using those  
14 electronic health records, and the MHRA adopted that  
15 kind of strategy this time. I think that is very  
16 useful. It doesn't cover everything, but it covers the  
17 things that have risen above the mêlée that you become  
18 aware of.

19 **Q.** And the third pillar, ecological analysis. So it's said  
20 to be "proactive analysis of trends within particular  
21 populations". What is that? It may in fact be part of  
22 the third pillar, but it appears to be a separate sort  
23 of study.

24 **PROFESSOR EVANS:** It's the sort of thing that you may be  
25 able to do without individual records. You look at

65

1 regulatory decisions.

2 I think, for the pandemic, phase IV trials as such,  
3 certainly the randomised ones, had a small  
4 -- (overspeaking) --

5 **Q.** So, in truth, the majority of the trials conducted  
6 post-authorisation concerning members of the public were  
7 studies --

8 **PROFESSOR EVANS:** Yes --

9 **Q.** Non --

10 **PROFESSOR EVANS:** They were not --

11 **Q.** Not randomised trials?

12 **PROFESSOR EVANS:** And they were of enormous value, yes.

13 **Q.** Because presumably they were at scale and therefore were  
14 better placed to bring to the attention of the MHRA any  
15 safety-related issues.

16 And one last question, then, on the topic of signal  
17 detection, Professor Evans, may we presume that the very  
18 sophisticated software and data processes are used by  
19 the MHRA, and other regulators, to try to identify and  
20 evaluate the trends and significance of events occurring  
21 in the general population?

22 **PROFESSOR EVANS:** The analysis of signals, and a signal  
23 noticing that you think it is possible that a particular  
24 adverse event is associated with a particular vaccine or  
25 drug and the numbers flag this up. What you need to do

67

1 totals of things that are reported through the Office  
2 for National Statistics, whether there are death rate  
3 trends and things of that kind.

4 It's a very weak pillar. It is a pillar that's  
5 reasonable to look at provided it's not absorbing lots  
6 of resources, but its utility is limited.

7 **Q.** Then finally on this topic, you've referred to it  
8 already, but could you express your view on the  
9 efficacy, the impact and the usefulness of the phase IV  
10 trial process. So, to remind ourselves, the trials that  
11 took place post-authorisation, phase IV, in clinical  
12 use, members of the public. How wide were they?

13 **PROFESSOR EVANS:** The nomenclature there I think is a little  
14 bit confusing. Many of the so-called phase IV trials  
15 are not randomised, and I think that the randomised  
16 trials gave enormous help in very particular areas, such  
17 as whether having a Pfizer vaccine after an AstraZeneca  
18 vaccine among adolescents had certain gains or losses.

19 And many of those trials were carried out by academics  
20 rather than the industry. I'm not aware of -- and they  
21 were randomised. And they were supported by academics  
22 and the UK system for supporting academic research.

23 I'm not aware of any such trials done by the  
24 manufacturers, and I'm not fully aware of -- you'd have  
25 to ask Dame June Raine -- as to what impact they had on

66

1 is then evaluate that carefully, and I think that the  
2 MHRA's system of doing that, both in the detection of  
3 the problem in the first place, based largely on passive  
4 surveillance, with its limitations, I think was done  
5 very well.

6 **Q.** Is it therefore the conclusion that you reach in your  
7 report, overall, that post-authorisation, safety  
8 surveillance, monitoring, flagging up, assessment,  
9 evaluative process, was a good one?

10 **PROFESSOR EVANS:** Yes.

11 **Q.** Professor Prieto-Alhambra, your opinion?

12 **PROFESSOR PRIETO-ALHAMBRA:** Yes, very similar opinion.

13 **Q.** And in reality, were they any different in substance or  
14 in output and value of use from our European neighbours  
15 and the American system?

16 **PROFESSOR PRIETO-ALHAMBRA:** Very similar, I would say.

17 **Q.** Professor Evans, there are then a handful of discrete  
18 points that have been raised by the Core Participants,  
19 amongst other people, and I want you, please, just to  
20 express succinctly your views on these various points,  
21 they've been very helpfully addressed in your report,  
22 but it's important that we hear what you have to say  
23 about them.

24 Some suggest that the mRNA and also the viral, the  
25 adenoviral vector technology underpinning, respectively,

68

1 the Moderna and Pfizer vaccines and the AstraZeneca  
2 vaccine, are regarded, or should be regarded, or are --  
3 and I think this is not meant as a compliment, but  
4 pejoratively -- gene therapies, that in some way they  
5 operate to alter the genetic make-up of the body and/or  
6 are therefore prone to have serious genetic side  
7 effects.

8 **PROFESSOR EVANS:** Absolutely not.

9 **Q.** At [page] 60 you deal with the issue of the UK reporting  
10 of myo/pericarditis, which you recall of course, was an  
11 issue which brought itself to the attention of the MHRA  
12 along with other regulators in Europe?

13 **PROFESSOR EVANS:** Not only Europe, it was probably of even  
14 greater concern in the US and Canada.

15 **Q.** And Canada -- Israel, was it or is that --

16 **PROFESSOR EVANS:** Yes, I believe, that the first signs were  
17 seen in Israel.

18 **Q.** Ah. Do you believe that the MHRA responded in an  
19 appropriate manner, in terms of substance and time, to  
20 the emerging reports of myo and pericarditis?

21 **PROFESSOR EVANS:** Yes.

22 **Q.** You've already spoken about the Yellow Card system. In  
23 an overall sense, do you believe that, subject to such  
24 amendments and recommendations as my Lady may formulate  
25 for its continued use, it is overall, an effective

69

1 inside the brain of the health professional to detect  
2 that they have got a suspicion? I think you want to  
3 make it as easy as possible for them to do so, but  
4 I think that the notion of mandatory reporting for  
5 health professionals, is not good. For manufacturers,  
6 yes, they've got to report anything that they receive,  
7 but for health professionals who are seeing a patient,  
8 I think we want to make it as easy for them as possible,  
9 but the evidence we had from the 1990s where it was  
10 mandatory in France for health professionals to report,  
11 they reported at a lower rate than the UK where it was  
12 non-mandatory.

13 **Q.** Many people have, particularly from the Covid Bereaved  
14 and Injured groups, expressed concern about the  
15 operation of the coronial system which is, of course,  
16 wildly out of scope for us. But there is an overlap  
17 insofar as, of course, there will be many people who --  
18 a significant proportion of those persons who suffered  
19 serious side effects, who then died, will have been  
20 through, or their families will have been through the  
21 coronial process. Do you happen to know whether or not  
22 there are any cases in which the coronial system  
23 identified and considered deaths, fatalities, caused by  
24 vaccines --

25 **PROFESSOR EVANS:** Yes, they --

71

1 system for allowing members of the public to notify the  
2 regulator of side effects?

3 **PROFESSOR EVANS:** It's probably not as effective for members  
4 of the public, but is generally pretty effective for  
5 health professionals, and they are the ones who report  
6 most of the serious adverse effects. Members of the  
7 public will tend to report less serious ones that, in  
8 most instances, are of less public health importance.  
9 It is the serious ones that are not likely to be seen in  
10 the trials. The less serious ones are often seen in the  
11 trials, and so we don't, if they're frequent, we  
12 don't -- we know about them.

13 **Q.** So the vast majority of reports from members of the  
14 public tend to focus on, perhaps, points of  
15 reactogenicity, as opposed to the more serious, which  
16 are, of course, very much fewer in number?

17 **PROFESSOR EVANS:** They may well do, and the data seems to  
18 suggest that.

19 **Q.** The suggestion has been made that it should be mandatory  
20 for healthcare professionals to report suspected adverse  
21 reactions via the Yellow Card system; what do you say to  
22 that?

23 **PROFESSOR EVANS:** Well, I think the answer is in the words  
24 you used, "suspected adverse reactions". How can it be  
25 mandatory to report a suspicion? Are you going to get

70

1 **Q.** -- where those cases had not already been detected  
2 through other means or been within the knowledge of the  
3 MHRA?

4 **PROFESSOR EVANS:** I don't know whether the cases were.  
5 I think -- because I don't have knowledge of individual  
6 cases. Dame June Raine may be able to answer that. But  
7 the effect, the adverse reaction, I am not aware that  
8 the coronial system found any new adverse reactions.  
9 They reported on things that were already known.

10 **Q.** You've already helpfully described the position  
11 concerning the impact on Britain's access to the EU  
12 database, concerning safety. There is a database, is  
13 there not, called EudraVigilance?

14 **A.** (No audible answer)

15 **Q.** What impact do you think the lack of access to  
16 EudraVigilance from January 2021 has had, if any?

17 **PROFESSOR EVANS:** It meant that our immediate knowledge of  
18 very rare events was less than it might have been.

19 **Q.** From your analysis of the information before the  
20 Commission on Human Medicines, the MHRA, the DHSC, the  
21 JCVI and so on, and OCMO, does it appear that any of the  
22 European regulators were privy to safety-related  
23 information, significant information, when we weren't?

24 **PROFESSOR EVANS:** I cannot give you an example.

25 **Q.** You specifically address the issue of TTS, so thrombosis

72

1 with thrombocytopenia, so that's thrombosis with  
2 thrombocytopenia syndrome. This was an issue which  
3 arose in the spring of 2021. Have you reached a view,  
4 and we'll look at this in detail with Dame June Raine,  
5 but have you reached a view as to the appropriateness or  
6 not of the way in which the MHRA responded to that issue  
7 being brought to its attention, and the speed with which  
8 it responded?

9 **PROFESSOR EVANS:** My judgement is that they did. It was one  
10 of those things that, as was mentioned previously, could  
11 be caused by Covid as well as by the vaccine. And so it  
12 becomes quite difficult to disentangle the effects.

13 **Q.** Professor Prieto-Alhambra, pages 15 and 70 of your  
14 report, you also opine on this, and we'll receive,  
15 please, your view on that out of turn with the other  
16 conditions which you look at later in your report.

17 What is your view on the appropriateness of the  
18 regulator's response and the speed of response on TTS in  
19 spring of 2021?

20 **PROFESSOR PRIETO-ALHAMBRA:** As I explain in my report,  
21 I think it was an appropriate response. It was -- the  
22 signal was detected a bit later, but when I say "a bit",  
23 I'm talking days or weeks. And that could be caused  
24 also by the fact that the AstraZeneca vaccine was used  
25 in younger populations in continental Europe when

73

1 **Q.** Another subject, please. A source of continuing  
2 concern, and it's something about which a great deal  
3 many views have been expressed, is the question of  
4 whether or not vaccines themselves caused excess death.  
5 That is to say, whether vaccines killed people in  
6 significant numbers.

7 Bearing in mind that there were obviously, in very,  
8 very rare cases, a number of fatalities, and, in  
9 slightly less rare cases, serious side effects, was  
10 there nevertheless a general impact from vaccines on  
11 overall mortality rates?

12 **PROFESSOR EVANS:** As far as one can see, the studies that  
13 looked at mortality demonstrated that vaccines reduced  
14 mortality, and did not increase it in any way.

15 Looking at ecological studies, we call them, looking  
16 at the totals and not being able to identify whether  
17 deaths are occurring in vaccinated or unvaccinated  
18 individuals is not the best way of deciding whether  
19 vaccines are likely to affect the public health.  
20 Looking at totals can be affected by so many different  
21 things that they are very biased in making causal  
22 attribution of the effects.

23 **Q.** Professor Prieto-Alhambra, at your report at page 23, do  
24 you look at both the numerous studies which have been  
25 carried out, the estimates from a variety of different

75

1 compared to what we were doing in the UK, and that led  
2 to earlier identification of that signal.

3 **Q.** At page 68, Professor Evans, you say something about the  
4 public funding of vaccine studies in the context of  
5 phases I to III. We had understood that the studies  
6 were generally publicly funded, alongside, obviously,  
7 the management and the funding by the manufacturers  
8 themselves, but is there room or more public funding, in  
9 your opinion?

10 **PROFESSOR EVANS:** I think they -- room for more public  
11 funding in the post-authorisation studies, I think --

12 **Q.** So phase IV?

13 **PROFESSOR EVANS:** Yeah.

14 **Q.** Post-authorisation. But the way in which -- I mean, it  
15 looks as if, from these many trials or studies, sorry,  
16 which were carried on, that there was a great deal of  
17 public input by funding and participation?

18 **PROFESSOR EVANS:** Yes.

19 **Q.** Are you talking now about post-authorisation, randomised  
20 control trials?

21 **PROFESSOR EVANS:** I would like to see more of those, so that  
22 there --

23 **Q.** So formal control trials?

24 **PROFESSOR EVANS:** Yes. And if it's in phase IV, it's likely  
25 to be comparisons between, say, Pfizer and Moderna.

74

1 bodies but also, as Professor Evans has said, the  
2 mathematical models, and conclude that there is best  
3 quality evidence, good quality evidence, available to  
4 suggest that the vaccines, far from killing people in  
5 significant numbers, saved millions of lives?

6 **PROFESSOR PRIETO-ALHAMBRA:** All the good quality evidence  
7 I could find suggests that the vaccines saved hundreds  
8 of thousands or millions of lives globally.

9 **Q.** And to get an idea of the scale of your analysis, how  
10 many studies, estimates, mathematical models, as well as  
11 empirical studies, that is to say simple reporting of  
12 numbers of deaths and rates of deaths, compared against  
13 rates of vaccination, are there now in the public  
14 domain?

15 **PROFESSOR PRIETO-ALHAMBRA:** So the best evidence I could  
16 find includes the cohort studies, where one follows  
17 a group of people over time and observes how many of  
18 them die, so that's at the individual level, and there  
19 are many of those suggesting a reduction in mortality,  
20 as well as more global analysis of mathematical models  
21 that take the estimate of how effective the vaccine is,  
22 and then compute how many lives were saved by the  
23 vaccines. There's many, many studies in that regard,  
24 and the most recent one says that the vaccines saved  
25 over 14 million lives globally.

76

1 **Q.** Professor Evans, due to the exigencies of time, I've not  
2 asked you in detail about the last final figure about  
3 which the safety system is maintained, namely the way in  
4 which information about safety is given to members of  
5 the public through what's known as patient information  
6 leaflets and documents produced by the manufacturers  
7 called summary of product characteristics.

8 But in your report at page 73, do you have something  
9 to say about the PIL system, and do you observe that one  
10 of the problems, one of the rods that we've created for  
11 our own back as a country is there are so many ways in  
12 which members of the public can get access to  
13 information, from government websites, DHSC, Public  
14 Health England, MHRA, social media, the press, friends  
15 family, whatever, that a way to increase confidence  
16 might be to have a single site or a more clearly  
17 identified source of specific, scientific, medical  
18 safety-related information for individual medicinal  
19 products?

20 **PROFESSOR EVANS:** That, in a sense, is what the SPC and the  
21 PIL do. When there are alternative manufacturers of  
22 drugs, they can sometimes give slightly different  
23 information, because it's under the control of the  
24 manufacturer, but for the vaccines, I think that the PIL  
25 and SPC are a good way of standardising that information

77

1 to be high. Medicines are not like soap products.  
2 People can just put them on the market with very little  
3 regulation, but I think we need to have regulations for  
4 medicines.

5 **Q.** You say at (B) there need to be more randomised trials.  
6 Is that in the context of the point you made earlier,  
7 which was to the effect that post-authorisation, there  
8 are huge numbers of studies in the population at large,  
9 but by comparison, fewer formal randomised controlled  
10 trials, they need to be more at that level?

11 **PROFESSOR EVANS:** I think we need to make the authorisation  
12 of trials easier, and I have been an advocate for  
13 introducing vaccines through randomised trials,  
14 especially when there's shortage of vaccines, and using  
15 what's called cluster trials, so that you randomise  
16 Southampton to get Pfizer, let us say, and you randomise  
17 Portsmouth to get AstraZeneca, and then study the  
18 effects, and you then know that you've randomised and  
19 you've got groups that are similar.

20 **Q.** And finally on the question of data, is it your view  
21 that whilst there are numerous data sources, and it  
22 would seem from your evidence today, a profusion of  
23 information -- I mean, there's a mass of data out  
24 there -- there is nevertheless an unacceptable degree of  
25 fragmentation, that there is insufficient linkage

79

1 and ensuring that good information is there.

2 **Q.** Then, finally, another topic raised by a number of  
3 people is whether or not -- and this is page 74 of your  
4 report -- persons who have reported through the Yellow  
5 Card system could be updated by the regulator or some  
6 other government body in respect of emerging safety  
7 information related to the particular vaccine upon which  
8 they have reported. Do you think that's a sensible way  
9 of proceeding?

10 **PROFESSOR EVANS:** I think it's impractical. I think it  
11 might also discourage reporting because some people wish  
12 to report anonymously, and I think trying to have  
13 a system that got back to individuals is simply  
14 impractical.

15 **Q.** And then trying to draw all those threads together, do  
16 you make -- and there are four I want to focus on, four  
17 recommendations at page 76 onwards, Professor Evans --  
18 not, I think, by way of trying to identify, overly  
19 prescriptively, particular things that in your opinion  
20 need to be done, but perhaps more by way of calling  
21 generally for focus to be paid -- more focus to be paid  
22 to them, (A), you extol the importance of having trials  
23 that are as sufficiently powered, as large as they can  
24 be?

25 **PROFESSOR EVANS:** Yes, and I think the trial quality needs

78

1 between, for example, GP records and occupational  
2 records between the four nations of the United Kingdom  
3 and their health boards, and between GPs and, for  
4 example, hospitals. There needs to be a great deal more  
5 thought given to try to integrate the system to make it  
6 work better.

7 **PROFESSOR EVANS:** Absolutely. There is a tension between  
8 the availability of that kind of thing and personal  
9 privacy, and I think we need to have privacy-preserving  
10 linkage of data, as is done in OpenSAFELY.

11 **Q.** And Professor Prieto-Alhambra, you therefore may have  
12 the last word on this point. Do you also say in your  
13 report, page 70, paragraph ... I think I've lost the  
14 reference. I think it might have been 6.2. But you say  
15 that there needs to be thought given to the more rapid  
16 dissemination of data, and again, the drawing together  
17 of some of these quite fragmented systems or sources?

18 **PROFESSOR PRIETO-ALHAMBRA:** Yes, I think that's -- what  
19 I want to recommend is that there is routine linkage of  
20 all those datasets, pseudonymised as necessary, of  
21 course, but then also with the addition of expertise to  
22 analyse that data made available to MHRA on a regular  
23 basis.

24 **MR KEITH:** Thank you very much.

25 Professor Evans, those are all the questions I have

80

1 for you.  
2 Professor Prieto-Alhambra, can we now focus on your  
3 report.

4 **PROFESSOR EVANS:** I think I might take a break -- is that  
5 permitted -- while leaving Professor Alhambra here?

6 **LADY HALLETT:** Certainly. We'll call you if we need you.  
7 Or come back when you're ready.

8 **PROFESSOR EVANS:** I'll come back.

9 (Professor Evans left the hearing room)

10 **MR KEITH:** We can deal much more shortly with the first part  
11 of your report because many of the areas have been  
12 flagged up already, very helpfully, by you in the course  
13 of Professor Evans' evidence.

14 At page 2, you set out your general approach to what  
15 you did and what your report is concerned with.

16 The Inquiry did not seek to ask you to opine upon  
17 the objective safety of any individual vaccine, not  
18 least because safety is not something amenable to an  
19 objective classification or characterisation. Nor did  
20 we ask you to opine upon conclusively, in  
21 a determinative way, or pharmacoepidemiologically,  
22 whether any given vaccine gives rise to any given  
23 adverse effect, side effect.

24 Would it have been extremely difficult to express  
25 any view on the objective level of risk of a vaccine or

81

1 (Professor Stephens returned)

2 **PROFESSOR PRIETO-ALHAMBRA:** That is correct. I might add  
3 that we focused -- we tried to focus on those  
4 publications and reports that were available during the  
5 period of interest to the Inquiry because we thought  
6 those would be the ones that were of highest interest.

7 **Q.** And if we look at page 8 of your report, are there  
8 degrees of quality of the evidence which you found, upon  
9 which you then reached a view as to whether or not it  
10 may sensibly be said there is actually an association of  
11 some sort between the vaccine and the medical condition?  
12 So the quality of evidence might be very low, low,  
13 moderate, moderate-high, or high?

14 And briefly dealing with these first few pages, do  
15 you identify the particular type of vaccine, so the  
16 mRNA vaccine, Pfizer and Moderna, and the adenoviral  
17 vector vaccine, AstraZeneca?

18 If you say "yes" or "no" for the stenographer, that  
19 would help.

20 **PROFESSOR PRIETO-ALHAMBRA:** Yes.

21 **Q.** Thank you.

22 And do you agree with what Professor Evans has said  
23 about the lack of genetic consequence of the use of all  
24 those vaccines and that any notion that they have  
25 genetic impact is unfounded?

83

1 the likelihood of any individual side effect eventuating  
2 from its use, given the absence of a conclusive position  
3 scientifically, the relatively small amount of time  
4 which has elapsed since the pandemic, and also because  
5 it is extremely difficult to determine in any one given  
6 case whether or not the side effect is actually caused  
7 by the vaccine or is coincidental or is caused by Covid;  
8 is that a fair summary?

9 **PROFESSOR PRIETO-ALHAMBRA:** That is fair, yes.

10 **Q.** So what you've done instead is, in order to assist those  
11 persons who suffered side effects in these very rare  
12 cases, seriously, following vaccination, is you've  
13 scoured the public domain and the scientific and  
14 academic literature which is in it to see what level of  
15 evidence there is to support the proposition in every  
16 single case, whether or not that particular  
17 condition/side effect appears to be associated with  
18 a vaccine?

19 **PROFESSOR PRIETO-ALHAMBRA:** (Witness nodded)

20 **Q.** So that they may have some succour, they may know what  
21 the reality of the position appears to be.

22 **PROFESSOR PRIETO-ALHAMBRA:** (Witness nodded)

23 **Q.** And so the state can see, through this Inquiry, what the  
24 scale of the problem, if there is a problem, is.

25 Is that a fair summary?

82

1 **PROFESSOR PRIETO-ALHAMBRA:** I agree with Professor Evans'  
2 statement on that topic.

3 **Q.** [Page 11], you express your views on the general  
4 position about the regulatory structures and you draw  
5 favourable comparisons between us and the EMA, the FDA  
6 and Health Canada, and you've raised the question of the  
7 commissioning of PASS studies. I therefore don't need  
8 to deal with that in detail, but at page 13 you make the  
9 point that, again, like Professor Evans, safety cannot  
10 be characterised in objective terms, it is relative, and  
11 it's all about risk-benefit.

12 In terms of the risk-benefit and the obligation of  
13 the regulator to determine whether or not the benefit  
14 outweighs the risk, by what margin, in your view, must  
15 the MHRA be satisfied that the benefit exceeds the risk?  
16 Is it an equivocal balance or does the -- must the  
17 benefit greatly outweigh the risk?

18 **PROFESSOR PRIETO-ALHAMBRA:** I think they must be very  
19 satisfied that there's a lot of evidence that the  
20 benefit outweighs the risk. And I would say for  
21 vaccines, that's even more so, because of course we are  
22 not treating sick people but preventing sickness.

23 **Q.** Effectiveness and intended effects, does the scientific  
24 and medical evidence available, which you've reviewed,  
25 suggest, demonstrate, that the Covid-19 UK vaccines were

84

1 effective at the time that they were authorised?

2 **PROFESSOR PRIETO-ALHAMBRA:** Yes, and this is one of the few  
3 analysis where we have really high-quality evidence  
4 coming from large phase III trials.

5 **Q.** Were the -- is the evidence consistent between all the  
6 vaccines, all three vaccines, as to their effectiveness,  
7 and also as to the levels of effectiveness in each case?

8 **PROFESSOR PRIETO-ALHAMBRA:** They are consistent and they are  
9 well above the threshold set out by most of the  
10 regulators internationally.

11 **Q.** What does the evidence say about the levels of  
12 effectiveness in specific population subgroups?  
13 So is there a mass of information of real-world  
14 data, that's to say the reality of the rollout of the  
15 vaccines, and the intended effects becoming reality?  
16 Were the vaccines of less efficacy significantly in  
17 relation to any particular population subgroup?

18 **PROFESSOR PRIETO-ALHAMBRA:** Not to my knowledge. I think  
19 what's important to realise is that some of those  
20 subgroups of the population were not included in the  
21 trials, but data was generated using these electronic  
22 health records and observational studies, and suggested  
23 a similar level of effectiveness to that observed in the  
24 trials for the other part of the population.

25 **Q.** And do you have there particularly in mind pregnant

85

1 **Q.** What was the general impact of the variants of the  
2 SARS-CoV-2 virus on the effectiveness of the vaccines?

3 **PROFESSOR PRIETO-ALHAMBRA:** So what the data suggests, and  
4 I think UKHSA and the equivalents in the devolved  
5 nations did a great job at this, is that as new variants  
6 emerged, the effectiveness against symptomatic Covid  
7 declined, also combined with the waning of the vaccines  
8 themselves. However, there is very strong data  
9 suggesting that the vaccines still work to prevent  
10 severe outcomes, poor outcomes, like hospitalisation or  
11 death.

12 **Q.** So they continued to protect against the worst outcomes,  
13 death and hospitalisation, but were less effective in  
14 terms of preventing you from getting infected and being  
15 possibly symptomatic?

16 **PROFESSOR PRIETO-ALHAMBRA:** And potentially also they lost  
17 their ability to prevent transmission, we believe,  
18 because of this inability to prevent infection in the  
19 first place.

20 **Q.** Long Covid. Was -- it may seem self-evident --  
21 Long Covid was identified once we'd begun to try to deal  
22 with Covid, and to live with it, as being a medical  
23 condition consequent to the virus itself. So it  
24 couldn't have been studied in the trials for vaccines.  
25 But what does the data and the evidence say now about

87

1 women, breastfeeding women, who were excluded from the  
2 trials but who subsequently, in large part due to data  
3 emerging from America, in fact, large-scale data, were  
4 offered the vaccines?

5 **PROFESSOR PRIETO-ALHAMBRA:** (Witness nodded).

6 **Q.** And do the results and the data thereafter show that the  
7 vaccines worked?

8 **PROFESSOR PRIETO-ALHAMBRA:** Yes, specifically with pregnant  
9 women, they were not underrepresented; they were  
10 excluded, by design, from the trials and therefore it  
11 was extremely important that we had data on the efficacy  
12 or the effectiveness of the vaccines for them, also  
13 because they were having very severe outcomes when they  
14 got Covid. And, indeed, the data that I've seen to  
15 date, and I know there's more data being published  
16 because I've seen it in conferences, and results is all  
17 consistent with a high protective effect against severe  
18 Covid, even more recently.

19 **Q.** Children were excluded from trials. What does the  
20 real-world post-authorisation data say about the  
21 effectiveness of the vaccines on children?

22 **PROFESSOR PRIETO-ALHAMBRA:** Children were excluded from the  
23 initial trials but then there were trials conducted  
24 specifically for children where we did observe a similar  
25 efficacy. So there is trial data on children.

86

1 whether or not the vaccines helped protect against  
2 developing Long Covid?

3 **PROFESSOR PRIETO-ALHAMBRA:** Yes, so indeed Long Covid was  
4 not an outcome in the trials, but there is good quality  
5 cohort studies and observational studies suggesting that  
6 the existing vaccines prevent or helped to prevent  
7 Long Covid, through the prevention of infection in the  
8 first place and also through the prevention of the  
9 development of persistent or long-persisting symptoms.  
10 The effects that they might have on people who already  
11 have Long Covid are less clear.

12 **Q.** It is well known that, at the end of December 2020, the  
13 United Kingdom, against, I think, the trend elsewhere,  
14 determined that extending the dosage interval was a good  
15 idea, and not least because the prioritisation of the  
16 first dose meant more people could get some protection,  
17 rather than giving absolute full protection to a smaller  
18 number of people.

19 **PROFESSOR PRIETO-ALHAMBRA:** (Witness nodded).

20 **Q.** Does the data and the literature which you've examined  
21 show -- is it good quality evidence to the effect that  
22 that was the right decision, that the increase in the  
23 dosage interval had a generally beneficial impact?

24 **PROFESSOR PRIETO-ALHAMBRA:** Yes -- so I think there's two  
25 levels to this. At the personal level, most of the

88

1 trials had a shorter interval between doses than what we  
2 did in the UK, but there was at least one trial of the  
3 AstraZeneca vaccine where they observed a higher  
4 protective effect when the doses were a little bit  
5 farther apart. So at the personal level, that's all the  
6 evidence we had. At the population level, the fact that  
7 we could deliver one dose to double the population  
8 within a certain timeframe has proved very beneficial in  
9 terms of limiting the impact of the virus on people's  
10 lives.

11 So, overall, I think there's good evidence to say  
12 that that strategy worked really well.

13 **Q.** Transmission of the virus. There are two levels at  
14 which one must consider transmission, are there not?  
15 Firstly, how likely is it that you're going to get  
16 infected, but, secondly, how likely is it that you might  
17 then infect another person; is that right?

18 **PROFESSOR PRIETO-ALHAMBRA:** That's correct.

19 **Q.** And did you consider those two issues separately?

20 **PROFESSOR PRIETO-ALHAMBRA:** They are related, of course, not  
21 completely independent. They are related. But the  
22 likelihood that someone might get infected, even  
23 asymptotically, was studied in the trials, whilst the  
24 transmission of the virus was not. So the quality of  
25 the evidence for the former is higher than for the

89

1 been established to have been in any way connected with  
2 the vaccines, but side effects which have been brought  
3 to the attention of the authorities by members of the  
4 population who believe, rightly or wrongly, that they  
5 have been associated with the vaccines?

6 **PROFESSOR PRIETO-ALHAMBRA:** Yes, and unfortunately our  
7 science doesn't allow us to identify a causal  
8 association at the individual level, but we tried to  
9 focus on those adverse events that we thought could have  
10 changed how we managed the rollout of the vaccines.

11 **Q.** And so in each case, or in each -- in relation to each  
12 medical condition, have you looked at the degree of, or  
13 the amount of evidence and underlying data which  
14 suggests that there is an association with the vaccine?  
15 You've identified how much material suggests that the  
16 condition may in fact also, or alternatively, have been  
17 caused by the Covid virus itself, and you've also opined  
18 on -- or you've expressed a view on whether, in light of  
19 all that material, as it was known about at the time,  
20 the MHRA responded in an appropriate way when being  
21 informed of the problem?

22 **PROFESSOR PRIETO-ALHAMBRA:** That is correct. I think when  
23 it comes to the quality of evidence, we tried to combine  
24 the quality of the studies that we identified with their  
25 consistency, because if you had good quality studies but

91

1 latter.

2 **Q.** But in both cases, what does the evidence and the data  
3 upon which the evidence is based generally show in  
4 relation to the effect of the vaccines in reducing  
5 transmission?

6 **PROFESSOR PRIETO-ALHAMBRA:** The data suggests that the  
7 vaccines reduced transmission, at least during the early  
8 days of the vaccine rollout. That might have changed  
9 after there were new emerging variants, as I mentioned  
10 earlier.

11 **Q.** Now, the bulk of your report is on the topic of vaccine  
12 side effects and, as you've described, you've looked at  
13 the literature, and have you -- give us an idea of the  
14 nature of the exercise that you undertook. You and your  
15 colleagues -- and you were greatly assisted by your  
16 colleagues in this exercise --

17 **PROFESSOR PRIETO-ALHAMBRA:** Mm.

18 **Q.** How much material have you looked at here, Professor?

19 **PROFESSOR PRIETO-ALHAMBRA:** We read hundreds of published  
20 manuscripts and tens of reports from different  
21 regulatory authorities.

22 **Q.** And presumably covering the whole scope of vaccine side  
23 effects, of which, of course, there are very, very many  
24 to be mentioned, in the hundreds, and, I emphasise, not  
25 in terms of side effects or medical conditions that have

90

1 they were inconsistent or had conflicting results, then  
2 of course that would tell you there is less evidence for  
3 association.

4 **Q.** So if we could have, please, page 32 of your report up  
5 on the screen.

6 My Lady, unless you wish me to deal with it in  
7 another way, I'm going to focus exclusively on the very  
8 helpful summaries for each condition that  
9 Professor Prieto-Alhambra has identified.

10 These summaries, you've drawn for our benefit the  
11 text and the substance of your report, which runs to --  
12 pages 30 on to 80 or thereabouts, into summary boxes for  
13 each of the conditions, so -- for ease of understanding.

14 Myocarditis and pericarditis, you conclude that  
15 there was moderate-high quality evidence suggesting an  
16 association between those conditions and the Pfizer or  
17 Moderna vaccines, and it's "or" because they are both  
18 mRNA vaccines; is that right?

19 **PROFESSOR PRIETO-ALHAMBRA:** Correct. That is correct.

20 **Q.** In terms of the severity of outcome, this, would you  
21 describe as very -- as a rare condition, a rare adverse  
22 event, gave rise to some cases of hospital admission --  
23 is there any material to suggest that there was anything  
24 other than extremely rare fatality or, indeed, some  
25 studies suggest no associated fatality?

92

1 **PROFESSOR PRIETO-ALHAMBRA:** There's many, many reports of  
2 myocarditis or pericarditis following the vaccines, with  
3 very few fatalities, and of course it's hard to know  
4 whether those were related to the condition in the first  
5 place or not.

6 **Q.** But the studies themselves don't talk in terms of even  
7 there being the possibility of large numbers of  
8 fatalities being associated with the mRNA vaccines. The  
9 evidence and the data, even at the highest point, puts  
10 the number of possible fatalities at a very low level.

11 **PROFESSOR PRIETO-ALHAMBRA:** A very low number indeed.

12 **Q.** Right. And does the data suggest, in fact --  
13 paragraph 5.16 -- that whilst there is a risk of  
14 myocarditis after vaccination, the risk was much lower  
15 compared to that seen following Covid infection in the  
16 unvaccinated. And, I should say, that's the conclusion  
17 of one particular study to which you refer. Was that  
18 outcome, that proposition, consistent with the  
19 generality of the material you looked at?

20 **PROFESSOR PRIETO-ALHAMBRA:** That is correct. And I would  
21 say this study, in particular, by Patone et al, is  
22 probably one of the best quality studies on this topic.

23 **Q.** Turning, then, to the system response and the way in  
24 which the condition of myocarditis and pericarditis  
25 emerged, do you reach the view that the MHRA's response

93

1 you would be potentially causing harm.

2 **Q.** You're allowing people to die?

3 **PROFESSOR PRIETO-ALHAMBRA:** Yes.

4 **Q.** So your assessment of the appropriateness of the  
5 regulator's response, coming back to Professor Evans'  
6 evidence, has to take into account this risk-benefit.  
7 You must weigh up the number of deaths and the  
8 likelihood of deaths which would occur if you don't  
9 vaccinate against a very rare possibility, in the case  
10 of myocarditis, of hospitalisation, from the vaccine?

11 **PROFESSOR PRIETO-ALHAMBRA:** That is --

12 **Q.** That's the balance?

13 **PROFESSOR PRIETO-ALHAMBRA:** That is correct. There are, of  
14 course, other actions that a regulator can take and did  
15 take, including making the public aware of this problem  
16 so they could seek care when they felt unwell, or  
17 monitoring more closely the data on particular -- in  
18 particular subgroups for myocarditis, pericarditis, we  
19 know that there is evidence that there was a higher risk  
20 for younger men after the second dose, for example. So  
21 all those things are important, and they do not cause  
22 any harm.

23 **Q.** TTS, thrombosis with thrombocytopenia syndrome. Did the  
24 material and the data show that there was an  
25 association, in rare cases, with AstraZeneca?

95

1 was appropriate, given the nature of the safety signals  
2 which were then emerging?

3 **PROFESSOR PRIETO-ALHAMBRA:** Indeed, I think it was  
4 appropriate, partly because both the virus you were  
5 preventing with the vaccine and the vaccine itself could  
6 potentially cause this condition but also because, of  
7 course, the Covid vaccines also prevented many other  
8 problems, including, of course, heart failure and  
9 respiratory failure due to the infection. So the  
10 benefit-risk seemed to be consistent and balanced. And  
11 the actions taken were also very much in line with those  
12 taken by many other regulators, internationally.

13 **Q.** Bluntly, if a country is in the course of a vaccination  
14 campaign and the vaccine is known and obviously prevents  
15 death, in the case of Covid, vaccination prevented  
16 deaths on a daily basis, and is now recognised to have  
17 saved hundreds of thousands of lives in the United  
18 Kingdom, if you stop a programme, do people -- will  
19 people start dying in greater number because they have  
20 not got the beneficial effect of the vaccine?

21 **PROFESSOR PRIETO-ALHAMBRA:** So, of course, the  
22 counterfactual of vaccination is, in the case of Covid,  
23 with its transmissibility, getting Covid without being  
24 vaccinated, and therefore, when you stop, if you stop  
25 a vaccination programme like this based on that signal,

94

1 **PROFESSOR PRIETO-ALHAMBRA:** Yes, again we have moderate to  
2 high quality data suggesting an association.

3 **Q.** TTS can sometimes be fatal, can it not?

4 **PROFESSOR PRIETO-ALHAMBRA:** It is, and it's also said, and  
5 there is evidence to say that it was more severe or more  
6 fatal at the beginning when we started learning about  
7 these effects and it probably got more treatable as we  
8 learned more about it.

9 **Q.** How rare is it as a condition?

10 **PROFESSOR PRIETO-ALHAMBRA:** Yes, so looking at the Yellow  
11 Card reports from the MHRA, it says it's around 22 per  
12 million doses in people below the age of 50, and about  
13 half of that in people older than 50.

14 **Q.** So 21.8 cases per million, and 11.3 per million in those  
15 aged 50 or older, and then a proportion of those very,  
16 very rare number of cases led to fatalities?

17 **PROFESSOR PRIETO-ALHAMBRA:** Yes. I think the MHRA estimates  
18 are about one in four overall.

19 **Q.** All right. And the quality of evidence, I may have  
20 asked you already, showing or demonstrating an apparent  
21 association is good or high?

22 **PROFESSOR PRIETO-ALHAMBRA:** It's very similar to the quality  
23 of evidence on myocarditis/pericarditis, so it's  
24 moderate-high, meaning that we have cohort studies and  
25 self-control studies with adequate control for

96



1 confounding and -- and biases.

2 **Q.** Can blood clots, however, be caused by Covid itself?

3 **PROFESSOR PRIETO-ALHAMBRA:** There is similar quality of  
4 evidence suggesting that blood clots, including the rare  
5 blood clots of the brain, also known as CVST, can be  
6 also caused by Covid disease.

7 **Q.** And are your conclusions and is your view similar to the  
8 view taken or rather, is the evidence and the data  
9 you've looked at similar to that which is available in  
10 Europe, as far as you're aware?

11 **PROFESSOR PRIETO-ALHAMBRA:** Yes. Very similar. This is  
12 a point in my report where I think I make  
13 a recommendation that a better or more formal  
14 collaboration could help, because the fact that the  
15 AstraZeneca vaccine was used for a very different  
16 population in Europe made it -- gave an opportunity for  
17 a sharing of data earlier on.

18 **Q.** The -- not every European country adopted a rollout  
19 prioritisation system in the way that we did by focusing  
20 on the very elderly first, along with their carers, and  
21 working down through the ages.

22 **PROFESSOR PRIETO-ALHAMBRA:** Most of them did, but the  
23 AstraZeneca vaccine, as I mentioned earlier, was --  
24 there was less representation of very elderly people in  
25 the trials, and some countries like France or Spain, for

97

1 **PROFESSOR PRIETO-ALHAMBRA:** This one is classified as a very  
2 rare side effect.

3 **Q.** And can it be caused by Covid itself?

4 **PROFESSOR PRIETO-ALHAMBRA:** And it can be caused by Covid  
5 itself, and there's good evidence on that as well.

6 **Q.** Paragraph 5.60. Is there a greater risk, indeed, that  
7 it might be caused by Covid as opposed to the vaccines?

8 **PROFESSOR PRIETO-ALHAMBRA:** So again, there is at least a  
9 very good quality study, in fact two in this case,  
10 suggesting that the excess risk is even more following  
11 Covid in the unvaccinated people than following the  
12 vaccination with the AstraZeneca vaccine.

13 **Q.** No trials were stopped or paused on account of the  
14 emergence in study cases of Guillain-Barré syndrome, and  
15 it wasn't, I think -- there was no time, was there, when  
16 cases of Guillain-Barré syndrome started to emerge which  
17 led to specific consideration by the MHRA of whether or  
18 not to pause authorisation, by comparison to the debate,  
19 which we'll look at with June Raine, about TTS and  
20 myocarditis; is that right?

21 **PROFESSOR PRIETO-ALHAMBRA:** I don't think so.

22 **Q.** All right.

23 **PROFESSOR PRIETO-ALHAMBRA:** Not to my knowledge.

24 **Q.** Bell's Palsy, page 44, is a rare weakness or lack of  
25 movement on one side of the face, so you described it as

99

1 example, tended to prioritise the use of the AstraZeneca  
2 vaccine for younger people because they thought they  
3 didn't have enough evidence that it would work in the  
4 older populations.

5 **Q.** And is that why certain medical conditions started  
6 appearing in Europe first, because generally speaking,  
7 AstraZeneca was given to a different age cohort than it  
8 was being given in Britain?

9 **PROFESSOR PRIETO-ALHAMBRA:** I speculate in my report that  
10 that might be the case because, indeed, this condition  
11 was more common, as I mentioned, in younger people, and  
12 those were the ones being vaccinated with this vaccine  
13 earlier on in those countries.

14 **Q.** Page 41, Guillain-Barré syndrome. What is that  
15 syndrome?

16 **PROFESSOR PRIETO-ALHAMBRA:** So Guillain-Barré syndrome is an  
17 autoimmune and inflammatory condition of the central  
18 nervous system that leads to muscle weakness, and it can  
19 be life threatening. It can be quite severe.

20 **Q.** What was the quality of evidence suggesting an  
21 association with AstraZeneca, and in fact Janssen?

22 **PROFESSOR PRIETO-ALHAMBRA:** Again, very similar to the  
23 previous. So this would be moderate-high, meaning that  
24 there are good quality observational studies.

25 **Q.** Rare, very rare, or extremely rare?

98

1 rare. Rarely serious or fatal. It may not always  
2 resolve completely. Is there evidence to suggest an  
3 association with the AstraZeneca, Janssen, Moderna, and  
4 Pfizer vaccines?

5 **PROFESSOR PRIETO-ALHAMBRA:** Yeah, again, this is what we  
6 classified as moderate-high quality evidence, meaning  
7 that there is good quality observational studies, in  
8 this case with a little bit less consistency across  
9 them.

10 **Q.** And can you draw -- do you have a conclusion as to the  
11 comparative levels of risk between getting Bell's palsy  
12 from a vaccine as opposed to from coronavirus itself?  
13 Paragraph 5.67.

14 **PROFESSOR PRIETO-ALHAMBRA:** Yes, there is again a number of  
15 studies that suggest there is an association between  
16 SARS-CoV-2 or Covid and Bell's palsy.

17 **Q.** Transverse myelitis. We recall that there were three or  
18 four, I think, cases of suspected transverse myelitis in  
19 the course of the trials for one of the vaccines. Is it  
20 a very rare or extremely rare medical condition?

21 **PROFESSOR PRIETO-ALHAMBRA:** This is sitting somewhere  
22 between very rare and extremely rare, with a likelihood  
23 or a rate of around or below one in 100,000 doses.

24 **Q.** No regulator, did it, reached the conclusion that the  
25 transverse myelitis cases which emerged in the course of

100

1 the safety trials was in fact causatively connected to a  
 2 vaccine, did it?  
 3 **PROFESSOR PRIETO-ALHAMBRA:** No, there was -- as we discussed  
 4 before, there was the halting of one of the trials in  
 5 the UK because of a case, but then that was resolved and  
 6 the trial continued later on.  
 7 **Q.** And is that reflected in the quality of evidence  
 8 suggesting an association with any vaccine, but  
 9 particularly AstraZeneca and Janssen, is the quality of  
 10 evidence suggesting any association good, bad or low --  
 11 or good -- very good, good or low?  
 12 **PROFESSOR PRIETO-ALHAMBRA:** Here we thought it was low or  
 13 moderate at best, because there's good quality studies  
 14 but they're not consistent; some of them find  
 15 association, some of them don't.  
 16 **Q.** Page 48, immune thrombocytopenia. Is this a condition  
 17 which, in the past, has been associated with previous  
 18 vaccines?  
 19 **PROFESSOR PRIETO-ALHAMBRA:** It is, and it was, therefore,  
 20 monitored again, as an adverse event of special interest  
 21 by most regulators internationally, including by the  
 22 MHRA.  
 23 **Q.** And post-authorisation, has it identified itself as  
 24 a rare or extremely rare condition?  
 25 **PROFESSOR PRIETO-ALHAMBRA:** The data I have seen says it's  
 101

1 of this condition going forward.  
 2 **Q.** Capillary leak syndrome, you conclude on page 50 that  
 3 the quality of evidence suggesting association with the  
 4 vaccines is low. Acute disseminated encephalomyelitis,  
 5 page 51, an extremely rare condition, you say the  
 6 quality of the evidence suggesting association is  
 7 low-moderate.  
 8 And anaphylaxis, which is the severe allergic  
 9 reaction, page 53, you say the level of evidence  
 10 suggesting an association is, again, low quality.  
 11 So the material doesn't appear in each of those  
 12 cases to suggest -- or at least there's only low quality  
 13 evidence to suggest that there is an association of any  
 14 type with a vaccine, let alone causative.  
 15 Could we have up paragraph 5.119, please.  
 16 Did you go through all the Core Participant witness  
 17 statements and identify a very long list of medical  
 18 conditions and health issues to which they refer, draw  
 19 them up in your paragraph 5.119, and then scour the  
 20 academic and scientific literature for what they said  
 21 about these conditions and reach a view as to whether or  
 22 not the literature showed a sufficient degree of  
 23 association as to merit, in your view, further enquiry?  
 24 **PROFESSOR PRIETO-ALHAMBRA:** So we were provided with that  
 25 evidence, and there's a long list indeed, of -- I think  
 103

1 around ten per 100,000, so that would be rare.  
 2 **Q.** And is it a condition which can be caused by Covid  
 3 itself?  
 4 **PROFESSOR PRIETO-ALHAMBRA:** It is, again, a condition that  
 5 we have good evidence can be -- suggests it can be  
 6 triggered by Covid itself.  
 7 **Q.** In relation to immune thrombocytopenia, did the expert  
 8 working group of the Commission on Human Medicines in  
 9 fact give advice on this condition in the spring and  
 10 autumn of 2021 to the MHRA?  
 11 **PROFESSOR PRIETO-ALHAMBRA:** There are discussions in  
 12 April 2021 on this topic already, yes.  
 13 **Q.** And in light of the risk-benefit analysis and the  
 14 overall benefits of the vaccination programme, did the  
 15 MHRA on both occasions determine that vaccination should  
 16 proceed, albeit notification and publications concerning  
 17 the vaccines were amended?  
 18 **PROFESSOR PRIETO-ALHAMBRA:** That is correct.  
 19 **Q.** And was that an appropriate cause to take, in your view?  
 20 **PROFESSOR PRIETO-ALHAMBRA:** I think it was an appropriate  
 21 course, again in line with that taken by many other  
 22 regulators, including neighbouring European Medicines  
 23 Agency. The MHRA I think also, importantly, consulted  
 24 consultant haematologists and tried to work on an  
 25 operational case definition to facilitate the monitoring  
 102

1 it is 80 or 81 conditions in my report, for which we  
 2 conducted a quick review of the literature in PubMeds  
 3 and tried to identify where we could see any evidence of  
 4 an association, and then go on to make recommendations  
 5 on which of these conditions could potentially merit  
 6 further research.  
 7 I want to add that it is -- the fact that for some  
 8 of these there is no published evidence that doesn't  
 9 necessarily mean that there isn't an association; it  
 10 just means that maybe they are too rare or too complex  
 11 or nobody has investigated them. But of course the  
 12 absence of evidence doesn't equate to evidence of  
 13 absence of an association in this case.  
 14 **Q.** But it says something about the degree or scale of the  
 15 problem, if there is one.  
 16 And you identify, if you go back to [pages 56/57],  
 17 14 of that long list, I think there's -- perhaps even  
 18 110 conditions you've looked at, but 14 of them, chronic  
 19 obstructive pulmonary disease, varicella-zoster-virus  
 20 reactivation, ie shingles, seizures, shoulder injury  
 21 related to vaccine administration, tinnitus, autoimmune  
 22 connective tissue disease, rheumatoid arthritis,  
 23 systemic lupus -- I'm not sure I can go on, I'm bound to  
 24 fall into error if I try to pronounce any more of  
 25 these -- fibromyalgia, Graves' disease, depression,  
 104

1 optic neuritis, and heart failure, you conclude that  
 2 there is some material to suggest an association, and  
 3 therefore they are conditions which would merit from  
 4 further investigation by, in particular, the MHRA?  
 5 **PROFESSOR PRIETO-ALHAMBRA:** Indeed, I just want to add that  
 6 some of those -- in fact, some of those published  
 7 manuscripts do suggest no association. So it's not true  
 8 that all of them had an association. It is just true  
 9 that there is some evidence, or some literature study --  
 10 **Q.** There is at least one study --  
 11 **PROFESSOR PRIETO-ALHAMBRA:** Yes.  
 12 **Q.** -- that says something about the possibility of an  
 13 association?  
 14 **PROFESSOR PRIETO-ALHAMBRA:** Yes, and in some cases like, for  
 15 example, COPD, that study was neutral saying there is no  
 16 association. So I then go on to review each one of them  
 17 in the summary box in page 55 -- (overspeaking) --  
 18 **Q.** In the remainder of that very long list you found  
 19 nothing --  
 20 **PROFESSOR PRIETO-ALHAMBRA:** -- (overspeaking) --  
 21 **Q.** -- and therefore you don't even suggest that there is  
 22 a further inquiry into those other conditions?  
 23 **PROFESSOR PRIETO-ALHAMBRA:** I do not think -- I think we  
 24 should prioritise the ones where we do see at least some  
 25 evidence of an association, currently.

105

1 **Q.** Excess deaths, you've already expressed your view on --  
 2 thank you very much, page 68. And then you make a  
 3 number of recommendations at page 70. I just want to  
 4 pick up just three of them.  
 5 At A you refer to the regulatory rolling review  
 6 which was in place, but you say it should be replicated.  
 7 B, you make the point you made earlier, as did  
 8 Professor Evans, there needs to be a better joining up  
 9 of data to track vaccine risks and benefits in real  
 10 time.  
 11 **PROFESSOR PRIETO-ALHAMBRA:** Mm-hm.  
 12 **Q.** D, this is the point you made earlier about PASS studies  
 13 being commissioned or rather not being commissioned by  
 14 us but being commissioned by the FDA and the EMA, there  
 15 needs to be a mechanism for the commissioning and  
 16 funding of specific studies for post-marketing vaccine  
 17 safety, and perhaps, Professor Evans would say, if I can  
 18 speak for him, of a randomised control nature.  
 19 And then E, you identify the 14 conditions which you  
 20 looked at and which you suggest there should be further  
 21 consideration of.  
 22 And H, there must also be a continuing focus on  
 23 proper diversity in vaccine clinical trials.  
 24 Are those the most important of your  
 25 recommendations?

107

1 **Q.** All right. And then finally, in relation to menstrual  
 2 disorders, page 63, you say there is no good quality  
 3 studies to suggest evidence of a long-term impact of the  
 4 Covid vaccines on menstruation.  
 5 Page 65, you make what might be thought to be a very  
 6 obvious point, which was there were multiple mild and  
 7 temporary side effects identified in the trials, as  
 8 Professor Evans has said?  
 9 **PROFESSOR PRIETO-ALHAMBRA:** Yes.  
 10 **Q.** But also apparent from real-world data, injection site  
 11 reactions, fever, fatigue, and flu-like symptoms?  
 12 **PROFESSOR PRIETO-ALHAMBRA:** Correct.  
 13 **Q.** And then there were a number of publicly-reported  
 14 alleged side effects which, on investigation, you were  
 15 able to satisfy yourself could not be confirmed, that is  
 16 to say they did not appear to be right. One, that there  
 17 was any adverse effect on pregnancy, there was no  
 18 support, no material, to suggest any adverse effect on  
 19 pregnancy.  
 20 **PROFESSOR PRIETO-ALHAMBRA:** No good-quality data suggesting  
 21 that, no.  
 22 **Q.** Page 67, no good-quality material -- in fact, you said  
 23 no study to date to demonstrate an association between  
 24 Covid-19 vaccines and fertility in male or female form?  
 25 **PROFESSOR PRIETO-ALHAMBRA:** Correct.

106

1 **PROFESSOR PRIETO-ALHAMBRA:** I think so, yes.  
 2 **MR KEITH:** Thank you very much. And those are all the  
 3 questions I have.  
 4 **LADY HALLETT:** Thank you.  
 5 Ms Morris, I think you have couple of questions for  
 6 Professor Evans.  
 7 **Questions from MS MORRIS KC**  
 8 **MS MORRIS:** I do, my Lady, thank you.  
 9 Good afternoon, Professor Evans. I ask questions on  
 10 behalf of the Covid vaccine Adverse Reaction and  
 11 Bereaved groups, just so you understand the context of  
 12 my questions, and I have two questions on two discrete  
 13 topics, please, one about the patient information  
 14 leaflet, and its use at the time of the pandemic; and  
 15 the second, a more forward-looking question about  
 16 adverse effect reporting. Okay?  
 17 So my first topic, patient information leaflets.  
 18 One of the observations you made in your report was that  
 19 one study you'd considered found that nearly 20% of  
 20 individuals had never read the patient information  
 21 leaflet, and you said that over half of the respondents  
 22 in that study, 56%, never sought more information about  
 23 the possible side effects of medicine.  
 24 So my question is going to be about accessibility  
 25 and the information provided. Just as a point of

108

1 information, can you assist with, is there any analysis  
2 or any studies as to how many of those vaccinated  
3 actually received a patient information leaflet? Is  
4 that data available?

5 **PROFESSOR EVANS:** I'm not aware of that. The UK, as  
6 I understand it, from one of the manufacturer's  
7 evidence, was one of the few states to demand a paper  
8 patient leaflet that could be given and made available  
9 at vaccination centres. In many instances, there was  
10 simply a QR code which enabled somebody with a mobile  
11 phone to scan it and go to a website, and find the  
12 information. From the manufacturer's point of view,  
13 that meant that everything was always up to date,  
14 whereas a paper leaflet may not be up to date, and  
15 keeping a paper leaflet up to date when you're dealing  
16 with millions of vaccinations is very difficult.

17 I am not -- I think it's very likely, and from my  
18 own experience very likely, that the majority of  
19 patients getting Covid vaccinations did not read a PIL.  
20 **Q.** Thank you. But in terms of whether they had them or  
21 not, I only ask that because, from the -- one of the  
22 groups I represent, the evidence that they've provided  
23 to the Inquiry is that only 19% of that particular group  
24 were actually given -- I wonder if there was any data on  
25 that, any studies that have been completed?

109

1 Professor, was about the ability for vaccine injury to  
2 be reported. One of the things the Vaccine Injured and  
3 Bereaved have suggested is that the NHS app, so the app  
4 that we can download onto our phones, includes a feature  
5 that allows individuals to report vaccine injury  
6 directly through that app. You've talked a bit about  
7 data and connectivity; is that something that would have  
8 your support as a proposal?

9 **PROFESSOR EVANS:** There has been an app to report adverse  
10 reactions, a Yellow Card app, since 2015. And so  
11 I don't see adding it to the NHS App is a key element.  
12 That would lead to complexity. The NHS App is not  
13 designed to connect to the Yellow Card system. Perhaps  
14 to have on the NHS App something that tells you about  
15 the Yellow Card app may be more practical.

16 It sounds a great idea, but practicality and  
17 existence of an existing one I would say is better.

18 **Q.** A single point of access is important?

19 **PROFESSOR EVANS:** Not necessarily.

20 **MS MORRIS:** Okay, thank you.

21 Thank you, my Lady.

22 **LADY HALLETT:** Ms Banton.

#### 23 Questions from MS BANTON

24 **MS BANTON:** Thank you, my Lady.

25 I appear on behalf of FEMHO, the Federation of

111

1 **PROFESSOR EVANS:** I'm not aware of that.

2 I think, if I may just add a comment, that I would  
3 wish to express my enormous sympathy with those who have  
4 died following vaccination, and I think there are  
5 undoubtedly cases where a vaccine has led to death.

6 There are deaths following vaccination that may not  
7 be as a result of the vaccine, but I think, as  
8 a community, we have to acknowledge that that does  
9 happen in extremely rare cases, and that such people  
10 need to be looked after properly, and their relatives  
11 and those who are bereaved need proper treatment. And  
12 so anything I've said about those things, I'd want to  
13 acknowledge the pain and the loss in those  
14 circumstances.

15 **Q.** Thank you for those comments. And I'm sure that extends  
16 to those that have been injured by the vaccine?

17 **PROFESSOR EVANS:** Yes, absolutely.

18 **Q.** Yes, thank you.

19 Just returning back to the information leaflet --

20 **LADY HALLETT:** I think you're going to have to move on,  
21 Ms Morris. You've asked questions for which I didn't  
22 give permission, and if you want to get in a second  
23 question, I'd suggest you ask it now.

24 **MS MORRIS:** Thank you.

25 The forward-looking question I wanted to ask you,

110

1 Ethnic Minority Healthcare Organisations, and FEMHO is  
2 concerned that there is an underrepresentation of black,  
3 Asian and minority ethnic people during  
4 pharmacovigilance monitoring, and that raises questions  
5 about whether there was underreporting of race-related  
6 adverse outcomes in vaccine usage. That's the general  
7 premise.

8 Sickle cell anaemia is a blood disorder that  
9 primarily affects black, Caribbean, and African people.  
10 Are you aware of any targeted pharmacovigilance  
11 monitoring of the performance of vaccines for this  
12 particular subgroup?

13 **PROFESSOR PRIETO-ALHAMBRA:** I am not aware of a targeted  
14 pharmacovigilance activity for people with sickle cell  
15 disease or sickle cell anaemia. I would say this is  
16 a case where I would expect the vaccines to be  
17 potentially more beneficial even than for the general  
18 population, given the likelihood that these people might  
19 get more severe outcomes when they catch Covid, and  
20 I think they could and should be included in  
21 post-marketing authorisation studies.

22 **Q.** So you would say that, in your view, there is value in  
23 the targeted pharmacovigilance monitoring, like in the  
24 sample of sickle cell sufferers?

25 **PROFESSOR PRIETO-ALHAMBRA:** In the form of

112

1 post-authorisation studies, observational studies --  
 2 I think I make a generic recommendation in my report,  
 3 I think it's recommendation I, where I say we should  
 4 make sure that there is good monitoring of vaccine  
 5 effectiveness in people who have been underrepresented  
 6 or literally excluded from trials, like pregnant women,  
 7 the minute the vaccines are rolled out. And I think  
 8 this is an illustrative example of precisely that,  
 9 a group that could benefit from that kind of study being  
 10 done when the vaccines are approved.

11 **MS BANTON:** Thank you so much, Professor.

12 If I may, my Lady, may I ask the same question of  
 13 Professor Evans, just on the same point in relation to  
 14 sickle cell?

15 **LADY HALLETT:** I don't think we need it, do we? Thank you  
 16 very much.

17 **MS BANTON:** Thank you very much, my Lady.

18 **LADY HALLETT:** I think I've got the point.

19 **MS BANTON:** Thank you.

20 **LADY HALLETT:** Very well, that completes the questions we  
 21 have for you, Professors. I'm really grateful to you  
 22 for your help, you've obviously done a huge amount of  
 23 work, and you explained it in ways that I could  
 24 understand and, I hope, that those following could  
 25 understand. So thank you both very much indeed for all

113

1 questions about your professional background. You are,  
 2 as is well known, the chief executive of the Medicines  
 3 Healthcare products Regulatory Agency, or MHRA as we're  
 4 going to call it from now on.

5 You were, a while back, within the medicines  
 6 division of the Department of Health as a senior medical  
 7 officer. And then I think you were principal assessor  
 8 to the Medicines Commission, and then director of  
 9 post-licensing division of the Medicines Control Agency.  
 10 So you've got many years' experience in the field of  
 11 safety processes, if I may put it in that very general  
 12 way; is that right?

13 **A.** I have.

14 **Q.** And were you, in fact, specifically responsible for the  
 15 operation of what we know to be the Yellow Card scheme  
 16 about which we'll be -- which we'll be looking at in  
 17 some detail later this afternoon, when you were in the  
 18 post-licensing division of the Medicines Control Agency?

19 **A.** Yes, I was.

20 **Q.** Were you also chair of the pharmacovigilance risk  
 21 assessment committee of the EMA, the European Medicines  
 22 Agency, and have you been a member, and are you  
 23 subsequently still a member of, and I think you may be  
 24 the co-chair now, of the WHO's advisory committee on  
 25 safety of medicinal products?

115

1 your assistance and for your time today.

2 The Internet says 1.10, so I shall return at 2.10.

3 (The witnesses withdrew)

4 **(1.10 pm)**

5 **(The Short Adjournment)**

6 **(2.10 pm)**

7 **MR KEITH:** My Lady, this afternoon's witness is Dame June  
 8 Raine. If she could be sworn, I'd be very grateful.

9 **DAME JUNE RAINE (sworn)**

10 **LADY HALLETT:** I hope you haven't been waiting too long,  
 11 Dame June.

12 **THE WITNESS:** No, your Ladyship.

13 **Questions from LEAD COUNSEL TO THE INQUIRY for MODULE 4**

14 **MR KEITH:** Could you commence your evidence, please, by  
 15 giving us your full name.

16 **A.** My name is June Munro Raine.

17 **Q.** Thank you very much, Dame June. And thank you very much  
 18 for your attendance today and also for providing the two  
 19 witness statements which you have, dated  
 20 11 September 2024, and then, in response to a particular  
 21 query raised of the MHRA by us, a second statement dated  
 22 20 December 2024.

23 We're very grateful to you for assisting us with the  
 24 provision of that evidence.

25 I'd like to just start, please, by asking you some

114

1 **A.** May I correct that. I have recently stepped down from  
 2 that role.

3 **Q.** Well, I'm very pleased to hear that you've eased up  
 4 somewhat on the extent of your professional functions.

5 Dame June, you will have been aware from the opening  
 6 to Module 4 of the scope of this module, and the general  
 7 approach which it is applying to the consideration of  
 8 the matters which are within the scope of its review in  
 9 this hearing.

10 I don't propose to ask you very many questions about  
 11 the structures and the processes concerned with safety  
 12 and side effects, because I opened them at length, we've  
 13 heard a lot in the expert evidence from other witnesses  
 14 about what they amount to and what they consisted of.  
 15 But what we're interested in is focusing on particular  
 16 aspects of the systems for which the MHRA was  
 17 responsible, in order to learn from your evidence what  
 18 went well, and what didn't go quite so well, and  
 19 focusing on what matters, rather than the generality of  
 20 the position. Do you follow?

21 **A.** Thank you.

22 **Q.** And so we're going to focus on a number of discrete but  
 23 important issues which have been raised in part in the  
 24 course of this hearing by the Core Participant groups in  
 25 particular.

116

1 The MHRA is the UK's regulator of medicines, medical  
2 devices, and blood components for transfusion, is it  
3 not?

4 **A.** Yes.

5 **Q.** And so in very general terms, is the MHRA the body  
6 responsible for ensuring the safety, as well as the  
7 quality and the effectiveness of all those medicines and  
8 medicinal products?

9 **A.** Yes, it is, though I would perhaps phrase that our role  
10 is to ensure that these healthcare products, vital  
11 products, work and are acceptably safe.

12 **Q.** We'll look at that in a moment but that obligation to  
13 ensure they are acceptably safe lies at the heart of  
14 your functions?

15 **A.** It does.

16 **Q.** Although you are an executive agency within the DHSC, is  
17 that correct, are you nevertheless operationally  
18 independent?

19 **A.** Yes.

20 **Q.** What does that mean, in practice, being operationally  
21 independent?

22 **A.** It means that the decisions on safety, quality,  
23 efficacy, based on evidence, are solely the  
24 responsibility of the agency. And, as I'm sure is clear  
25 from what other witnesses have shared with the Inquiry,

117

1 health ministers. Therefore we were wanting to assure  
2 that health ministers had all appropriate advice.

3 **Q.** And we'll look at the CHM in a moment, but thank you for  
4 that.

5 In addition, to ensure the reality and appearance of  
6 independence, because the DHSC was of course intimately  
7 involved through the Vaccine Taskforce and other bodies  
8 in the purchase and deployment of vaccines, did you put  
9 into place a system whereby the Licensing Minister, to  
10 whom you have referred, was a separate government  
11 minister to the Secretary of State and the other  
12 ministers involved in deployment and delivery and so on?

13 **A.** We did, and we felt that was extremely important, that  
14 the decisions on which we offered advice, and on which  
15 the Commission on Human Medicines offered advice, were  
16 entirely separated from decisions of procurement and any  
17 financial considerations.

18 **Q.** Is the MHRA a UK executive agency, a UK regulator?

19 **A.** It is.

20 **Q.** And therefore, were the decisions that you took made on  
21 behalf of all the nations within the United Kingdom?

22 **A.** Yes, and it meant that we would, as we normally do,  
23 engage closely with the devolved governments to ensure  
24 that there was a good understanding of our activities,  
25 processes, and likely directions.

119

1 the independence of those decisions is basically our  
2 licence to operate.

3 **Q.** Normally, and in many cases, the MHRA will take  
4 a decision, in the scope of its functions, on behalf of  
5 the Secretary of State of Health and Social Care. But  
6 in the context of Covid-19, we've seen from the evidence  
7 that a UK minister in fact acted as the final decision  
8 maker on authorisation, as the Licensing Minister.

9 Why, in the context of Covid-19, did you put this  
10 particular provision, this particular process, in place?

11 **A.** Clearly, operationally, the agency's responsible for  
12 many decisions at any one time, but the significance of  
13 novel products that would be used in many people meant  
14 that the independence and rigour of the decision making  
15 needed to be beyond any question.

16 The agency, in fact, is the executive arm of the  
17 licensing authority, health ministers, for all of its  
18 decisions, but this clearly was a very special set of  
19 circumstances and it seemed very appropriate that the  
20 licensing authority, the Health Minister, the Secretary  
21 of State, should be in a position to exercise that full  
22 power.

23 And I would just add that the independence provided  
24 by the expert advisory system, which is a statutory  
25 system, the Commission on Human Medicines, is advice to

118

1 **Q.** So, in fact, does your statement demonstrate that you  
2 met with the Scottish, Northern Irish and Welsh  
3 ministers for health, their chief pharmacists, and  
4 officials, very, very regularly?

5 **A.** We did.

6 **Q.** In the actuality, the regulation which was relied upon  
7 for the purposes of the decisions to authorise each of  
8 the UK vaccines, was 174 of the Human Medicines  
9 Regulations. Is that a UK legislative instrument? Is  
10 it a power, a legal power, that applies across the whole  
11 of the United Kingdom?

12 **A.** It is, and it reflects the permission in European law to  
13 use such an act, such a basis for action, in the event  
14 of a public health threat.

15 **Q.** By that you mean there are regulations that were based  
16 upon and drawn from, when they were initially drafted,  
17 a piece of EU legislation called an EU Directive, and  
18 then latterly, a regulation.

19 So they apply these regulations equally to England,  
20 Scotland Wales, and Northern Ireland, but in fact, prior  
21 to 11 o'clock on the last day of December 2020, the  
22 regulatory system which was then in place was, in fact,  
23 the European one. When we left the European Union, we  
24 reverted back to exclusive reliance upon our own  
25 legislative foundations, but not in the case of Northern

120

1 Ireland. Is that right?

2 **A.** That's correct.

3 **Q.** Because Northern Ireland remained within the

4 EU regulatory framework until later when the Windsor

5 Framework came to be agreed. But did that matter, given

6 that the regulations upon which the MHRA, were relying

7 was that UK-wide piece of legislation, Regulation 174?

8 **A.** It didn't matter for 174, but when European decisions

9 were made, they would have effect in Northern Ireland

10 and our decisions for Great Britain, and our goal was to

11 ensure equitable access right throughout the

12 United Kingdom.

13 **Q.** And so in reality, there was no difference. The

14 lawfulness and the substance of every decision taken on

15 safety and authorisation applied equally to the citizens

16 of Northern Ireland?

17 **A.** Yes.

18 **Q.** But as it happened, for a while, decisions taken at

19 European level by the EMA, for example, to authorise

20 a particular vaccine, had direct effect in Northern

21 Ireland but it didn't matter because you were taking

22 decisions on behalf of Northern Ireland anyway through

23 Regulation 174?

24 **A.** Yes.

25 **Q.** Have we got it right?

121

1 Sir Patrick Vallance.

2 **Q.** But it underscores, doesn't it, the importance of not

3 just being independent but being seen to be independent

4 operationally?

5 **A.** Absolutely.

6 **Q.** And operationally, whilst the Commission on Human

7 Medicines, to which you've already referred, technically

8 gives advice to the Secretary of State on medicinal and

9 regulatory matters, and works incredibly closely, along

10 with its expert working groups to the MHRA, it is also

11 an independent body or independent from the MHRA; is

12 that right?

13 **A.** It is.

14 **Q.** And is the MHRA also independent from the Joint

15 Committee on Vaccination and Immunisation, the JCVI?

16 **A.** Yes, it is. Their roles and functions are entirely

17 separate.

18 **Q.** But you all work incredibly closely together, of course?

19 **A.** Yes.

20 **Q.** In the public domain, there has, unfortunately, been

21 much said about potential conflicts of interest within

22 the MHRA. What degree of complexity or robustness does

23 the MHRA's conflict of interest policies have? I mean,

24 are they extensive?

25 **A.** They're indeed extensive, and rigorous. And rigorously

123

1 **A.** Yes.

2 **Q.** Good.

3 On the subject of operational independence, did

4 there come a point in the autumn of 2020 when the MHRA

5 decided not to have even a representative sit on the

6 Vaccine Taskforce? Why was that?

7 **A.** It was important that the Vaccine Taskforce were well

8 aware of the regulatory framework, and our whole

9 approach in the times of the early phase of the pandemic

10 was to ensure preparedness. So our goal was to ensure

11 that those who were working in the taskforce fully

12 understood what the regulatory standards would be, and

13 that they would be commensurate with our normal

14 scientific standards.

15 A particular focus was to ensure that the Vaccine

16 Taskforce understood that the grant of an authorisation

17 and approval is really a milestone, it's not an

18 endpoint, and that there would be really important work

19 still to be done to evaluate benefit-risk in clinical

20 use.

21 The person who was withdrawn had completed the task

22 as our representative of advising on regulatory matters,

23 but when the work of the taskforce came to look at

24 specific products, then withdrew, and that was with

25 clear agreement of Dame Kate Bingham and the then

122

1 applied. Our staff adhere to a rigorously applied

2 policy and every year attest that they have no interest

3 in the pharmaceutical medical device industries.

4 And we updated our policy for our experts following

5 the independent review of the safety of medicines and

6 medical devices.

7 **Q.** Is that the "do no harm" review -- (overspeaking) --

8 **A.** -- exactly --

9 **Q.** -- for later. And in very rough terms, I don't want to

10 spent time going through chapter and verse, no member of

11 staff in the MHRA can hold any direct financial interest

12 in the industries that the MHRA regulates, whether

13 they're pharmaceutical or medical products; is that

14 right?

15 **A.** That's the case.

16 **Q.** And, of course, are your staff subject to Civil Service

17 codes, in particular the Civil Service values of -- core

18 values of integrity, honesty, objectivity and

19 impartiality?

20 **A.** Yes, the Nolan Principles, absolutely.

21 **Q.** The Nolan Principles.

22 We will see, Dame June, later, because we'll look at

23 a particular Commission on Human Medicines document,

24 that at the start of CHM meetings, certainly, and

25 perhaps also MHRA meetings, endless time is taken by

124

1 every single person sitting in that room declaring any  
2 interest, however seemingly tangential, to any of the  
3 areas under discussion. And there's long lists every  
4 time of who knows who and who does what and who has had  
5 some sort of past historic connection to any of these  
6 complex moving parts; is that right?

7 **A.** Yes. I've dealt, I hope, with the financial aspect but  
8 clearly there could be other interests of a scientific  
9 nature, and it's very important to know that these are  
10 possibly present.

11 **Q.** The review to which you've just referred I think was  
12 Baroness Cumberlege's review of July 2020, "*First Do No  
13 Harm*".

14 Although the report and the review focused on three  
15 particular medical treatments, including, I think,  
16 pelvic mesh and anti-epileptic drugs, it was a review  
17 which focused in part upon the MHRA's management of any  
18 potential conflict of interest; is that right?

19 **A.** Yes, it did. And for that reason we reviewed and  
20 consulted on new proposals to strengthen our Code of  
21 Practice.

22 **Q.** And were they put into place by 2021 -- or when were  
23 they put into place?

24 **A.** I believe so, but I'll probably have to give you the  
25 precise date.

125

1 Innovations, CEPI, so there are some other sources, but  
2 about 86% is from the regulated sector, the industry.

3 **Q.** Do you ever in fact charge government or state bodies  
4 such as the DHSC, for any of the functions that you  
5 perform?

6 **A.** Not to my knowledge.

7 **Q.** Not to your knowledge, all right.

8 In your statement, and we'll have it up, please, so  
9 you can see it on the screen, Dame June, INQ000474337,  
10 page 7, you've identified in a very broad sense the main  
11 functions of the MHRA, paragraph 12:

12 "Ensuring that medicines, medical devices and blood  
13 components ... meet applicable standards of safety,  
14 quality and effectiveness;

15 "... the supply chain ... is safe and secure ...

16 "... Promoting international standardisation and  
17 harmonisation ...

18 "... Helping to educate the public and healthcare  
19 professionals ...

20 "... Supporting innovation and research and  
21 development ...

22 "... Influencing UK and international regulatory  
23 frameworks ..."

24 Linked to many of those primary responsibilities,  
25 appears to be the proposition that much of what you do

127

1 **Q.** All right. But as far as you're aware, they were  
2 certainly in play by the time that the MHRA was involved  
3 in the guts of the pandemic response in 2021?

4 **A.** I would like to give you the precise date.

5 **Q.** All right.

6 **A.** Another suggestion that finds some prominence in the  
7 public sphere is the notion that the MHRA is directly  
8 funded by pharmaceutical companies, and therefore has  
9 its integrity and independence undermined by virtue of  
10 that money flow.

11 Manufacturers plainly pay a fee, do they not, for  
12 applications that they make to the MHRA for which they  
13 are seeking authority?

14 **A.** Yes. And I would say, just to add to that, that the  
15 recovery of costs for work done from the regulatory  
16 sector is a common principle for regulators, and the UK  
17 is not -- the MHRA -- in any way different in that  
18 respect.

19 **Q.** Is all your expenditure recovered or paid for by way of  
20 the fees that you charge anybody who applies to you for  
21 authority for whatever it is, or in fact is some of your  
22 funding sourced from elsewhere?

23 **A.** Some of our funding comes from the Department of Health  
24 and Social Care, and some is from grant-giving bodies  
25 such as the Coalition for Epidemic Preparedness

126

1 needs to be judged by reference to standards or  
2 international thresholds, or international regulatory  
3 requirements. Does that mean, in lay terms, that much  
4 of the standards which you impose upon yourself are set  
5 and agreed by other people, by other regulators or at  
6 the international level, or by a process of what's  
7 called assurance?

8 **A.** It's correct to say that much of what we do relies on  
9 agreed standards, and after all, the industries that we  
10 regulate, generally speaking, are international, global  
11 industries. But the goal of the agency is to influence  
12 the appropriate setting of those standards via our  
13 participation in the International Conference on  
14 Harmonisation, for one example. And therefore, those  
15 standards are developed with our input, and then, if  
16 they're internationally applicable, they are ways in  
17 which a global industry is kept to the highest  
18 standards.

19 **Q.** How many decades of experience does the MHRA and its  
20 predecessor body have in the identification of  
21 appropriate standards, and in the performance of the  
22 statutory functions which you carry out?

23 **A.** It is many decades, although predecessor organisations,  
24 not always called the MHRA, but our UK influence has  
25 helped to shape, for example, the International

128



1 Conference on Harmonisation.

2 **Q.** Just remaining focused on some of the moving parts  
3 within the MHRA, an important function that the MHRA  
4 carries out is product control testing, is it not?

5 **A.** Yes, it is.

6 **Q.** And for that, do you have access to laboratories?

7 **A.** We do. We have a science campus, the National Institute  
8 for Biological Standards and Control merged with the  
9 Agency in 2013, and presciently so because its  
10 capability was fundamental to the delivery of vaccines  
11 in the pandemic.

12 **Q.** And under myriad international agreements and perhaps  
13 regulatory frameworks, the MHRA's laboratories are known  
14 as the Official Medicines Control Laboratory. So they  
15 are the United Kingdom's laboratory facilities in this  
16 sphere?

17 **A.** Yes, they are.

18 **Q.** And putting it as simply as I am able, in the context of  
19 vaccine testing and authorisation and including,  
20 therefore, the three Covid-19 UK vaccines with which  
21 we're primarily concerned, do those laboratories test  
22 each batch of vaccine made available to the public?

23 **A.** Yes, they do, and they test them for purity and potency  
24 so that every person who has a vaccine will get one that  
25 works and doesn't have impurities.

129

1 more? Is that what you meant by "relevant"?

2 **A.** Yes, I think that would be an appropriate understanding,  
3 your Ladyship.

4 **LADY HALLETT:** Thank you.

5 **MR KEITH:** Some have suggested that the batches which were  
6 delivered to the United Kingdom for use amongst its  
7 population, which were then handed out, were not the  
8 same batches, or rather were batches that were produced  
9 by a different manufacturing process on the part of the  
10 manufacturer, as has been -- as had been tested by the  
11 MHRA? So bluntly, the suggestion has been made, you  
12 tested and authorised and certified a certain number of  
13 vaccines made by process, manufacturing process A, and  
14 then the manufacturers actually delivered vaccines to  
15 British population produced as a result of a different  
16 manufacturing process, and one, by inference, which had  
17 not been tested. Is that right?

18 **A.** Well, my understanding is that the manufacturing process  
19 would have been the same.

20 **Q.** When manufacturers engage in the development of  
21 a vaccine or a medicine, and they're carrying out  
22 initial research and development, will they necessarily  
23 have built up to scale the manufacturing process which  
24 might be needed in the event of a successful development  
25 of that product?

131

1 **Q.** So nobody can receive a dose, a vaccine, unless it is  
2 from within that batch, each batch of which is tested by  
3 the United Kingdom's Official Medicines Control  
4 Laboratory, and a certificate issued to that effect?

5 **A.** Yes.

6 **Q.** Is that testing independent to the testing done by the  
7 manufacturer?

8 **A.** It is.

9 **Q.** Roughly how many doses are there in each batch?

10 **A.** An earlier witness, Professor Evans, was talking around  
11 perhaps tens of thousands. It may be as many as  
12 a million, and of course, it's not possible to test  
13 every single one of those. It wouldn't be appropriate.  
14 So a relevant sample is tested and rigorously assured  
15 for purity and potency.

16 **Q.** So a number of doses in each batch, I'm going to presume  
17 that you don't just test one vial in a single batch of  
18 a million doses, but a number of doses in that batch are  
19 tested, and every single batch is tested?

20 **A.** Absolutely.

21 **Q.** All right.

22 **LADY HALLETT:** Sorry, just to interrupt. You say a  
23 "relevant" number tested. Is that relevant to the  
24 number of doses there are in the batch? In other words,  
25 if it were a million doses in a batch, would you test

130

1 **A.** They might not have, but our inspectorate, who look at  
2 the manufacturing sites in great detail for the  
3 standards that will be applied, were working with likely  
4 manufacturers very early on, so that those issues could  
5 be dealt with at the time of scale-up.

6 **Q.** And when the manufacturing processes came to be scaled  
7 up in the case of the vaccines which did prove to be  
8 successful, and therefore could be authorised and rolled  
9 out, was the MHRA alert to any changes in the  
10 manufacturing processes?

11 **A.** Yes, we would have been.

12 **Q.** And therefore, does it follow that if there were any  
13 changes which had any potential at all of impacting upon  
14 the quality, the effectiveness or the safety of the  
15 vaccine, you were aware of it and alert to it?

16 **A.** Yes.

17 **Q.** All right.

18 Some of the papers before the Inquiry, some of the  
19 papers talk about a particular batch or three  
20 AstraZeneca batches made by the Serum Institute of  
21 India. Did there come a time in February 2021 when the  
22 MHRA carried out an assessment as to the safety,  
23 efficacy and quality of the particular batches made by  
24 the SII?

25 **A.** We would -- we clearly had that in mind when we sent our

132

1 inspectors to look at the -- actually inspect that site.  
 2 **Q.** So you actually sent inspectors to India?  
 3 **A.** Yes.  
 4 **Q.** Is it normal in the case of a vaccination programme, or  
 5 a vaccine authorisation application, to send inspectors  
 6 to manufacturing sites outwith, outside the United  
 7 Kingdom, ie abroad?  
 8 **A.** It might be. There are -- a point I might make that we  
 9 do have agreements with other regulators to exchange  
 10 reports, and what would have been a factor in any  
 11 judgement on the need of an inspection would have been  
 12 how recently the site had been inspected.  
 13 **Q.** But if the merits of a particular case or scenario or  
 14 issue require it, the MHRA can inspect factories abroad,  
 15 if the manufacturer is seeking UK permission for  
 16 authority to deliver vaccines to the United Kingdom?  
 17 **A.** Yes.  
 18 **Q.** Just to close off your evidence in relation to the MHRA  
 19 generally, is the MHRA also responsible for carrying out  
 20 applied research, it also holds the United Kingdom stem  
 21 cell bank, and has the MHRA itself developed and  
 22 produced over 90% of the world's biological  
 23 international standards in use? That is to say, you've  
 24 been instrumental in setting the standards across the  
 25 world for bioindustrial regulatory and authoritative --

133

1 **A.** Most certainly. But I would like to thank them for the  
 2 diligence and commitment shown at any time to respond to  
 3 requests for advice.  
 4 **Q.** Well, we'll see in due course a lot of what they did.  
 5 And does the Commission on Human Medicines concern  
 6 itself in particular with the collection and  
 7 investigation of information relating to adverse  
 8 effects?  
 9 **A.** It does, for the purpose of being able to make those  
 10 decisions or give that advice on safety, quality, and  
 11 efficacy.  
 12 **Q.** Which then enables you to decide whether you authorise  
 13 a medicinal product and, if so, whether or not you  
 14 attach conditions to that authority?  
 15 **A.** That's correct.  
 16 **Q.** Is the Commission on Human Medicines staff made up of  
 17 the same individuals as the MHRA or are they corporately  
 18 different people?  
 19 **A.** The Commission on Human Medicines, the commissioners are  
 20 called from specialities that are pertinent to the kinds  
 21 of products that the advice will be given on, and they  
 22 are very separate individuals from the MHRA.  
 23 **Q.** You said earlier that one of the primary  
 24 responsibilities of the MHRA is to ensure that vaccines  
 25 and medicines are acceptably safe. And vaccine is just

135

1 or authorising standards?  
 2 **A.** Yes. And it was particularly important to have  
 3 standards as new products, whether they were actual  
 4 biological medicines or indeed tests, that those  
 5 standards were available internationally.  
 6 **Q.** The Commission on Human Medicines, can we just revert to  
 7 that, please. You've said that it's the government's  
 8 independent scientific advisory body. It gives advice,  
 9 does it, to ministers -- or technically it gives advice  
 10 to ministers, but in practice, will it in fact give  
 11 advice to the MHRA directly, or does it send its minutes  
 12 and its memos and its advice papers to you both?  
 13 **A.** The MHRA, as I've touched on, is an executive arm of the  
 14 licensing authority, and because of the many decisions  
 15 that are made, we take a delegated authority to act on  
 16 behalf of ministers.  
 17 So the independence of the advice of the Commission  
 18 on Human Medicines is absolutely protected, although the  
 19 Agency runs its secretariat to make sure there is an  
 20 efficient turnaround.  
 21 I hope that's addressed your point.  
 22 **Q.** Does it have a number of expert working groups?  
 23 **A.** It does.  
 24 **Q.** And were they hard pressed and hard worked during the  
 25 course of the pandemic?

134

1 a form of medicine, at its heart. What is meant by the  
 2 phrase "acceptably safe"?  
 3 **A.** The focus is always balance of benefit and risk, because  
 4 no healthcare product, whether it's a vaccine,  
 5 a medicine, or a medical device, is perfectly safe.  
 6 There is always a degree of risk. And that balancing of  
 7 benefit and risk needs to be undertaken on the basis of  
 8 all available evidence, understanding to the perspective  
 9 of patients, the public, as members of our expert  
 10 advisory committees, as to whether that balance has been  
 11 achieved in a positive sense.  
 12 **Q.** To what extent must the benefit outweigh the risk, the  
 13 downside, for the MHRA to conclude that it is acceptably  
 14 safe and authority may be given?  
 15 **A.** There is no hard and fast number. There have been  
 16 various attempts to put numerical work into this,  
 17 because risk is in a context, and therefore, with  
 18 something like a vaccine, given to healthy people, the  
 19 benefit-risk balance would be extremely favourable,  
 20 whereas if it is a medicine for something serious, like  
 21 cancer, there might be a higher tolerability of risk.  
 22 **Q.** So, just to pause there, if I may, what you're saying is  
 23 that where, for example, the issue is whether you give  
 24 a vaccine to somebody who is not suffering from any  
 25 condition and isn't suffering in a way that requires

136

1 medicinal input, you've got to be more satisfied that  
 2 there is a greater benefit in giving them that  
 3 vaccine --  
 4 **A.** Yes.  
 5 **Q.** -- as opposed to the risk?  
 6 **A.** Yes.  
 7 **Q.** But if you're dealing with somebody who is seriously  
 8 ill, perhaps, and requires medical intervention to help  
 9 them with that, then there is a slightly different  
 10 balance that is struck?  
 11 **A.** Yes.  
 12 **Q.** So do we take it from that that in the context of  
 13 vaccines, which is a prophylactic given to healthy  
 14 members of the public in most cases, by way of  
 15 protection against a prospective infection, you had to  
 16 be more satisfied than is usually the case that the  
 17 benefits outweighed the risks?  
 18 **A.** Yes.  
 19 **Q.** In your statement you refer to something called critical  
 20 appraisal in the context of the MHRA's approach to how  
 21 you conduct this benefit-risk balance. What is critical  
 22 appraisal?  
 23 **A.** Our assessors are expert in bringing together a lot of  
 24 different forms of evidence and looking at the  
 25 robustness and applicability to a particular decision,

137

1 them a vaccine and what the risks of the vaccine are,  
 2 compared to another disease which has a lesser degree of  
 3 mortality and perhaps transmissibility?  
 4 **A.** Yes, that's correct.  
 5 **Q.** All right. And in general terms, when the MHRA takes  
 6 a decision whether or not to authorise, and if so, what  
 7 conditions it attaches, does it take into account just  
 8 the data from the pre-clinical and clinical trial  
 9 process from the manufacturer or a host of other  
 10 information from the private and public domains, data,  
 11 trial material, other trials, study, observational  
 12 studies, as well?  
 13 **A.** Yes, and we expect an applicant to make available all  
 14 information, evidence, that they're aware of or can find  
 15 for and against their product.  
 16 **Q.** You describe in your statement the nature of the  
 17 phases I, II, and III of the clinical trials and we  
 18 needn't, I think -- we needn't look at that. Could you  
 19 just describe for us, please, in general terms, what  
 20 obligation there is on the manufacturer to disclose to  
 21 the MHRA information and data arising from those  
 22 clinical trials at phases I to III?  
 23 **A.** It is the obligation to make all available data as part  
 24 of their submission, and indeed, if there's  
 25 a presentation that they need to give to our expert

139

1 and it is done in a properly critical manner, and  
 2 I would say one of our bastions of independence is if  
 3 there is a negative view in any sense, that brings in  
 4 the independent committees. By law, they must then take  
 5 a look. So the word "critical" is then, in that sense,  
 6 leaving no stone unturned.  
 7 **Q.** If I may observe, that is a much more useful and helpful  
 8 phrase. You leave no stone unturned in analysing the  
 9 degree of benefit, the degree of risk, and weighing one  
 10 against the other?  
 11 **A.** Absolutely.  
 12 **Q.** And when you do so, do you have regard to perhaps quite  
 13 a significant number of issues, including what the  
 14 impact might be on an individual person if they receive  
 15 no vaccine, ie that they are liable to become infected  
 16 with a particular pathogenic disease that you're seeking  
 17 to protect them against?  
 18 **A.** Clearly our view is at population level, but we need to  
 19 take into account that impact on an individual, and our  
 20 committees benefit hugely from the independent voice of  
 21 patients in those discussions.  
 22 **Q.** So dealing with a particular disease, if it's got a high  
 23 transmission rate and a high risk of mortality, bluntly,  
 24 it's going to kill people, there is perhaps a different  
 25 balance to be struck in relation to whether you give

138

1 committees, they're asked to give that assurance  
 2 verbally as well.  
 3 **Q.** Do they report generally, in general terms, anything  
 4 which might impact upon your decision, prospective  
 5 decision? So anything to do with the safety of the  
 6 product, as well as anything which might impact upon  
 7 whether you give authority, and if so, on what basis?  
 8 **A.** Yes, they do.  
 9 **Q.** Do they have to report what is formally known as  
 10 a suspected unexpected serious adverse reaction, so an  
 11 adverse event?  
 12 **A.** (Witness nodded).  
 13 **Q.** And are they also obliged to provide, after authority,  
 14 periodic safety update reports, protocols dealing with  
 15 post-authorisation safety studies, and final study  
 16 reports, that's to say final reports, into the data  
 17 arising from the trials into the product?  
 18 **A.** Yes, there's very rigorous requirements, and timelines  
 19 around them.  
 20 **Q.** In the case of the Covid vaccines, so the United Kingdom  
 21 Covid-19 vaccines, AstraZeneca carried out trials in the  
 22 United Kingdom as well as, I think, Brazil and South  
 23 Africa; Pfizer, Europe and America; Moderna, American  
 24 company, mostly trials in America. Is that right?  
 25 Roughly. I think we've got it --

140

1 A. I think that's roughly right.  
 2 Q. -- roughly right.  
 3 A. There might have been some in this country for Moderna.  
 4 Q. What obligation was there on the three manufacturers to  
 5 produce to the United Kingdom and the MHRA safety data,  
 6 information and anything that was relevant from trials  
 7 conducted outside the United Kingdom?  
 8 A. They have to report everything in the United Kingdom,  
 9 but if it's relevant, that they would inform us of  
 10 events elsewhere.  
 11 Q. In reality, is there anything different between what  
 12 they might give you from the UK trials as opposed to  
 13 what they give you in relation to non-UK trials?  
 14 A. Not to my knowledge.  
 15 Q. In this scheme of monitoring and assessment, are  
 16 manufacturers also obliged to produce at least the basis  
 17 of, and perhaps the final version of, a document called  
 18 the patient information leaflet, and the summary of  
 19 product characteristics, the SmPC?  
 20 A. Yes. Although clearly that will change in the process  
 21 of decision making, and in particular, any  
 22 post-authorisation requirements that need to be  
 23 introduced.  
 24 Q. And as it says on the tin, perhaps, who is the patient  
 25 information leaflet aimed at?

141

1 that were there?  
 2 A. -- through that route, yes.  
 3 Q. All right. They're obviously different outputs, they're  
 4 different locations and different means of vaccinating.  
 5 Is it all coordinated by PHE, or UKHSA as it's now  
 6 known?  
 7 A. Yes, with the Department of Health.  
 8 Q. All right. And then the SmPC, the summary of product  
 9 characteristics, who is that aimed at?  
 10 A. That's aimed at the healthcare professional.  
 11 Q. So is it more complex and more detailed?  
 12 A. Yes.  
 13 Q. The authorisations for the three vaccines. We've heard  
 14 evidence from Professor Prieto-Alhambra and  
 15 Professor Evans on the number of participants, so  
 16 I needn't ask you about the detail of them. But was it  
 17 the MHRA's view that the phase III trials, in respect of  
 18 all three vaccines, had the required and proper number  
 19 of participants, and was not out of kilter with any  
 20 other prior trials conducted in relation to past  
 21 historic vaccines?  
 22 A. They were sizeable, and I would have said of a better  
 23 size than some previous trials.  
 24 Q. Pfizer had around 43,000 participants, and I think the  
 25 trials were conducted in the US, Germany, South Africa,

143

1 A. It is the user, the patient, the member of the public in  
 2 the case of a vaccine.  
 3 Q. And who distributes that in the context of  
 4 a population-level vaccination programme?  
 5 A. The first step is for the MHRA to publish this. In the  
 6 context of a vaccination programme, there's very close  
 7 liaison with the UK Health Security Agency, or PHE as it  
 8 was during the pandemic, to ensure that materials,  
 9 information leaflets, produced through that route are  
 10 entirely consistent with the MHRA statutory leaflet.  
 11 Q. And is the statutory leaflet something that you produce  
 12 which broadly contains the same information, important  
 13 safety-related information, including contraindications  
 14 and possible adverse effects?  
 15 A. It does.  
 16 Q. So there is consistency between your regulatory leaflet  
 17 and the PIL and also the summary of product  
 18 characteristics?  
 19 A. Yes.  
 20 Q. And who, bluntly, puts the PIL in the vaccination  
 21 centre, or in the GP surgery, or the mobile unit, or the  
 22 pharmacy, or makes it available online? Who does that?  
 23 A. That would be the immunisation function, it wouldn't be  
 24 the MHRA, PHE -- (overspeaking) --  
 25 Q. So it would be the vaccination centre and the staff who

142

1 Turkey, Argentina and Brazil. Was that regarded as  
 2 quite a broad range of trial processes?  
 3 A. Yes.  
 4 Q. In terms of diversity, do we take it that -- from the  
 5 fact that those trials were conducted in countries with  
 6 varying degrees of ethnic and racial make-up and  
 7 background, that overall, there was a higher degree of  
 8 diversity?  
 9 A. There was a degree of diversity. It's an area that we  
 10 are concerned to improve and strengthen for the  
 11 confidence of everyone who is likely to receive  
 12 a vaccine. And so although we looked very carefully at  
 13 this, and thought it was satisfactory, we could do  
 14 better and would wish to do better.  
 15 Q. And let's not beat around the bush, South Africa  
 16 obviously has a majority black population.  
 17 A. Yes.  
 18 Q. In terms of diversity, trials in South Africa,  
 19 therefore, have a higher degree of diversity, in the  
 20 sense that they're not mainly white British. However,  
 21 you may have a difference in the number of participants  
 22 in each trial in each country, so those figures on  
 23 diversity might be dwarfed by a very much larger trial  
 24 in another country where there's a great proportion of  
 25 white people?

144

1 **A.** Yes.

2 **Q.** Right. Let's have a quick look at the process by which  
3 you authorised -- well, you authorised the Pfizer  
4 BioNTech vaccine.

5 Can we have INQ000110129, please.

6 This is dated 30 November. It's a submission to  
7 ministers. It -- because of the process that you've  
8 described, the [CHM] has looked at the issue, the MHRA  
9 has obviously looked at the issue, but because the  
10 Licensing Minister has the final call, a suggestion has  
11 to go to ministers as to whether or not Pfizer, as with  
12 all the other vaccines, can be authorised; is that  
13 correct?

14 **A.** Yes.

15 **Q.** So we can see there if we go to page -- we're on page 2,  
16 the background, the discussion. Permission is sought  
17 under Regulation 174. Full trial data is yet to be  
18 published and peer-reviewed but obviously a great deal  
19 of results and data have already been produced. And  
20 there's a reference to the JCVI's role.

21 And then if we look over the page:

22 "The MHRA has undertaken a rigorous scientific  
23 assessment of all the available evidence ... The final  
24 data package was received ... over the weekend of  
25 28/29th November ..."

145

1 **Q.** At paragraph --

2 **A.** That's exactly a rolling review -- I'm sorry to  
3 interrupt.

4 **Q.** It was a rolling review?

5 **A.** It was a pre-emptive dialogue.

6 **Q.** A pre-emptive dialogue, all right.

7 At paragraphs 7 and 8 we can see there reference  
8 to the CHM advice. The MHRA sought the advice of the  
9 CHM, the body to which you referred, and it consulted  
10 its own expert working groups, and no doubt there was  
11 very close liaison between the MHRA and the CHM. And  
12 you were all looking at the same material, were you not?

13 **A.** Yes.

14 **Q.** And over the page, we can see that you were all  
15 considering in your different ways efficacy, clinical  
16 safety, pre-clinical testing, quality and surveillance,  
17 and the debate centred around, in fact, the sorts of  
18 conditions which needed to be applied to any  
19 authorisation, is that right, paragraph 10?

20 **A.** That's correct.

21 **Q.** And over the page, page 5, the MHRA was cognisant and  
22 aware of the approach that would be taken by other  
23 regulators who were, of course, considering exactly the  
24 same application by exactly the same manufacturer in  
25 relation to exactly the same vaccine?

147

1 Is that because you put into place a system by which  
2 the manufacturers could produce data on a rolling basis?

3 Did that process by which you were prepared to start  
4 looking at the paperwork, as it was produced, in any way  
5 impact the rigour of your scrutiny or the degree of  
6 safety -- (overspeaking) --

7 **A.** Absolutely not. Absolutely not. And I think in the  
8 words of an earlier witness, it may have actually  
9 increased that rigour. Although it's important to  
10 always take a holistic view when it comes to the  
11 Commission on Human Medicines.

12 **Q.** Because you were receiving documents hourly, information  
13 day and night, you were over the manufacturers like  
14 a rash?

15 **A.** Yes.

16 **Q.** Right.

17 Did you also apply a rolling review of -- a rolling  
18 review in relation to the authorisation process for  
19 clinical trials, to speed up the overarching process?

20 **A.** We offered, if you like, a pre-assessment. There was an  
21 intense dialogue. We actually asked -- invited  
22 researchers to come and talk to us, so that by the time  
23 they had their application it was likely not to raise  
24 issues, and publish guidance, in fact on more than one  
25 occasion, for Covid-19 trials.

146

1 **A.** Yes.

2 **Q.** In relation to Pfizer, there were no SUSARs, suspected  
3 unexpected serious adverse reports, reported in any of  
4 the data given to the MHRA?

5 **A.** Not to my knowledge.

6 **Q.** All right.

7 And then the decision letter which formally comes  
8 from the Licensing Minister is at 410479.

9 INQ000410479.

10 Lord Bethell:

11 "Thank you for your letter ... which sought the  
12 Licensing Authority's authorisation for the vaccine  
13 [for] Pfizer ..."

14 There's the link to Regulation 174.

15 "After taking the advice of the Commission On Human  
16 Medicines [because they formally advise the minister],  
17 and considering ... [the three issues as you've  
18 identified of] quality, efficacy and safety ... I have  
19 decided to approve the ... supply ..."

20 And then there are conditions attached.

21 And was the same process adopted in relation to  
22 Oxford-AstraZeneca?

23 **A.** Yes.

24 **Q.** Some 20,000 or more participants in their phase I to III  
25 trials?

148

1 A. Yes.

2 Q. And their trials, I think, took place in the  
3 United Kingdom, Brazil, and South Africa. The non-white  
4 ratio in South Africa was 87%; Brazil, 31.4%; and UK,  
5 7.1%. So not representative of the UK population in the  
6 United Kingdom trial. But overall, what did the MHRA  
7 conclude in relation to diversity of the whole trial  
8 process for AstraZeneca?

9 A. That it was satisfactory.

10 Q. In July and September 2020, the Oxford-AstraZeneca  
11 vaccine trials were suspended or halted due to possible  
12 cases of transverse myelitis, which is, we've heard, the  
13 condition concerning inflammation of the spinal cord.  
14 In such a scenario, in the course of clinical  
15 trials, when the MHRA becomes aware of an issue,  
16 a safety-related issues, is it normal for the trial  
17 process to be suspended whilst you investigate?

18 A. Yes. Not common but it is something that --

19 Q. It happens?

20 A. -- needs to be done. It happens.

21 Q. And was the MHRA obliged at each point on those two  
22 occasions to reach a view as to whether or not those  
23 cases of transverse myelitis were coincidental, caused  
24 by the virus, or caused by, arguably, at least, or  
25 reasonable grounds for supposing it was caused by the

149

1 a number of witnesses that because no proper and ethical  
2 trial could ever be of such a scale as to give rise to  
3 any likelihood that a rare or very rare or extremely  
4 rare condition would be identified, it's extremely  
5 important that after authorisation, a very close eye is  
6 kept on the issue of safety and side effects; is that  
7 right?

8 A. Absolutely.

9 Q. And does the MHRA have in place a number of processes,  
10 or pillars, by which you monitor, very closely,  
11 post-authorisation safety surveillance?

12 A. Absolutely, the four pillars you mention were actually  
13 designed very carefully, with expert input, well in  
14 advance of the approval, any possible approval, of  
15 a vaccine, so as to be in a state of complete readiness.  
16 The passive reporting, as we've heard, of the Yellow  
17 Card Scheme, is historically a mainstay of  
18 pharmacovigilance. But in this case, rapid matching  
19 with the observed reports against expectedness was  
20 introduced. And clearly, we may want to talk about the  
21 rapid cycle analysis using real-world data, the vaccine  
22 monitor, which was a -- tremendous support from members  
23 of the public to be followed up, and of course work with  
24 epidemiologists to conduct specific studies.

25 Q. On this topic of rapid cycle analysis and ecological

151

1 vaccine?

2 A. Yes. Clearly we would have interacted and encouraged  
3 the applicant to interact with their data safety  
4 monitoring board or data monitoring committee, and also  
5 conduct -- consulted the Commission on Human Medicines.

6 Q. And does the paperwork show in fact that the CHM met on  
7 10 and 11 September to discuss precisely that issue of  
8 transverse myelitis, in fact, on that occasion, in the  
9 UK trial?

10 A. Yes.

11 Q. Other than those issues, the suspensions in July and  
12 September, were any SUSARs reported, let alone any cases  
13 of cerebral haemorrhage or blood clotting?

14 A. I think you'll find in the papers, counsel, that there's  
15 one case of migraine.

16 Q. Migraine, all right. No, you've got me there, I didn't  
17 know that. Thank you.  
18 Moderna. Were trials largely undertaken in the US?

19 A. Yes.

20 Q. And did the Moderna trial in total involve more than  
21 30,000 people?

22 A. Yes.

23 Q. And were any SUSARs reported?

24 A. No.

25 Q. All right. Now, we've heard from Professor Evans and

150

1 analysis -- and forgive me if I don't do them full  
2 justice -- are they concerned with trying to work out  
3 what medical conditions might, in the general scheme of  
4 things, appear, closely identifying what conditions  
5 actually appear, and resolving, therefore, or  
6 determining that they are unexpected? They don't  
7 normally arise in the course of the population in life,  
8 and therefore there might be a link to the vaccine; is  
9 that what it --

10 A. Yes, it might be attributable. It's really important to  
11 know what our background rates are of many of these  
12 events.

13 Q. Right. So it's looking at the context --

14 A. Yes.

15 Q. -- trying to see if there's something out of the  
16 ordinary, and identifying trends?

17 A. Yes.

18 Q. Right. Alongside the Yellow Card Scheme with its  
19 monitoring add-on, and also, we've heard from  
20 Professor Evans, a profusion of formal -- or not many  
21 trials, randomised control trials, but many, many  
22 epidemiological studies?

23 A. Yes.

24 Q. All right. Let's have look at a Yellow Scheme (sic)  
25 report.

152

1 INQ000502035, please.  
 2 Is that the report which was in place in 2021?  
 3 **A.** Yes.  
 4 **Q.** So we can see that it's -- well, it's self-evident. It  
 5 allows a person to report a suspected adverse drug  
 6 reaction, to give details of the patient, the vaccine,  
 7 the suspected reaction, any other drugs they might be  
 8 taking, details of any clinician, and I think that's --  
 9 is there a second page? No. That's the envelope -- oh,  
 10 guidelines.  
 11 Did the MHRA, having received during the course of  
 12 the pandemic response a very large number of Yellow Card  
 13 reports, publish weekly summaries of the reporting?  
 14 **A.** Yes, we did, and I hope it's okay for me to thank  
 15 everyone who reported. I think it was absolutely vital.  
 16 Of the close on half a million reports, 80% were from  
 17 members of the public vaccine recipients, and it was  
 18 a tremendous assistance to us in our signal detection  
 19 function.  
 20 **Q.** Was the vast majority of reports concerned with mild or  
 21 temporary matters such as reddening from injection site,  
 22 flu-like symptoms, headache?  
 23 **A.** **(Witness nodded)**  
 24 **Q.** That sort of thing?  
 25 **A.** The general reactogenicity-type events that may resolve  
 153

1 been coincidental or caused by the virus. And you made  
 2 the point that the overwhelmingly majority of reports  
 3 relate to mild or temporary matters. Yes?  
 4 **A.** Yes.  
 5 **Q.** Page 6 -- no, that's what we're on, sorry. Page 12 and  
 6 13, the MHRA talks about ADRs. Are ADRs the reports  
 7 which found the basis of the Yellow Cards or are they  
 8 something different?  
 9 **A.** An ADR is simply an adverse drug reaction and the Yellow  
 10 Card captures suspected ADRs that a person considers may  
 11 be linked with a particular intervention, whether it's  
 12 a vaccine or a medicine.  
 13 **Q.** And in the middle of the page you'll see a reference to:  
 14 "Up to and including 23 November ... the MHRA  
 15 received and analysed a total of 52 UK reports of  
 16 suspected ADRs to the COVID-19 vaccine Novavax."  
 17 And I'm just using this by way of an example.  
 18 When you receive the Yellow Card reports, do you go  
 19 through them and try to identify the important ones, the  
 20 ones that require follow-up, and require analysis, which  
 21 then get followed up?  
 22 **A.** Yes. There were special provisions during the pandemic,  
 23 particularly in relation to the vaccines, to look every  
 24 day at any trends, and to advise on next steps. So  
 25 there was a dedicated team doing this.  
 155

1 within a day or two.  
 2 **Q.** But also within the reporting where reports concerning  
 3 suspected serious adverse events, serious side effects?  
 4 **A.** Yes.  
 5 **Q.** Could we look, please, at -- just by way of an example,  
 6 an MHRA document talking about the summary of the Yellow  
 7 Card reporting, INQ000421360.  
 8 Can we just go back to the first page, just to get  
 9 our bearings, if you'd be so kind.  
 10 It's a printout of the website. We can see that  
 11 it's archived because obviously time has passed. But  
 12 this in fact is a version of a report from the MHRA  
 13 updated, as it then was, on 8 March 2023. I'm sure you  
 14 recognise the format.  
 15 If we go to page 5, then, you can see that the MHRA  
 16 provides details of the number of Yellow Cards for each  
 17 vaccine; yes?  
 18 **A.** Yes.  
 19 **Q.** Over the page, it's thinking about the significance of  
 20 the data and it makes the point that obviously, the fact  
 21 that somebody has reported a suspected adverse event  
 22 does not mean to say of itself, it was caused by the  
 23 vaccine?  
 24 **A.** No.  
 25 **Q.** It may have been caused coincidentally, it may have just  
 154

1 **Q.** So the Yellow Cards were looked at and your data sources  
 2 from wherever they were, were looked at every day --  
 3 **A.** Yes.  
 4 **Q.** -- and things that brought themselves to your attention  
 5 which mattered were then followed up?  
 6 **A.** Yes.  
 7 **Q.** Page 37, you deal with, of course, the issue of possible  
 8 fatal outcomes. We see at the bottom of the page:  
 9 "MHRA takes all reports of the fatal outcome in  
 10 patients who have received a Covid-19 vaccine".  
 11 If a member of the public wrote in on a Yellow Card  
 12 saying, "My loved one or relative has died, and we  
 13 suspect that there is a connection to or an association  
 14 with, or the death was caused by the Covid-19 vaccine",  
 15 what does the MHRA do?  
 16 **A.** It considers the report in very great deal with great  
 17 care, seeks to follow up with any clinical source of  
 18 data, particularly if there has been a post mortem  
 19 examination and we might touch on our special  
 20 relationship with coroners as well.  
 21 **Q.** Do you, can you go to the NHS or to a GP and see what  
 22 happened and whether or not they sought clinical help  
 23 and what the views of the NHS or the GP were?  
 24 **A.** We certainly can, and obviously we do, but in the  
 25 pandemic time, one had to take account of how hugely,  
 156

1 you know, busy, overwhelmed, many clinicians were.

2 **Q.** Did you, in the generality of cases where fatal outcomes

3 were reported to you, take steps to follow up and try to

4 find out what had happened?

5 **A.** Yes.

6 **Q.** And did that include speaking to health services?

7 **A.** In the generality. There may have been cases where if

8 it appeared that there wasn't an association likely,

9 that was not done.

10 **Q.** All right. So your position is you can't say that it

11 was done in every single case, but the expectation was,

12 and by -- in general terms, a fatal outcome reported to

13 the Yellow Card system would be researched and followed

14 up through relevant health services?

15 **A.** Generality, yes.

16 **Q.** All right.

17 Can we just go over the page to page 38, please?

18 This report, which was updated, as I say, in

19 March 2023, gives figures for the number of fatalities.

20 They were, therefore, and nothing I say is intended to

21 detract from the individual tragedy that each fatal

22 outcome, of course, amounts to.

23 No, no, I didn't want the table, just the paragraph

24 at the top of the page, please.

25 The number of fatalities overall by March 2023 were

157

1 of the number of papers considered by the Commission on

2 Human Medicines expert working groups between

3 December 2020 and September 2022, and the number of

4 specific meetings held to discuss signal -- safety

5 signals over that time. Give us some idea.

6 **A.** In terms of papers, I would have thought in the high

7 hundreds, and numbers of meetings, around 100.

8 **Q.** One of the pillars you've mentioned is the Yellow Card

9 system which had a facility for monitoring attached to

10 it. We've heard evidence from --

11 **LADY HALLETT:** Take the document down, please.

12 **MR KEITH:** -- Professor Evans that whilst half a million or

13 maybe a million invitations were sent out to members of

14 the public saying, "Would you be prepared to be

15 monitored and followed up following your Yellow Card

16 report?", only a proportion of people were prepared to

17 be so monitored; is that right?

18 **A.** Yes, it was about 36,000. And, again, thank you to them

19 for sharing their information, because it has been

20 relevant and included in all our functions.

21 **MR KEITH:** All right.

22 My Lady, is that a convenient moment?

23 **LADY HALLETT:** Yes, certainly. I shall return at 3.35.

24 **(3.17 pm)**

25 **(A short break)**

159

1 measured in the low thousands, in total -- yes?

2 **A.** Yes.

3 **Q.** And therefore, what you're reporting here is not that

4 this is the number of deaths caused necessarily by

5 vaccines, it is the number of deaths reported as being

6 suspected to be caused by vaccines through the Yellow

7 Card system?

8 **A.** Yes.

9 **Q.** All right.

10 **A.** Although, if I may add, I'm sure in this document

11 elsewhere there's some context given in relation to how

12 many deaths would be expected in a population of this

13 size over this period.

14 **Q.** I was just about to ask you. You spoke earlier about

15 the risk-benefit analysis. When the MHRA receives

16 a report of a fatality, in addition to seeing what

17 happened in that individual case, you have to assess,

18 don't you, how likely it is that that condition and the

19 death would have occurred anyway, coincidentally,

20 whether or not it might have been caused by the virus,

21 and also how many deaths are being prevented by the

22 beneficial impact of the vaccine. Those are all things

23 that need to be considered?

24 **A.** Yes, they do.

25 **Q.** All right. And standing back, can you give us some idea

158

1 **(3.35 pm)**

2 **LADY HALLETT:** Mr Keith.

3 **MR KEITH:** Dame June, earlier I asked you some questions

4 about the monitoring process which came under the

5 general heading of the Yellow Card Scheme, and

6 I suggested to you that the monitoring system worked by

7 way of people who had made a Yellow Card report then

8 being invited to consider registering to be monitored

9 and followed up. I have been corrected by one of our

10 legal team.

11 Is this the position: that it was open to members of

12 the public to express an interest, through the NHS, if

13 they'd attended hospital, or thorough their GP, in being

14 monitored. It wasn't just for those, or may not even

15 have included those people who had actually made

16 a Yellow Card report?

17 **A.** Yes, it was separate from those who had made a report,

18 but I believe we did invite some people -- well, who

19 wished to participate.

20 **Q.** So it included people who'd made a Yellow Card report

21 who may just happen to have heard that -- or they might

22 happen to receive an invitation to consider being

23 monitored by way of a follow-up?

24 **A.** Yes.

25 **Q.** All right. I now want to ask you briefly about a number

160



1 of discrete areas and issues which have been raised in  
2 the course of the Inquiry, for the MHRA's position and  
3 response to be made plain.

4 Firstly, on the question of information, there's  
5 obviously a significant number of ways in which  
6 information about the risk of a side effect or safety  
7 information relating to a vaccination might reach the  
8 public domain, and you've talked about how there's  
9 a weekly update of Yellow Card reporting, and we've seen  
10 that the authorisation letter and all the paperwork  
11 concerning authorisation may also refer to safety  
12 issues, but were there other routes by which information  
13 about a vaccine and the risks and the benefits and the  
14 risks of taking the vaccine were available to members of  
15 the public?

16 **A.** An important point, of course, is at the moment they're  
17 queueing and going into their vaccine centre to have  
18 a vaccine, and we made a great effort to ensure that  
19 that was commensurate with the regulatory position, that  
20 leaflet.

21 I think we should also mention the regular press  
22 briefings and opportunities to give realtime, or as  
23 close to realtime as possible, updates on the  
24 benefit-risk.

25 **Q.** So, there's the patient information leaflet, the press  
161

1 vector technology would cause damage or harm on the  
2 genetic plane?

3 **A.** It's a key aspect of the consideration, a very rigorous  
4 scientific consideration on how a vaccine might affect  
5 the body, the person who has taken it. And I can say  
6 that there was no hint at all, no evidence that this  
7 would be the case for the mRNA technologies.

8 **Q.** There are many people who suggest that they weren't  
9 aware, sufficiently aware, of the Yellow Card Scheme,  
10 and that not enough was done to raise awareness of the  
11 scheme. And many people, it would appear, say that it  
12 wasn't easy to use, particularly if you believed that  
13 you had been injured as a result of the vaccine and you  
14 were wishing to report a suspected adverse event.

15 Do you think the Yellow Card Scheme is amenable to  
16 improvement in terms of raising its awareness and making  
17 it more straightforward and easier to use?

18 **A.** Yes, I do. I would stress, though, that over the  
19 years -- and it has been in operation in fact for over  
20 60 years now -- there have been a lot of efforts not  
21 simply to make it easier to use, with different ways of  
22 reporting, electronic, by phone, as well as by paper,  
23 and also to have local representation, and our six  
24 Yellow Card centres do a very great deal of outreach in  
25 their local areas.  
163

1 release is issued by the MHRA and perhaps other bodies?  
2 I mean, did the CHM or the DHSC or Public Health England  
3 issue any kind of statements at any time concerning  
4 safety?

5 **A.** Yes, clearly we worked alongside the JCVI, and Public  
6 Health England coordinated those statements, but they  
7 would have come one from the MHRA, one from JCVI.

8 **Q.** Yes. My question was, were there other routes,  
9 non-MHRA-related, by which information about the safety  
10 of vaccines reached the public domain?

11 **A.** Yes.

12 **Q.** On multiple occasions?

13 **A.** Yes.

14 **Q.** Frequently?

15 **A.** Perhaps I wouldn't say "frequently", but at key  
16 milestones in evaluating benefit-risk.

17 **Q.** Thank you. Concerns have been raised by some as to  
18 whether or not the modalities, to use the technical  
19 phrase, of vaccines, the technology, the nature of the  
20 particular vaccines in the United Kingdom, engaged,  
21 unacceptably or impermissibly, novel technologies liable  
22 to cause damage, in particular, whether or not they  
23 would cause genetic damage, by way of improper gene  
24 therapy? Was there any material at all before the MHRA  
25 which suggested that either the mRNA technology or the  
162

1 **Q.** And what are they? They're all over the United Kingdom,  
2 are they?

3 **A.** Yes, Scotland, Wales, Northern Ireland, northern, north,  
4 Midlands, we've got outreach very close to where people  
5 are --

6 **Q.** They process reports but do they play a role in bringing  
7 the existence of the system to the attention of the  
8 people locally?

9 **A.** They do the latter. They no longer process, because,  
10 with electronic reporting, that automatically comes to  
11 our database. But local outreach is critically  
12 important, and in fact in Wales there were some very  
13 good examples of champions of the Yellow Card Scheme  
14 having a very measurable impact on reporting.

15 I think it has to be borne in mind, though, that the  
16 reporting, close to half a million, 80% from members of  
17 the public, is actually testament that there was doing  
18 growing awareness, but I do take the point that more  
19 could be done in peacetime, as it were, to ensure that  
20 everyone knows, perhaps through school education, that  
21 a downside needs to be informed to the authorities if  
22 they've had a product that hasn't had the --  
23 a completely safe effect on them.

24 **Q.** Some have suggested that there should be a mandatory  
25 obligation, if that's not tautologous. There should be  
164

1 an obligation on healthcare professionals to report any  
2 occasion on which they come across something that they  
3 believe to be a suspected adverse event?

4 **A.** We've looked at this very carefully, and most recently  
5 with the International Coalition of Medicines Regulatory  
6 Authorities, around the world, some countries have  
7 mandated health professionals to report, others not.  
8 And we don't see a measurable difference.

9 There is a lot of value in health professionals, if  
10 you like, being so motivated as part of their clinical  
11 practice, as deemed by the professional bodies, that  
12 they see it as part of care rather than a legal  
13 requirement.

14 **Q.** All right. TTS, thrombosis with thrombocytopenia  
15 syndrome.

16 Thrombotic events were not, were they, identified in  
17 the course of any of the clinical trials?

18 **A.** No.

19 **Q.** But in February 2021 did the MHRA start to receive  
20 Yellow Card reports of suspected thrombosis and, on  
21 occasions, associated thrombocytopenia?

22 **A.** Yes. And we were looking for any reports that might  
23 affect the blood system, knowing that these were adverse  
24 effects of special interest. Some vaccines in the past  
25 have been associated with, for example, low blood

165

1 and begun examining the basis of the reports, what had  
2 happened in each of these individual cases, and what  
3 conclusions should be drawn?

4 **A.** Certainly the Vaccine Benefit Risk Expert Working  
5 Group --

6 **Q.** That's the expert working group --

7 **A.** Very aware.

8 **Q.** -- one of the expert groups in the CHM?

9 **A.** Of the CHM.

10 **Q.** All right.

11 Was the MHRA able to determine, between February and  
12 the Easter Bank Holiday weekend in early April, whether  
13 or not those cases of TTS did have an association of  
14 some significant type with vaccines, ie whether they  
15 might be reasonably thought to be the result of  
16 vaccination, as opposed to being coincidental or perhaps  
17 caused by Covid itself?

18 **A.** The level of evidence was growing. After a press  
19 briefing on 18 March, there were many more, you know,  
20 general Yellow Cards submitted and we then started to  
21 see more reports of the TTS.

22 **Q.** Was it possible for the MHRA, between February and  
23 6 April, to reach a final position, a determined  
24 position, as to whether or not vaccines were or  
25 AstraZeneca was causing TTS, and if so, what should be

167

1 platelets. So it was something we were very alert to  
2 and looking for.

3 Having said that, the complexity which was added was  
4 that Covid itself could have such effects.

5 **Q.** But was the possibility that TTS was being caused by  
6 vaccines under investigation by the MHRA actively from  
7 when they first started receiving Yellow Cards?

8 **A.** The first three reports in February 2021.

9 **Q.** In early March 2021, a number of European member states  
10 suspended use of the AstraZeneca vaccine. Were those,  
11 as far as you understood it, decisions taken by their  
12 regulators or by the state bodies responsible for  
13 prioritisation and rollout?

14 **A.** They were decisions taken by the bodies responsible for  
15 the immunisation rollout.

16 **Q.** Was there at any time a suspension at the hands of  
17 a regulator in Western Europe of the AstraZeneca  
18 vaccine?

19 **A.** No.

20 **Q.** Thank you.

21 And the MHRA engaged, did it not, it began to  
22 engage, with the Licensing Minister. You put  
23 a submission up on 17 March on this issue.

24 From February, when you first became aware, had the  
25 Commission on Human Medicines also looked at this issue

166

1 done about it?

2 **A.** It wasn't possible to reach a final position.

3 **Q.** Why?

4 **A.** The considerations we apply are very much related to  
5 a general evaluation of that growing evidence for its,  
6 if you like, robustness of an association. So although  
7 the evidence was growing, it wasn't conclusive.

8 **Q.** At the same time, was the vaccination programme  
9 continuing?

10 **A.** Yes, it was.

11 **Q.** And was that programme materially contributing to saving  
12 lives?

13 **A.** It certainly was. And the issue of age, I'm sure we'll  
14 touch on. By that weekend, the Easter weekend, I think  
15 the cohorts below the age of 50 had not yet been  
16 invited.

17 **Q.** Can you just explain the significance of that? Under  
18 our JCVI-mandated prioritisation process, vaccines were  
19 first given to the elderly. Is the issue that TTS, if  
20 it's linked to AstraZeneca, has a higher rate of  
21 occurrence in the young than the old, or the much  
22 younger than everybody else?

23 **A.** Yes.

24 **Q.** And therefore, it was less likely that there would be  
25 any such cases, because we hadn't yet got to the stage

168

1 where we were beginning to vaccinate the young on  
 2 a general basis?  
 3 **A.** On a general basis, although there would have been some  
 4 cases in younger people who, for their -- for other  
 5 reasons, had been vaccinated.  
 6 **Q.** For health conditions they might have been vaccinated?  
 7 **A.** Yes, that's correct. And it might be worth saying that  
 8 in contrast, in the European member states such as  
 9 Denmark, there had been more use in the young.  
 10 **Q.** So they vaccinated more of their young people than we  
 11 had, and therefore, that's why there were -- and there  
 12 were only a handful of cases, but there were more cases  
 13 in Denmark than there appeared to be in the  
 14 United Kingdom?  
 15 **A.** It's one of the reasons.  
 16 **Q.** And an issue arose before the Bank Holiday weekend as to  
 17 whether or not a public statement should be issued by  
 18 the MHRA setting out its conclusions and its views on  
 19 this, on TTS; is that right?  
 20 **A.** Yes.  
 21 **Q.** And a debate arose as to whether or not it should, or  
 22 whether or not you should stay your hand until after the  
 23 Bank Holiday weekend, because it was important to allow  
 24 other bodies with interest in this issue, the JCVI, the  
 25 DHSC, Public Health England, to clarify their own

169

1 **A.** Yes.  
 2 **Q.** Did the weekly summary before the Bank Holiday weekend  
 3 refer to the TTS issue?  
 4 **A.** I'd like to check that.  
 5 **Q.** All right. Could you do that, please?  
 6 **A.** I will.  
 7 **Q.** Some have suggested that the period of time from early  
 8 February when you first became aware of the possibility  
 9 that extremely rarely, TTS might be caused by a vaccine,  
 10 and the Bank Holiday weekend was too long a period to  
 11 allow this issue to rumble on; what do you say to that?  
 12 **A.** I can understand that perspective, but there were  
 13 a number of considerations that mean that that was  
 14 actually a very appropriate period of time to reach  
 15 a very considered decision and to work very closely with  
 16 the haematological community who were instrumental in  
 17 picking up what was a very complex picture to resolve,  
 18 given that we were looking at the concern about low  
 19 platelets in isolation, and thrombosis in isolation.  
 20 Bringing those together was a more complex picture to  
 21 understand, and needed expert advice from that clinical  
 22 community.  
 23 **Q.** Because TTS, with or without thrombocytopenia, can be  
 24 caused -- can occur in the general population?  
 25 **A.** Very rarely.

171

1 positions and to get their statements in order; is that  
 2 the nub of it?  
 3 **A.** I think there's a consideration, an important one, that  
 4 if an announcement leads to public concern, the access  
 5 to medical advice or healthcare professional advice  
 6 isn't there in the Bank Holiday period.  
 7 **Q.** So you've got to get the advice right before you  
 8 publish it?  
 9 **A.** Yes.  
 10 **Q.** And not everybody else was ready?  
 11 **A.** I think that's a good argument.  
 12 **Q.** Did, nevertheless, the MHRA -- I'm sorry. Before the  
 13 Bank Holiday weekend, was any information on the part of  
 14 the state put into the public domain concerning TTS?  
 15 **A.** Yes, there had been.  
 16 **Q.** What was it?  
 17 **A.** I believe there was a letter through the immunisation  
 18 network to relevant healthcare professionals.  
 19 **Q.** Was there a letter to the NHS and to primary care  
 20 networks? Clinical directors in the NHS and to primary  
 21 care networks?  
 22 **A.** That's my understanding.  
 23 **Q.** Had, the week before the Bank Holiday weekend, the MHRA  
 24 undertaken its normal practice of issuing a weekly  
 25 summary of Yellow Card reports?

170

1 **Q.** It can be caused by Covid?  
 2 **A.** Yes.  
 3 **Q.** And you needed therefore to know the context; how likely  
 4 was it going to occur generally before you could assess  
 5 whether or not the number of cases that were appearing  
 6 might therefore be caused, by contrast, by a vaccine?  
 7 **A.** Yes.  
 8 **Q.** All right. And were there a number of bodies and people  
 9 looking intensely at this issue?  
 10 **A.** Yes, there were, and the British Society of  
 11 Haematologists was instrumental in collecting a very  
 12 important case series.  
 13 **Q.** Did the DHSC look at it? Did the JCVI look at it? Did  
 14 the CHM look at it?  
 15 **A.** Yes.  
 16 **Q.** Did the CHM's working groups look at it?  
 17 **A.** Yes, they did.  
 18 **Q.** All right. And then the submission, the position  
 19 reached by the MHRA is INQ000494385, it's a submission  
 20 to Mr Hancock on 7 April.  
 21 Page 2, paragraph 2, so INQ000 -- thank you very  
 22 much, 7 April.  
 23 We can see your name in the top right-hand corner.  
 24 It has been cleared by you. If you could just scroll  
 25 back out a second. It's a minute -- a submission to the

172

1 Secretary of State, top left, copied to the private  
2 secretary for one of the DHSC ministers: The MHRA has  
3 concluded its initial investigation into TTS,  
4 specifically blood clots, suspected to be associated  
5 with AstraZeneca. The CHM met in extraordinary session  
6 and then on the -- on the 4th and then on the 6th, and  
7 you tell Mr Hancock that you intend to update UK  
8 information for healthcare professionals and vaccine  
9 recipients in line with the CHM advice.

10 But your weekly update, depending on what the answer  
11 to my question was, may already have referred to it and  
12 you'd already written to primary care networks and  
13 clinical directors in the NHS.

14 Page 6, please, paragraph 3.

15 Hmm, my reference is clearly wrong. Can we go back  
16 to --

17 **LADY HALLETT:** Page 2 because the first page was page 1.

18 **MR KEITH:** Ah yes, thank you very much, it's paragraph 6 on  
19 page -- paragraph 3 on that page:

20 "We were advised later that day that AstraZeneca had  
21 produced a new global dataset."

22 Whenever there's an issue, a safety issue, requiring  
23 the MHRA's consideration, do you engage with the  
24 manufacturer and seek to accumulate as much data as you  
25 possibly can on this issue?

173

1 Then page 4, paragraphs 9 to 11, we can see there  
2 summarised the CHM advice. They considered it on  
3 4 and 6 April, and they obviously gave intense  
4 consideration to whether there should be a specific  
5 cut-off age, to what the data showed, to what degree  
6 there was an association. That's not to say a causative  
7 link has been established, but there is something  
8 requiring further investigation?

9 **A.** Yes.

10 **Q.** All right.

11 Then page 6, paragraphs 15 and 16, "Next steps".

12 You've agreed to update the PIL, and the summary of  
13 product characteristics, and paragraph 16, there needs  
14 to be "clear and co-ordinated public communications",  
15 it's "essential to inform the public and retain  
16 confidence in the vaccination programme".

17 So there was no question of not telling the public.  
18 What was important was to make sure was that there was  
19 a unified message and that all the people who would be  
20 communicating with the public got the facts right and  
21 could be precise about what they were saying?

22 **A.** Yes. And I would like to also highlight that the time  
23 was not time elapsed without extra work being done on  
24 how well this could be communicated. The Winton Centre  
25 in Cambridge was very helpful indeed in enabling really

175

1 **A.** Yes, we do, and we do expect them to have, at their  
2 fingers tips, the global picture.

3 **Q.** And did AstraZeneca provide on a number of occasions  
4 data?

5 **A.** Yes, they certainly did.

6 **Q.** During those weeks?

7 **A.** Yes.

8 **Q.** And towards the end of the process, by 4 April, did new  
9 data become available which you then had to consider?

10 **A.** It did, and my recollection is that it made the issue of  
11 age less amenable to setting precise levels.

12 **Q.** So if I can seek to reformulate that, consideration was  
13 being given to whether or not the authority for  
14 AstraZeneca should have a condition attached, namely  
15 don't use for a certain age group?

16 **A.** Yes.

17 **Q.** But then the data showed that actually it was much more  
18 difficult to delineate between ages in terms of risk,  
19 and therefore you couldn't apply a condition, or it  
20 wouldn't be sensible to apply a condition; all you could  
21 do was raise the issue and allow it to the individual  
22 judgement of patients and clinicians?

23 **A.** At that point in time.

24 **Q.** At that point in time. So it's a rolling process,  
25 a rolling consideration of more and more information.

174

1 quite concise information, by age, on the risk of  
2 getting Covid and its consequences, such as ITU  
3 admission, versus any risk of having a case of TTS.

4 **Q.** We haven't got it in the system, so I don't think I can  
5 bring it up, but you gave a press conference on 7 April  
6 and you produced a diagram from the Winton Centre which  
7 had a bar chart on it which showed, very broadly, the  
8 level of risk stratified by age.

9 **A.** In the context of how frequent the transmission was and  
10 how likely it was to get an infection with Covid. And  
11 it was, if you like, to guide individual decisions, and  
12 also to give a bit more factual context to the JCVI  
13 considerations.

14 **Q.** Then on 7 April, INQ000408453, did you issue the new  
15 advice to which you refer in that submission, in which  
16 you concluded that there was "a possible link between  
17 COVID-19 Vaccine AstraZeneca" and this "extremely rare"  
18 condition, TTS?

19 **A.** Yes.

20 **Q.** If we look at page 4, we can see the guts of the advice.

21 "Anyone who experienced cerebral or other major  
22 blood clots ... after [the] first vaccine ... should not  
23 have [a] second dose."

24 Pregnant women "should discuss with a healthcare  
25 professional whether the benefits of having the vaccine

176

1 outweigh the risks".

2 And you make the point, which you've made elsewhere,

3 second-last paragraph: of course it can be caused by the

4 vaccine, and it can occur in unvaccinated people.

5 Myocarditis and pericarditis. May viral infections

6 generally cause myo- and pericarditis?

7 **A.** Yes.

8 **Q.** And so in the MHR's (sic) consideration of whether or

9 not there was a possible association between myo- and

10 pericarditis and mRNA vaccines, was your job made very

11 much harder by the fact that it occurs naturally in the

12 population amongst unvaccinated people?

13 **A.** Yes. And in this case it was very important to look at

14 accruing evidence internationally on a potential link.

15 **Q.** And on 25 June 2021 did you put up a submission to the

16 Licensing Minister -- INQ000494303 -- agreeing with

17 the -- suggesting that they, the Licensing Minister,

18 agree with the Commission on Human Medicines' advice to

19 issue a precautionary warning about the very rare risk

20 of myocarditis and pericarditis following vaccination

21 with Pfizer or Moderna?

22 **A.** Yes. And to get that, if you like, decision made

23 promptly so that we could issue advice on the same day.

24 **Q.** That's dated 25 June. You'd first sought the advice of

25 the expert working group on vaccine benefit-risk within

177

1 medicines are accompanied by a leaflet because the

2 packaging permits that. In an immunisation rollout it's

3 not as amenable, and what we do is work with our UKHSA

4 colleagues to ensure that at that point suitable and

5 compatible information is given compatible with the

6 regulatory position.

7 **Q.** You have already given extensive evidence about the

8 various routes by which safety-related information might

9 reach the public domain and they've included the MHRA's

10 publication of drug analysis profiles, the weekly Yellow

11 Card summary update, press conference, online leaflets,

12 email updates, drug safety update bulletins, CAS alerts.

13 Is there an argument or perhaps a strong case for having

14 a more visible single point of information concerned

15 with safety-related vaccine information?

16 **A.** I think that is a case that can be made, and although on

17 the other hand people source their information in

18 different ways, so it is an area that would be worthy of

19 further reflection in the context of this Inquiry.

20 **Q.** Finally, the MHRA, of course -- and all your evidence

21 has been premised on this basis -- is concerned with

22 medicines generally not just vaccines, and therefore,

23 were you also responsible for giving authorisation for

24 the supply of the six new Covid-related medicines in the

25 United Kingdom, and the two previously authorised but

179

1 the [CHM] on 4 February relating to peri- and

2 myocarditis. Do you consider that that elapse of time,

3 between February and June, was appropriate or required

4 or inevitable?

5 **A.** I think it was probably inevitable, given the rate at

6 which evidence accrued. And the fact that we had a more

7 extended dose interval than in Israel or in the US meant

8 that we were rather reliant on data from other

9 regulatory authorities.

10 **Q.** Some concern has been expressed by some people in

11 certain quarters that either the pharmaceutical

12 companies have not published all relevant

13 post-authorisation trial data or that the MHRA has sat

14 on post-authorisation trial data and not released it.

15 Is either proposition correct?

16 **A.** No, and there are studies being done on any long-term

17 consequences that will be rigorously examined as soon as

18 they're available.

19 **Q.** Patient information leaflets were not always given to

20 patients at the point of vaccination. They may

21 alternatively have been available. Is the issue of

22 whether PILs reached the attention of individual

23 patients a matter for the MHRA? Is the process

24 monitored?

25 **A.** It isn't a monitored process. In general terms,

178

1 repurposed therapeutics?

2 **A.** For the approval of these, the benefit-risk

3 consideration, not for the supply.

4 **Q.** Did I not say "authority", or did I use the word

5 "supply"?

6 **LADY HALLETT:** "Authorisation for the supply".

7 **A.** Sorry. So its authorisation --

8 **MR KEITH:** Authorisation.

9 **A.** -- that's the 174 terminology.

10 **Q.** Yes.

11 **A.** Thank you.

12 **Q.** And you gave authority for Veklury, remdesivir,

13 Ronapreve, Lagevrio, Xevudy, Paxlovid, and Evusheld?

14 **A.** Yes.

15 **Q.** And then the repurposed drugs -- dexamethasone, of which

16 we have had much, and tocilizumab?

17 **A.** Yes.

18 **Q.** In relation to Evusheld, we've heard much evidence on

19 the reasons why no advance purchase of Evusheld was

20 made, prophylactically in 2021, and why, ultimately in

21 2022, the RAPID C-19 committee did not recommend the

22 purchase of Evusheld. Was the MHRA in any way involved

23 in that process of giving advice as to whether it should

24 be purchased -- or commenting on the outcome of the

25 clinical trials, such as they were, or, I don't know,

180

1 the operation of the pharmacovigilance system?  
 2 **A.** No involvement in decisions about purchase, simply  
 3 safety, quality, efficacy, and an awareness of what the  
 4 implications would be once variants were widely  
 5 circulating, variants of the Covid virus.  
 6 **Q.** And you'd authorised Evusheld?  
 7 **A.** Yes.  
 8 **Q.** And lastly, under the heading of therapeutics,  
 9 hydroxychloroquine. Did the MHRA authorise the use or  
 10 supply of hydroxychloroquine?  
 11 **A.** For the treatment or prevention of Covid?  
 12 **Q.** For Covid?  
 13 **A.** No, and nor did any regulator.  
 14 **Q.** What, you mean in western Europe or America?  
 15 **A.** There was an emergency use in the US that was removed.  
 16 **Q.** So hydroxychloroquine can be used for non-Covid  
 17 conditions, some conditions?  
 18 **A.** Rheumatic or malaria.  
 19 **Q.** For which it had been authorised?  
 20 **A.** Yes.  
 21 **Q.** But you had to consider whether or not it should be  
 22 authorised for Covid?  
 23 **A.** We considered the clinical trials for that purpose.  
 24 **Q.** And what did they tell you?  
 25 **A.** During the running of the clinical trials, further

181

1 **MR KEITH:** Thank you very much, Dame June.  
 2 Those are all the questions I have for you.  
 3 **LADY HALLETT:** Just a few more questions, Dame June.  
 4 Mr Odogwu over there is going to ask some questions.  
 5 **Questions from MR ODOGWU**  
 6 **MR ODOGWU:** Good afternoon. I ask questions on behalf of  
 7 the Federation of Ethnic Minority Healthcare  
 8 Organisations. I have two questions relating to the  
 9 Yellow Card Scheme.  
 10 Dr Salman Waqar, who is the president of the British  
 11 Islamic Medical Association, has described the Yellow  
 12 Card system as lacking transparency and failing to build  
 13 trust with ethnic minority groups.  
 14 You mentioned at paragraph 374 of your statement,  
 15 that's your first statement, that the system was updated  
 16 in February 2022 to improve functionality. How, if at  
 17 all, did the updates to the system address or improve  
 18 trust building with marginalised communities?  
 19 **A.** Thank you for your question. It's a very important one.  
 20 The system has been updated to improve the ability  
 21 to interact with all those who report, but I do take the  
 22 point that's being made that, indeed, the ability of  
 23 people from minority communities to use the system with  
 24 confidence and with trust needs more work.  
 25 I did a certain amount, such as I was able to do,

183

1 evidence became available whereby the investigators were  
 2 asked to justify continuing, given a question about  
 3 safety. And clearly -- I'm sorry to continue, the  
 4 RECOVERY trial did continue to very good effect for  
 5 treatment and gave us a definitive answer.  
 6 **Q.** And the definitive answer was?  
 7 **A.** That it was not effective for the treatment of Covid.  
 8 **Q.** And in your recommendations section, do you make number  
 9 of recommendations, which I won't trouble you with now  
 10 because they are plain from the face of your statement,  
 11 concerning frameworks for international collaboration?  
 12 You endorse, and you would ask to be able to do again  
 13 the rolling review process relating to clinical trials  
 14 and the authorisation process. You would like to see  
 15 greater diversity in clinical trials, and a more robust  
 16 surveillance strategy for special groups such as  
 17 pregnant women, and vulnerable populations?  
 18 **A.** I think we would like to really focus on the area of  
 19 clinical trials, from the point of view of diversity,  
 20 because if we start with representative trials, then  
 21 there's a much greater trust from those receiving the  
 22 vaccine that it's been tested in people like me, as was  
 23 normally asked of me, and I think that the clinical  
 24 trial area is one there for really important further  
 25 regulatory improvement.

182

1 during the Covid pandemic, but now is the time, in  
 2 peacetime, to take this to a really improved level. And  
 3 I'm grateful for those comments.  
 4 **Q.** Do you have any observations about what work could be  
 5 done, in terms of recommendations for such a feedback  
 6 scheme?  
 7 **A.** I think it can use different languages, it can make it  
 8 simpler, and it can actually go from a provision of  
 9 information to a greater level of dialogue. And I think  
 10 that all of those things will make a difference to this  
 11 very important area.  
 12 **Q.** Thank you.  
 13 My last question is, FEMHO has emphasised a need for  
 14 collaboration with community leaders and organisations  
 15 to promote Yellow Card participating and reporting  
 16 amongst ethnic minorities. Did the MHRA work with such  
 17 stakeholders during the pandemic to increase awareness  
 18 and participation among ethnic minorities, and if not,  
 19 can you explain why?  
 20 **A.** Thank you again.  
 21 We did. I can speak for myself to have worked with  
 22 Vaughan Gething, in Wales, to try to have outreach  
 23 there, in different communities, and I know working with  
 24 colleagues in the Department of Health, this was a key  
 25 factor.

184

1 I think our efforts were limited by availability,  
2 given the various important calls on our time, and, as  
3 I say, the cure I think is probably to create better  
4 outreach when you're not in the throes of trying to  
5 deliver new vaccines and therapeutics.

6 **MR ODOGWU:** Thank you.

7 **LADY HALLETT:** Thank you very much, Mr Odogwu.

8 Ms Morris.

9 Behind you, but if you could make sure you keep your  
10 voice against into the microphone. Ms Morris won't be  
11 offended.

12 **Questions from MS MORRIS KC**

13 **MS MORRIS:** Not at all, thank you, my Lady.

14 I ask questions on behalf of the Covid Adverse  
15 Reaction and Bereaved groups, and these groups represent  
16 those who have suffered injury or bereavement following  
17 their voluntary acceptance of the Covid-19 vaccines. Of  
18 course, those I represent have many questions, but I'm  
19 going to focus my questions this afternoon on two  
20 topics, the first topic around the decision to authorise  
21 the vaccines.

22 The Inquiry has heard thus far from witnesses  
23 including Dame Kate Bingham about the significant UK  
24 investment in research and development, and supporting  
25 the development of multiple vaccine candidates prior to

185

1 and the very important vehicle for this was the leaflet  
2 that everyone got when they got their vaccine. But I do  
3 accept that awareness of the scheme, which should be  
4 part and parcel of using a medicine safely, could always  
5 be improved.

6 **MS MORRIS:** Thank you.

7 Thank you, my Lady.

8 **LADY HALLETT:** If I allowed Ms Morris a follow-up question,  
9 I think it would be: but can we ensure that everyone got  
10 a leaflet?

11 **MS MORRIS:** Yes.

12 **LADY HALLETT:** We can't, can we?

13 **A.** I think that's a question that might well be put to  
14 colleagues who were involved in the actual vaccination  
15 process. Thank you.

16 **MS MORRIS:** My Lady, thank you, and the follow-up to  
17 follow-up might have been: is there any way of  
18 evaluating that process within the scope of the MHRA or  
19 other agencies? How can they tell if anybody is  
20 receiving or not receiving the leaflet?

21 **LADY HALLETT:** Is there any system in place for ensuring  
22 that – you act on the basis that patients will be  
23 informed by a paper leaflet.

24 **A.** My Lady, it's meant to be supplementary to the  
25 healthcare professional, not the sole source of

187

1 the authorisation. My question is, how much influence,  
2 if any, did the fact that there'd been a significant  
3 cost incurred by the UK in procuring the Covid-19  
4 vaccines have on the MHRA's decision to authorise the  
5 vaccines?

6 **A.** Thank you. May I say again that I want to offer the  
7 deepest regret that any person has suffered the adverse  
8 consequences of a vaccine.

9 In terms of influence of the kind that you've  
10 mentioned, there was no influence whatsoever on the  
11 regulatory decisions of matters relating to  
12 UK investment procurement or other financial aspects to  
13 what people were offered.

14 **Q.** Thank you.

15 My second topic, on the Yellow Card reporting.  
16 Mr Keith has already asked whether there's any room for  
17 improvement around the publicity of the Yellow Card  
18 Scheme. Do you agree there was a lack of publicity  
19 around the Yellow Card and the actions to be taken by an  
20 individual, if one did suffer an adverse reaction, by  
21 the MHRA or by other agencies?

22 **A.** We did make very great efforts to make sure that people  
23 were aware of the offer to report, and that every  
24 reaction reported to us would be treated as a very  
25 important contribution to our understanding of safety,

186

1 information, and in fact, as a result of the Cumberlege  
2 review, there has been a legal change to oblige  
3 a leaflet. As you know, in a pharmacy, sometimes the  
4 medicine comes in a white box. So that change has been  
5 made.

6 I think in the specifics of vaccines, there's  
7 probably some research that could be done to helpfully  
8 calibrate or quantify are there gaps that need to be  
9 addressed.

10 **MS MORRIS:** I'm grateful.

11 **LADY HALLETT:** Thank you, Ms Morris.

12 I think that completes the questions for you, Dame  
13 June. I don't know if you followed Dame Kate Bingham's  
14 evidence yesterday, but I congratulated her on her  
15 extraordinary achievement, but as she was the first to  
16 acknowledge, it wouldn't have been possible without the  
17 immense hard work and the willingness to show  
18 flexibility of people like you, and she described your  
19 approach as "superb".

20 **THE WITNESS:** Oh, thank you, my Lady.

21 **LADY HALLETT:** So we owe you a debt of gratitude.

22 **THE WITNESS:** Thank you, my Lady. It's my agency, actually,  
23 it's every member of staff, but I will convey that to  
24 them.

25 **LADY HALLETT:** I appreciate it's you and your colleagues.

188

1 **THE WITNESS:** Thank you so much, my Lady.  
 2 (The witness withdrew)  
 3 **LADY HALLETT:** Thank you.  
 4 10.00 tomorrow, please.  
 5 **(4.16 pm)**  
 6 **(the hearing adjourned until 10.00 am the following day)**

7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1 I N D E X  
 2  
 3 PROFESSOR STEPHEN EVANS (sworn) ..... 1  
 4 PROFESSOR DANIEL PRIETO-ALHAMBRA ..... 1  
 5 (affirmed)  
 6 Questions from LEAD COUNSEL TO THE INQUIRY ... 1  
 7 for MODULE 4  
 8 Questions from MS MORRIS KC ..... 108  
 9 Questions from MS BANTON ..... 111  
 10  
 11 DAME JUNE RAINE (sworn) ..... 114  
 12 Questions from LEAD COUNSEL TO THE INQUIRY 114  
 13 for MODULE 4  
 14 Questions from MR ODOGWU ..... 183  
 15 Questions from MS MORRIS KC ..... 185  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25



<b>LADY HALLETT:</b> <b>[31]</b> 1/3 12/20 41/22 51/23 51/25 52/3 52/8 81/6 108/4 110/20 111/22 113/15 113/18 113/20 114/10 130/22 131/4 159/11 159/23 160/2 173/17 180/6 183/3 185/7 187/8 187/12 187/21 188/11 188/21 188/25 189/3 <b>MR KEITH: [20]</b> 1/4 1/11 12/22 42/2 51/22 51/24 52/1 52/9 80/24 81/10 108/2 114/7 114/14 131/5 159/12 159/21 160/3 173/18 180/8 183/1 <b>MR ODOGWU: [2]</b> 183/6 185/6 <b>MS BANTON: [4]</b> 111/24 113/11 113/17 113/19 <b>MS MORRIS: [8]</b> 108/8 110/24 111/20 185/13 187/6 187/11 187/16 188/10 <b>PROFESSOR EVANS: [201]</b> <b>PROFESSOR PRIETO-ALHAMBRA</b> <b>: [105]</b> 2/2 4/8 4/18 5/2 5/17 6/1 6/4 41/10 41/19 42/1 42/12 43/5 50/24 51/8 51/20 56/25 57/11 57/22 58/5 58/9 58/25 59/23 64/22 64/25 68/12 68/16 73/20 76/6 76/15 80/18 82/9 82/19 82/22 83/2 83/20 84/1 84/18 85/2 85/8 85/18 86/5 86/8 86/22 87/3 87/16 88/3 88/19 88/24 89/18 89/20 90/6 90/17 90/19 91/6 91/22 92/19 93/1 93/11 93/20 94/3 94/21 95/3 95/11 95/13 96/1 96/4 96/10 96/17 96/22 97/3 97/11 97/22 98/9 98/16 98/22 99/1 99/4 99/8 99/21 99/23 100/5 100/14 100/21 101/3 101/12 101/19 101/25 102/4 102/11 102/18 102/20 103/24 105/5 105/11 105/14 105/20 105/23 106/9 106/12 106/20 106/25 107/11 108/1 112/13	112/25 <b>THE WITNESS: [4]</b> 114/12 188/20 188/22 189/1 <b>1</b> <b>1.10 [2]</b> 114/2 114/4 <b>10 [1]</b> 147/19 <b>10 and [1]</b> 150/7 <b>10,000 [1]</b> 24/15 <b>10.00 [2]</b> 1/2 189/6 <b>10.00 tomorrow [1]</b> 189/4 <b>100 [1]</b> 159/7 <b>100,000 [6]</b> 24/16 24/16 24/25 25/5 100/23 102/1 <b>11 [4]</b> 35/18 59/13 84/3 175/1 <b>11 o'clock [1]</b> 120/21 <b>11 September [1]</b> 150/7 <b>11 September 2024</b> <b>[1]</b> 114/20 <b>11.21 [1]</b> 52/5 <b>11.3 [1]</b> 96/14 <b>11.35 [2]</b> 52/4 52/7 <b>110 [1]</b> 104/18 <b>12 [2]</b> 127/11 155/5 <b>13 [2]</b> 84/8 155/6 <b>14 [4]</b> 56/19 104/17 104/18 107/19 <b>14 million [1]</b> 76/25 <b>15 [2]</b> 73/13 175/11 <b>16 [3]</b> 28/8 175/11 175/13 <b>17 March [1]</b> 166/23 <b>174 [13]</b> 35/13 35/16 35/20 36/3 36/10 36/24 120/8 121/7 121/8 121/23 145/17 148/14 180/9 <b>18 March [1]</b> 167/19 <b>19 [27]</b> 5/11 10/6 12/23 17/2 25/15 30/24 32/3 34/3 42/11 46/15 47/13 50/7 84/25 106/24 109/23 118/6 118/9 129/20 140/21 146/25 155/16 156/10 156/14 176/17 180/21 185/17 186/3 <b>1979 [1]</b> 2/20 <b>1990s [1]</b> 71/9 <b>2</b> <b>2.10 [2]</b> 114/2 114/6 <b>20 [3]</b> 18/15 50/7 108/19 <b>20 December 2024</b> <b>[1]</b> 114/22 <b>20,000 [1]</b> 148/24 <b>2006 [1]</b> 3/10 <b>2012 [1]</b> 36/5	<b>2013 [1]</b> 129/9 <b>2015 [1]</b> 111/10 <b>2018 [1]</b> 3/10 <b>2020 [11]</b> 3/17 35/19 36/20 37/11 42/4 88/12 120/21 122/4 125/12 149/10 159/3 <b>2021 [15]</b> 36/22 72/16 73/3 73/19 102/10 102/12 125/22 126/3 132/21 153/2 165/19 166/8 166/9 177/15 180/20 <b>2022 [3]</b> 159/3 180/21 183/16 <b>2023 [2]</b> 154/13 157/19 <b>2024 [4]</b> 2/6 2/7 114/20 114/22 <b>2025 [1]</b> 1/1 <b>21.8 [1]</b> 96/14 <b>22 [1]</b> 96/11 <b>22 January 2025 [1]</b> 1/1 <b>23 [2]</b> 12/15 75/23 <b>23 November [1]</b> 155/14 <b>25 June [1]</b> 177/24 <b>25 June 2021 [1]</b> 177/15 <b>28/29th November</b> <b>[1]</b> 145/25 <b>3</b> <b>3.16 [1]</b> 40/25 <b>3.17 [2]</b> 64/17 159/24 <b>3.19 [1]</b> 56/20 <b>3.35 [2]</b> 159/23 160/1 <b>3.6 [1]</b> 59/13 <b>30 [2]</b> 92/12 145/6 <b>30,000 [4]</b> 18/15 24/20 47/19 150/21 <b>31 [2]</b> 16/23 49/20 <b>31 January 2020 [1]</b> 35/19 <b>31.4 [2]</b> 49/20 149/4 <b>32 [2]</b> 38/6 92/4 <b>36,000 [1]</b> 159/18 <b>37 [1]</b> 156/7 <b>374 [1]</b> 183/14 <b>38 [1]</b> 157/17 <b>39 degrees [1]</b> 22/9 <b>4</b> <b>4 February [1]</b> 178/1 <b>4.16 [1]</b> 189/5 <b>40 degrees [1]</b> 22/9 <b>40,000 [1]</b> 24/20 <b>41 [1]</b> 98/14 <b>410479 [1]</b> 148/8 <b>42 days [1]</b> 54/21 <b>43,000 [1]</b> 143/24 <b>44 [1]</b> 99/24 <b>48 [1]</b> 101/16	<b>4th [1]</b> 173/6 <b>5</b> <b>5.119 [2]</b> 103/15 103/19 <b>5.16 [1]</b> 93/13 <b>5.60 [1]</b> 99/6 <b>5.67 [1]</b> 100/13 <b>50 [6]</b> 21/18 96/12 96/13 96/15 103/2 168/15 <b>50,000 [8]</b> 24/20 24/25 25/4 25/5 25/7 29/25 63/25 64/12 <b>51 [1]</b> 103/5 <b>52 [1]</b> 155/15 <b>53 [1]</b> 103/9 <b>55 [1]</b> 105/17 <b>56 [1]</b> 108/22 <b>56/57 [1]</b> 104/16 <b>57 [1]</b> 104/16 <b>6</b> <b>6 April [1]</b> 167/23 <b>6 November [1]</b> 2/6 <b>6.2 [1]</b> 80/14 <b>60 [2]</b> 21/19 69/9 <b>60 years [1]</b> 163/20 <b>63 [1]</b> 106/2 <b>65 [1]</b> 106/5 <b>67 [1]</b> 106/22 <b>68 [2]</b> 74/3 107/2 <b>6th [1]</b> 173/6 <b>7</b> <b>7 April [2]</b> 176/5 176/14 <b>7.1 [1]</b> 149/5 <b>70 [3]</b> 73/13 80/13 107/3 <b>73 [1]</b> 77/8 <b>74 [1]</b> 78/3 <b>76 [1]</b> 78/17 <b>8</b> <b>8 March 2023 [1]</b> 154/13 <b>80 [5]</b> 21/13 92/12 104/1 153/16 164/16 <b>81 [1]</b> 104/1 <b>86 [1]</b> 127/2 <b>87 [2]</b> 49/21 149/4 <b>9</b> <b>90 [1]</b> 133/22 <b>95 [1]</b> 56/13 <b>A</b> <b>ability [6]</b> 41/3 51/5 87/17 111/1 183/20 183/22 <b>able [18]</b> 8/23 27/25 32/6 54/25 55/2 55/3 55/6 55/20 57/5 65/25	72/6 75/16 106/15 129/18 135/9 167/11 182/12 183/25 <b>about [92]</b> 14/2 14/13 15/11 16/11 21/10 22/19 22/21 24/7 27/5 27/16 27/23 28/1 29/25 32/9 41/16 43/14 44/24 45/23 48/12 48/20 50/13 52/22 54/13 56/16 57/8 64/1 68/23 69/22 70/12 71/14 74/3 74/19 75/2 77/2 77/2 77/4 77/9 83/23 84/4 84/11 85/11 86/20 87/25 91/19 96/6 96/8 96/12 96/18 99/19 103/21 104/14 105/12 107/12 108/13 108/15 108/22 108/24 110/12 111/1 111/6 111/14 112/5 115/1 115/16 116/10 116/14 123/21 127/2 132/19 143/16 151/20 154/6 154/19 155/6 158/14 158/14 159/18 160/4 160/25 161/6 161/8 161/13 162/9 168/1 171/18 175/21 177/19 179/7 181/2 182/2 184/4 185/23 <b>above [2]</b> 65/17 85/9 <b>abroad [5]</b> 17/3 17/4 17/7 133/7 133/14 <b>absence [6]</b> 22/2 58/20 58/21 82/2 104/12 104/13 <b>absolute [2]</b> 44/9 88/17 <b>absolutely [20]</b> 11/18 19/10 19/14 20/25 22/17 54/3 64/5 69/8 80/7 110/17 123/5 124/20 130/20 134/18 138/11 146/7 146/7 151/8 151/12 153/15 <b>absorbing [1]</b> 66/5 <b>academic [6]</b> 44/5 45/8 53/1 66/22 82/14 103/20 <b>academics [3]</b> 62/23 66/19 66/21 <b>accept [1]</b> 187/3 <b>acceptably [5]</b> 117/11 117/13 135/25 136/2 136/13 <b>acceptance [1]</b> 185/17 <b>access [12]</b> 14/19 14/19 58/19 59/4 60/2 72/11 72/15 77/12 111/18 121/11 129/6
--	---	---	---	--

<b>A</b>	119/5 158/16	<b>advised [1]</b> 173/20	21/7 63/23 121/5	183/21 184/10 185/13
<b>access... [1]</b> 170/4	<b>additional [2]</b> 34/20	<b>adviser [1]</b> 15/3	128/5 128/9 175/12	<b>alleged [1]</b> 106/14
<b>accessibility [1]</b> 108/24	63/14	<b>advising [1]</b> 122/22	<b>agreeing [1]</b> 177/16	<b>allergic [1]</b> 103/8
<b>accompanied [1]</b> 179/1	<b>address [3]</b> 6/10	<b>advisory [5]</b> 3/11	<b>agreement [3]</b> 21/8	<b>allow [6]</b> 56/23 64/18
<b>according [1]</b> 17/14	72/25 183/17	115/24 118/24 134/8	30/18 122/25	91/7 169/23 171/11
<b>account [5]</b> 95/6	<b>addressed [4]</b> 42/7	136/10	<b>agreements [2]</b>	174/21
99/13 138/19 139/7	68/21 134/21 188/9	<b>advocate [1]</b> 79/12	129/12 133/9	<b>allowed [3]</b> 35/23
156/25	<b>addressing [1]</b> 45/23	<b>affect [4]</b> 41/3 75/19	<b>Ah [3]</b> 6/6 69/18	38/22 187/8
<b>accrued [1]</b> 178/6	<b>adenoviral [2]</b> 68/25	163/4 165/23	173/18	<b>allowing [2]</b> 70/1
<b>accruing [1]</b> 177/14	83/16	<b>affected [3]</b> 38/13	<b>aim [1]</b> 56/1	95/2
<b>accumulate [1]</b> 173/24	<b>adequate [1]</b> 96/25	51/5 75/20	<b>aimed [3]</b> 141/25	<b>allows [2]</b> 111/5
<b>accumulated [5]</b>	<b>adequately [1]</b> 48/23	<b>affects [1]</b> 112/9	143/9 143/10	153/5
52/11 55/12 57/7 57/9	<b>adhere [1]</b> 124/1	<b>affirmed [2]</b> 1/9	<b>al [1]</b> 93/21	<b>almost [4]</b> 26/15
57/12	<b>adjourned [1]</b> 189/6	190/5	<b>albeit [2]</b> 50/20	39/24 40/12 40/12
<b>accumulation [1]</b> 58/7	<b>Adjournment [1]</b>	<b>afraid [2]</b> 43/6 52/2	102/16	<b>alone [3]</b> 22/12
<b>accurate [1]</b> 53/17	114/5	<b>Africa [10]</b> 48/7	<b>alert [3]</b> 132/9 132/15	103/14 150/12
<b>achieved [1]</b> 136/11	<b>administration [2]</b>	49/17 49/21 49/24	166/1	<b>along [4]</b> 32/9 69/12
<b>achievement [1]</b> 188/15	32/17 104/21	140/23 143/25 144/15	<b>alerts [1]</b> 179/12	97/20 123/9
<b>acknowledge [3]</b>	<b>administratively [1]</b>	144/18 149/3 149/4	<b>Alhambra [23]</b> 1/6	<b>alongside [4]</b> 27/21
110/8 110/13 188/16	31/22	<b>African [1]</b> 112/9	1/9 1/16 2/1 2/3 2/7	74/6 152/18 162/5
<b>across [12]</b> 31/1 35/2	<b>admission [3]</b> 55/5	<b>after [22]</b> 1/18 21/2	4/5 5/18 17/16 40/18	<b>already [21]</b> 14/16
37/1 40/2 46/9 47/21	92/22 176/3	23/5 28/5 28/6 36/8	50/7 56/13 62/24	14/16 18/9 27/18 32/9
52/25 56/15 100/8	<b>adolescents [1]</b>	52/9 53/14 60/14	64/17 68/11 73/13	66/8 69/22 72/1 72/9
120/10 133/24 165/2	66/18	61/23 66/17 90/9	75/23 80/11 81/2 81/5	72/10 81/12 88/10
<b>act [3]</b> 120/13 134/15	<b>adopted [3]</b> 65/14	93/14 95/20 110/10	92/9 143/14 190/4	96/20 102/12 107/1
187/22	97/18 148/21	128/9 140/13 148/15	<b>Alhambra's [1]</b> 1/18	123/7 145/19 173/11
<b>acted [1]</b> 118/7	<b>ADR [1]</b> 155/9	151/5 167/18 169/22	<b>aligned [2]</b> 30/20	173/12 179/7 186/16
<b>action [2]</b> 35/25	<b>ADRs [4]</b> 155/6 155/6	176/22	38/10	<b>also [65]</b> 3/15 3/17
120/13	155/10 155/16	<b>afternoon [4]</b> 108/9	<b>all [116]</b> 5/17 5/19	4/1 4/18 4/22 5/6
<b>actions [3]</b> 94/11	<b>adults [1]</b> 46/24	115/17 183/6 185/19	5/23 8/10 9/20 14/9	15/19 15/21 22/17
95/14 186/19	<b>advance [2]</b> 151/14	<b>afternoon's [1]</b> 114/7	17/13 18/1 18/7 18/14	28/5 30/2 30/18 41/7
<b>actively [1]</b> 166/6	180/19	<b>again [16]</b> 9/4 80/16	23/10 23/17 23/20	49/1 57/19 58/1 58/3
<b>activities [1]</b> 119/24	<b>adverse [58]</b> 8/18	84/9 96/1 98/22 99/8	26/15 28/7 31/3 33/3	60/2 62/3 68/24 73/14
<b>activity [1]</b> 112/14	14/21 14/23 23/24	100/5 100/14 101/20	33/16 33/18 33/20	73/24 76/1 78/11
<b>actual [3]</b> 53/3 134/3	24/2 24/2 24/3 24/3	102/4 102/21 103/10	34/19 34/19 36/16	80/12 80/21 82/4 85/7
187/14	24/3 24/4 27/14 28/10	159/18 182/12 184/20	38/25 39/14 41/17	86/12 87/7 87/16 88/8
<b>actuality [1]</b> 120/6	29/12 37/24 38/1 38/2	186/6	43/6 46/1 46/9 46/14	91/16 91/17 94/6 94/7
<b>actually [20]</b> 10/7	38/3 40/5 41/12 42/13	<b>against [13]</b> 76/12	46/18 48/23 49/11	94/11 96/4 97/5 97/6
13/25 31/20 82/6	44/10 44/14 47/15	86/17 87/6 87/12 88/1	49/13 50/6 50/17	102/23 106/10 107/22
83/10 109/3 109/24	48/19 51/3 51/10 59/6	88/13 95/9 137/15	50/20 52/3 60/10 76/6	114/18 115/20 123/10
131/14 133/1 133/2	67/24 70/6 70/20	138/10 138/17 139/15	78/15 80/20 80/25	123/14 124/25 133/19
146/8 146/21 151/12	70/24 72/7 72/8 81/23	151/19 185/10	83/23 84/11 85/5 85/6	133/20 140/13 141/16
152/5 160/15 164/17	91/9 92/21 101/20	<b>age [10]</b> 34/14 96/12	86/16 89/5 91/19	142/17 146/17 150/4
171/14 174/17 184/8	106/17 106/18 108/10	98/7 168/13 168/15	95/21 96/19 99/22	152/19 154/2 158/21
188/22	108/16 111/9 112/6	174/11 174/15 175/5	103/16 105/8 106/1	161/11 161/21 163/23
<b>Acute [1]</b> 103/4	135/7 140/10 140/11	176/1 176/8	108/2 113/25 117/7	166/25 175/22 176/12
<b>add [13]</b> 49/11 63/13	142/14 148/3 153/5	<b>aged [1]</b> 96/15	118/17 119/2 119/21	179/23
64/24 65/3 65/3 83/2	154/3 154/21 155/9	<b>agencies [2]</b> 186/21	123/18 126/1 126/5	<b>alter [1]</b> 69/5
104/7 105/5 110/2	163/14 165/3 165/23	187/19	126/19 127/7 128/9	<b>altered [1]</b> 38/18
118/23 126/14 152/19	185/14 186/7 186/20	<b>agency [21]</b> 3/2 5/6	130/21 132/13 132/17	<b>alternative [2]</b> 13/20
158/10	<b>advice [34]</b> 3/18 5/7	33/1 40/13 40/15	136/8 139/5 139/13	77/21
<b>add-on [4]</b> 63/13	33/7 33/10 34/16	58/19 59/18 102/23	139/23 143/3 143/5	<b>alternatively [2]</b>
64/24 65/3 152/19	102/9 118/25 119/2	115/3 115/9 115/18	143/8 143/18 145/12	91/16 178/21
<b>added [2]</b> 61/24	119/14 119/15 123/8	115/22 117/16 117/24	145/23 147/6 147/12	<b>although [13]</b> 2/12
166/3	134/8 134/9 134/11	118/16 119/18 128/11	147/14 148/6 150/16	18/14 117/16 125/14
<b>added-on [1]</b> 61/24	134/12 134/17 135/3	129/9 134/19 142/7	150/25 152/24 156/9	128/23 134/18 141/20
<b>adding [1]</b> 111/11	135/10 135/21 147/8	188/22	157/10 157/16 158/9	144/12 146/9 158/10
<b>addition [3]</b> 80/21	147/8 148/15 170/5	<b>agency's [1]</b> 118/11	158/22 158/25 159/20	168/6 169/3 179/16
	170/5 170/7 171/21	<b>ages [2]</b> 97/21	159/21 160/25 161/10	<b>always [14]</b> 41/23
	173/9 175/2 176/15	174/18	162/24 163/6 164/1	54/6 58/9 65/1 65/2
	176/20 177/18 177/23	<b>agree [8]</b> 17/23 24/6	165/14 167/10 171/5	65/2 100/1 109/13
	177/24 180/23	38/12 41/21 83/22	172/8 172/18 174/20	128/24 136/3 136/6
	<b>advise [2]</b> 148/16	84/1 177/18 186/18	175/10 175/19 178/12	146/10 178/19 187/4
	155/24	<b>agreed [8]</b> 17/21 18/4	179/20 183/2 183/17	<b>am [8]</b> 1/2 52/5 52/7

<b>A</b>	125/16	<b>appearance [3]</b> 25/13 56/2 119/5	<b>areas [7]</b> 1/15 33/17 66/16 81/11 125/3 161/1 163/25	153/18
<b>am...</b> [5] 72/7 109/17 112/13 129/18 189/6	<b>antibodies [4]</b> 10/8 20/5 20/25 21/3	<b>appeared [2]</b> 157/8 169/13	<b>aren't [2]</b> 20/25 22/8	<b>assisted [4]</b> 2/13 5/19 33/4 90/15
<b>amalgamated [1]</b> 55/12	<b>antibody [2]</b> 20/6 20/17	<b>appearing [3]</b> 37/13 98/6 172/5	<b>Argentina [1]</b> 144/1	<b>assisting [1]</b> 114/23
<b>amenable [4]</b> 81/18 163/15 174/11 179/3	<b>any [107]</b> 5/10 5/12 11/24 12/3 17/8 20/7 22/12 27/14 31/1 33/15 35/24 37/2 37/22 37/23 39/14 42/17 43/10 44/20 47/13 55/15 55/16 55/16 55/20 58/20 61/15 63/20 66/23 67/14 68/13 71/22 72/8 72/16 72/21 75/14 81/17 81/22 81/22 81/25 82/1 82/5 83/24 85/17 91/1 92/23 95/22 101/8 101/10 103/13 104/3 104/24 106/17 106/18 109/1 109/2 109/24 109/25 112/10 118/12 118/15 119/16 124/11 125/1 125/2 125/5 125/17 126/17 127/4 132/9 132/12 132/13 133/10 135/2 136/24 138/3 141/21 143/19 146/4 147/18 148/3 150/12 150/12 150/23 151/3 151/14 153/7 153/8 155/24 156/17 162/3 162/3 162/24 165/1 165/17 165/22 166/16 168/25 170/13 176/3 178/16 180/22 181/13 184/4 186/2 186/7 186/16 187/17 187/21	<b>appears [6]</b> 15/22 59/22 65/22 82/17 82/21 127/25	<b>arguably [1]</b> 149/24	<b>associated [14]</b> 26/8 40/21 41/14 42/11 47/11 67/24 82/17 91/5 92/25 93/8 101/17 165/21 165/25 173/4
<b>amended [1]</b> 102/17	<b>amendments [1]</b> 69/24	<b>applicability [1]</b> 137/25	<b>argument [2]</b> 170/11 179/13	<b>association [38]</b> 42/19 43/3 83/10 91/8 91/14 92/3 92/16 95/25 96/2 96/21 98/21 100/3 100/15 101/8 101/10 101/15 103/3 103/6 103/10 103/13 103/23 104/4 104/9 104/13 105/2 105/7 105/8 105/13 105/16 105/25 106/23 156/13 157/8 167/13 168/6 175/6 177/9 183/11
<b>America [8]</b> 21/20 32/17 48/7 65/11 86/3 140/23 140/24 181/14	<b>American [3]</b> 17/22 68/15 140/23	<b>applicant [2]</b> 139/13 150/3	<b>arise [1]</b> 152/7	<b>assume [1]</b> 21/16
<b>among [3]</b> 7/11 66/18 184/18	<b>amongst [5]</b> 51/19 68/19 131/6 177/12 184/16	<b>application [4]</b> 38/20 133/5 146/23 147/24	<b>arisen [2]</b> 37/10 60/24	<b>assurance [2]</b> 128/7 140/1
<b>amount [7]</b> 10/18 57/7 82/3 91/13 113/22 116/14 183/25	<b>amounts [2]</b> 32/18 157/22	<b>applications [2]</b> 41/8 126/12	<b>arises [1]</b> 25/12	<b>assure [1]</b> 119/1
<b>anaemia [2]</b> 112/8 112/15	<b>analyse [3]</b> 22/14 65/8 80/22	<b>applied [12]</b> 11/16 17/9 35/6 35/17 36/25 40/2 121/15 124/1 124/1 132/3 133/20 147/18	<b>arising [3]</b> 57/19 139/21 140/17	<b>assured [1]</b> 130/14
<b>anaemia [2]</b> 112/8 112/15	<b>analysed [2]</b> 55/13 155/15	<b>applies [2]</b> 120/10 126/20	<b>arm [5]</b> 22/5 25/11 26/10 118/16 134/13	<b>AstraZeneca [40]</b> 3/25 5/7 5/14 12/24 12/25 27/10 37/11 42/5 48/6 49/16 50/11 66/17 69/1 73/24 79/17 83/17 89/3 95/25 97/15 97/23 98/1 98/7 98/21 99/12 100/3 101/9 132/20 140/21 148/22 149/8 149/10 166/10 166/17 167/25 168/20 173/5 173/20 174/3 174/14 176/17
<b>analysing [1]</b> 138/8	<b>analysis [19]</b> 25/25 55/18 65/6 65/10 65/19 65/20 67/22 72/19 76/9 76/20 85/3 102/13 109/1 151/21 151/25 152/1 155/20 158/15 179/10	<b>apply [7]</b> 36/11 38/17 120/19 146/17 168/4 174/19 174/20	<b>around [15]</b> 24/20 44/1 96/11 100/23 102/1 130/10 140/19 143/24 144/15 147/17 159/7 165/6 185/20 186/17 186/19	<b>as [252]</b>
<b>analytical [1]</b> 61/24	<b>anaphylaxis [1]</b> 103/8	<b>applying [1]</b> 116/7	<b>ask [21]</b> 39/3 40/14 43/6 45/16 48/12 66/25 81/16 81/20 108/9 109/21 110/23 110/25 113/12 116/10 143/16 158/14 160/25 182/12 183/4 183/6 185/14	<b>Asian [1]</b> 112/3
<b>angle [2]</b> 7/7 7/8	<b>animal [2]</b> 6/24 7/19	<b>appraisal [2]</b> 137/20 137/22	<b>asked [11]</b> 12/16 27/12 77/2 96/20 110/21 140/1 146/21 160/3 182/2 182/23 186/16	<b>aside [1]</b> 37/22
<b>animals [1]</b> 7/17	<b>Annika [1]</b> 5/22	<b>approach [10]</b> 11/16 36/25 38/10 52/21 81/14 116/7 122/9 137/20 147/22 188/19	<b>asking [3]</b> 1/20 61/22 114/25	<b>ask [21]</b> 39/3 40/14 43/6 45/16 48/12 66/25 81/16 81/20 108/9 109/21 110/23 110/25 113/12 116/10 143/16 158/14 160/25 182/12 183/4 183/6 185/14
<b>announcement [1]</b> 170/4	<b>annually [1]</b> 60/18	<b>approaches [1]</b> 18/5	<b>aspect [6]</b> 6/22 33/8 63/14 65/5 125/7 163/3	<b>asked [11]</b> 12/16 27/12 77/2 96/20 110/21 140/1 146/21 160/3 182/2 182/23 186/16
<b>anonimised [1]</b> 55/10	<b>anonymously [1]</b> 78/12	<b>appropriate [16]</b> 38/8 69/19 73/21 91/20 94/1 94/4 102/19 102/20 118/19 119/2 128/12 128/21 130/13 131/2 171/14 178/3	<b>aspects [5]</b> 29/12 51/16 58/15 116/16 186/12	<b>assured [1]</b> 130/14
<b>another [9]</b> 27/13 60/10 75/1 78/2 89/17 92/7 126/6 139/2 144/24	<b>answer [7]</b> 33/12 70/23 72/6 72/14 173/10 182/5 182/6	<b>approval [5]</b> 1/11 122/17 151/14 151/14 180/2	<b>assess [5]</b> 61/20 61/25 62/4 158/17 172/4	<b>assure [1]</b> 119/1
<b>answers [1]</b> 51/23	<b>anti [1]</b> 125/16	<b>approve [1]</b> 148/19	<b>assessment [11]</b> 40/9 58/6 61/14 62/5 68/8 95/4 115/21 132/22 141/15 145/23 146/20	<b>assured [1]</b> 130/14
<b>anti-epileptic [1]</b>		<b>approved [1]</b> 113/10	<b>assessor [1]</b> 115/7	<b>assured [1]</b> 130/14
		<b>approximately [1]</b> 50/15	<b>assessors [1]</b> 137/23	<b>assured [1]</b> 130/14
		<b>April [9]</b> 102/12 167/12 167/23 172/20 172/22 174/8 175/3 176/5 176/14	<b>assist [2]</b> 82/10 109/1	<b>assured [1]</b> 130/14
		<b>April 2021 [1]</b> 102/12	<b>assistance [2]</b> 114/1	<b>assured [1]</b> 130/14
		<b>archived [1]</b> 154/11		<b>assured [1]</b> 130/14
		<b>are [204]</b>		<b>assured [1]</b> 130/14
		<b>area [7]</b> 22/24 30/3 144/9 179/18 182/18 182/24 184/11		<b>assured [1]</b> 130/14

<b>A</b>	122/4 <b>availability [3]</b> 59/19 80/8 185/1 <b>available [28]</b> 27/11 33/22 36/12 52/12 58/14 58/23 59/22 60/1 60/15 76/3 80/22 83/4 84/24 97/9 109/4 109/8 129/22 134/5 136/8 139/13 139/23 142/22 145/23 161/14 174/9 178/18 178/21 182/1 <b>availed [1]</b> 64/7 <b>aware [28]</b> 32/4 40/4 46/14 47/17 65/18 66/20 66/23 66/24 72/7 95/15 97/10 109/5 110/1 112/10 112/13 116/5 122/8 126/1 132/15 139/14 147/22 149/15 163/9 163/9 166/24 167/7 171/8 186/23 <b>awareness [6]</b> 163/10 163/16 164/18 181/3 184/17 187/3 <b>away [1]</b> 12/13 <b>awry [1]</b> 44/24	<b>basic [1]</b> 55/2 <b>basically [2]</b> 22/18 118/1 <b>basis [16]</b> 11/2 11/12 38/23 80/23 94/16 120/13 136/7 140/7 141/16 146/2 155/7 167/1 169/2 169/3 179/21 187/22 <b>bastions [1]</b> 138/2 <b>batch [20]</b> 29/6 29/15 29/16 29/17 30/4 30/7 30/10 30/17 30/19 129/22 130/2 130/2 130/9 130/16 130/17 130/18 130/19 130/24 130/25 132/19 <b>batches [8]</b> 29/21 30/8 30/11 131/5 131/8 131/8 132/20 132/23 <b>be [291]</b> <b>Bearing [1]</b> 75/7 <b>bearings [1]</b> 154/9 <b>beat [1]</b> 144/15 <b>became [7]</b> 3/8 27/11 40/10 60/18 166/24 171/8 182/1 <b>because [77]</b> 1/13 6/9 8/6 8/19 11/12 11/18 11/23 12/5 13/17 23/5 24/24 25/16 26/10 30/25 36/24 37/18 39/2 39/5 41/16 45/3 51/17 54/17 56/17 57/14 59/23 63/11 64/11 67/13 72/5 77/23 78/11 81/11 81/18 82/4 83/5 84/21 86/13 86/16 87/18 88/15 91/25 92/17 94/4 94/6 94/19 97/14 98/2 98/6 98/10 101/5 101/13 109/21 116/12 119/6 121/3 121/21 124/22 129/9 134/14 136/3 136/17 145/7 145/9 146/1 146/12 148/16 151/1 154/11 159/19 164/9 168/25 169/23 171/23 173/17 179/1 182/10 182/20 <b>become [5]</b> 3/1 30/5 65/17 138/15 174/9 <b>becomes [4]</b> 25/11 47/10 73/12 149/15 <b>becoming [1]</b> 85/15 <b>bedrock [1]</b> 54/4 <b>been [91]</b> 2/13 5/18 18/10 23/17 25/15 30/25 31/2 32/15 38/13 39/19 45/4 45/6 55/19 59/22 62/13	68/18 68/21 70/19 71/19 71/20 72/1 72/2 72/18 75/3 75/24 79/12 80/14 81/11 81/24 87/24 91/1 91/1 91/2 91/5 91/16 101/17 109/25 110/16 111/9 113/5 114/10 115/22 116/5 116/23 123/20 131/10 131/10 131/11 131/17 131/19 132/11 133/10 133/11 133/12 133/24 136/10 136/15 141/3 145/19 154/25 155/1 156/18 157/7 158/20 159/19 160/9 161/1 162/17 163/13 163/19 163/20 165/25 168/15 169/3 169/5 169/6 169/9 170/15 172/24 175/7 178/10 178/21 179/21 181/19 182/22 183/20 186/2 187/17 188/2 188/4 188/16 <b>before [13]</b> 34/23 48/12 53/14 72/19 101/4 132/18 162/24 169/16 170/7 170/12 170/23 171/2 172/4 <b>beforehand [1]</b> 8/20 <b>began [2]</b> 56/11 166/21 <b>beginning [4]</b> 8/22 8/23 96/6 169/1 <b>begun [2]</b> 87/21 167/1 <b>behalf [8]</b> 108/10 111/25 118/4 119/21 121/22 134/16 183/6 185/14 <b>behave [2]</b> 46/23 46/24 <b>behaved [1]</b> 12/4 <b>behaviour [2]</b> 11/21 12/1 <b>Behind [1]</b> 185/9 <b>being [52]</b> 7/19 13/8 13/24 23/6 24/17 26/16 27/19 30/11 30/21 31/21 32/19 37/16 39/11 40/5 41/13 43/25 44/6 46/9 50/2 52/3 59/3 73/7 75/16 86/15 87/14 87/22 91/20 93/7 93/8 94/23 98/8 98/12 107/13 107/13 107/14 113/9 117/20 123/3 123/3 135/9 158/5 158/21 160/8 160/13 160/22 165/10 166/5 167/16 174/13 175/23 178/16 183/22	<b>believe [11]</b> 23/19 58/25 69/16 69/18 69/23 87/17 91/4 125/24 160/18 165/3 170/17 <b>believed [1]</b> 163/12 <b>Bell's [3]</b> 99/24 100/11 100/16 <b>Bell's palsy [2]</b> 100/11 100/16 <b>below [4]</b> 21/20 96/12 100/23 168/15 <b>Ben [1]</b> 54/18 <b>Ben Goldacre [1]</b> 54/18 <b>beneficial [6]</b> 60/9 88/23 89/8 94/20 112/17 158/22 <b>benefit [30]</b> 22/15 46/10 51/18 61/9 84/11 84/12 84/13 84/15 84/17 84/20 92/10 94/10 95/6 102/13 113/9 122/19 136/3 136/7 136/12 136/19 137/2 137/21 138/9 138/20 158/15 161/24 162/16 167/4 177/25 180/2 <b>benefit-risk [8]</b> 94/10 122/19 136/19 137/21 161/24 162/16 177/25 180/2 <b>benefited [1]</b> 48/2 <b>benefits [6]</b> 4/10 102/14 107/9 137/17 161/13 176/25 <b>bereaved [5]</b> 71/13 108/11 110/11 111/3 185/15 <b>bereavement [1]</b> 185/16 <b>best [5]</b> 75/18 76/2 76/15 93/22 101/13 <b>Bethell [1]</b> 148/10 <b>better [12]</b> 58/13 59/10 64/14 67/14 80/6 97/13 107/8 111/17 143/22 144/14 144/14 185/3 <b>between [39]</b> 3/10 7/25 8/11 17/6 17/6 17/21 18/14 21/14 29/21 37/5 39/9 42/9 43/3 54/18 59/17 74/25 80/1 80/2 80/3 80/7 83/11 84/5 85/5 89/1 92/16 100/11 100/15 100/22 106/23 141/11 142/16 147/11 159/2 167/11 167/22 174/18 176/16 177/9 178/3 <b>beyond [1]</b> 118/15
----------	--	--	---	---

<b>B</b>	<b>bottom [1]</b> 156/8 <b>bound [1]</b> 104/23 <b>boundaries [1]</b> 56/15 <b>box [2]</b> 105/17 188/4 <b>boxes [1]</b> 92/12 <b>brain [2]</b> 71/1 97/5 <b>Brazil [6]</b> 49/17 49/19 140/22 144/1 149/3 149/4 <b>break [3]</b> 52/6 81/4 159/25 <b>breastfeeding [1]</b> 86/1 <b>Brexit [1]</b> 36/23 <b>Brian [1]</b> 4/3 <b>briefing [1]</b> 167/19 <b>briefings [1]</b> 161/22 <b>briefly [2]</b> 83/14 160/25 <b>bring [4]</b> 1/16 53/11 67/14 176/5 <b>bringing [4]</b> 42/3 137/23 164/6 171/20 <b>brings [2]</b> 27/23 138/3 <b>Britain [2]</b> 98/8 121/10 <b>Britain's [1]</b> 72/11 <b>British [4]</b> 131/15 144/20 172/10 183/10 <b>broad [2]</b> 127/10 144/2 <b>broadening [1]</b> 33/21 <b>broadly [6]</b> 8/11 9/9 52/17 53/1 142/12 176/7 <b>brought [5]</b> 61/17 69/11 73/7 91/2 156/4 <b>build [1]</b> 183/12 <b>building [1]</b> 183/18 <b>built [1]</b> 131/23 <b>bulk [1]</b> 90/11 <b>bulletins [1]</b> 179/12 <b>bureaucratic [3]</b> 61/7 61/9 61/12 <b>Burn [1]</b> 5/22 <b>bush [1]</b> 144/15 <b>busy [1]</b> 157/1 <b>but [219]</b> <b>byzantine [3]</b> 61/4 61/6 61/11	<b>calling [1]</b> 78/20 <b>calls [1]</b> 185/2 <b>Cambridge [1]</b> 175/25 <b>came [5]</b> 37/8 121/5 122/23 132/6 160/4 <b>campaign [1]</b> 94/14 <b>campus [1]</b> 129/7 <b>can [106]</b> 6/19 8/7 11/4 11/7 11/12 13/9 13/25 15/13 15/20 20/22 21/13 22/1 25/3 25/17 25/23 25/25 26/20 27/5 27/16 29/9 29/10 29/11 34/7 39/25 43/14 44/18 48/24 56/17 57/8 58/11 59/15 59/20 61/9 62/6 64/3 70/24 75/12 75/20 77/12 77/22 78/23 79/2 81/2 81/10 82/23 95/14 96/3 96/3 97/2 97/5 98/18 98/19 99/3 99/4 100/10 102/2 102/5 102/5 104/23 107/17 109/1 111/4 124/11 127/9 130/1 133/14 134/6 139/14 145/5 145/12 145/15 147/7 147/14 153/4 154/8 154/10 154/15 156/21 156/24 157/17 158/25 163/5 168/17 171/12 171/23 171/24 172/1 172/23 173/15 173/25 174/12 175/1 176/4 176/20 177/3 177/4 179/16 181/16 184/7 184/7 184/8 184/19 184/21 187/9 187/12 187/19 <b>can't [6]</b> 12/16 16/16 20/17 33/16 157/10 187/12 <b>Canada [5]</b> 59/18 60/6 69/14 69/15 84/6 <b>Canadian [1]</b> 17/22 <b>cancer [1]</b> 136/21 <b>cancers [1]</b> 7/18 <b>candidates [1]</b> 185/25 <b>cannot [5]</b> 16/13 22/12 34/7 72/24 84/9 <b>capability [1]</b> 129/10 <b>Cape [1]</b> 47/5 <b>Capillary [1]</b> 103/2 <b>captures [1]</b> 155/10 <b>Card [45]</b> 61/23 63/3 63/10 63/17 64/9 64/15 64/18 64/25 69/22 70/21 78/5 96/11 111/10 111/13 111/15 115/15 151/17	152/18 153/12 154/7 155/10 155/18 156/11 157/13 158/7 159/8 159/15 160/5 160/7 160/16 160/20 161/9 163/9 163/15 163/24 164/13 165/20 170/25 179/11 183/9 183/12 184/15 186/15 186/17 186/19 <b>Cards [5]</b> 154/16 155/7 156/1 166/7 167/20 <b>care [10]</b> 40/1 55/21 95/16 118/5 126/24 156/17 165/12 170/19 170/21 173/12 <b>careful [1]</b> 57/18 <b>carefully [7]</b> 15/2 22/7 22/10 68/1 144/12 151/13 165/4 <b>carers [1]</b> 97/20 <b>Caribbean [1]</b> 112/9 <b>carried [12]</b> 6/16 34/25 36/22 54/14 57/25 62/11 62/12 66/19 74/16 75/25 132/22 140/21 <b>carries [1]</b> 129/4 <b>carry [4]</b> 40/9 47/23 53/2 128/22 <b>carrying [2]</b> 131/21 133/19 <b>CAS [1]</b> 179/12 <b>case [52]</b> 2/5 2/6 5/18 25/16 27/10 29/4 31/8 32/3 33/9 34/3 45/19 46/20 46/21 46/23 47/16 52/10 52/16 55/11 60/1 60/22 82/6 82/16 85/7 91/11 94/15 94/22 95/9 98/10 99/9 100/8 101/5 102/25 104/13 112/16 120/25 124/15 132/7 133/4 133/13 137/16 140/20 142/2 150/15 151/18 157/11 158/17 163/7 172/12 176/3 177/13 179/13 179/16 <b>cases [44]</b> 17/3 17/4 19/20 24/25 25/22 37/12 37/14 37/23 42/5 42/9 71/22 72/1 72/4 72/6 75/8 75/9 82/12 90/2 92/22 95/25 96/14 96/16 99/14 99/16 100/18 100/25 103/12 105/14 110/5 110/9 118/3 137/14 149/12 149/23 150/12 157/2 157/7 167/2 167/13 168/25	169/4 169/12 169/12 172/5 <b>catch [1]</b> 112/19 <b>causal [4]</b> 42/18 64/16 75/21 91/7 <b>causative [3]</b> 42/8 103/14 175/6 <b>causatively [3]</b> 37/20 41/15 101/1 <b>cause [8]</b> 8/18 94/6 95/21 102/19 162/22 162/23 163/1 177/6 <b>caused [34]</b> 25/14 25/19 36/23 40/20 71/23 73/11 73/23 75/4 82/6 82/7 91/17 97/2 97/6 99/3 99/4 99/7 102/2 149/23 149/24 149/25 154/22 154/25 155/1 156/14 158/4 158/6 158/20 166/5 167/17 171/9 171/24 172/1 172/6 177/3 <b>causing [3]</b> 22/9 95/1 167/25 <b>cell [6]</b> 112/8 112/14 112/15 112/24 113/14 133/21 <b>cells [2]</b> 20/7 20/7 <b>central [1]</b> 98/17 <b>centre [6]</b> 44/6 142/21 142/25 161/17 175/24 176/6 <b>centred [1]</b> 147/17 <b>centres [4]</b> 17/15 48/5 109/9 163/24 <b>CEPI [1]</b> 127/1 <b>cerebral [2]</b> 150/13 176/21 <b>certain [14]</b> 11/4 17/21 21/20 22/4 34/15 59/2 59/4 66/18 89/8 98/5 131/12 174/15 178/11 183/25 <b>certainly [12]</b> 32/14 47/8 67/3 81/6 124/24 126/2 135/1 156/24 159/23 167/4 168/13 174/5 <b>certificate [1]</b> 130/4 <b>certified [1]</b> 131/12 <b>chain [1]</b> 127/15 <b>chair [5]</b> 3/12 15/12 15/14 115/20 115/24 <b>chaired [1]</b> 15/14 <b>champions [1]</b> 164/13 <b>chance [1]</b> 24/23 <b>change [3]</b> 141/20 188/2 188/4 <b>changed [4]</b> 12/1 60/17 90/8 91/10 <b>changes [2]</b> 132/9
----------	--	--	---	--

<p><b>C</b></p> <p><b>changes... [1]</b> 132/13</p> <p><b>chapter [1]</b> 124/10</p> <p><b>characterisation [1]</b> 81/19</p> <p><b>characterised [1]</b> 84/10</p> <p><b>characteristics [6]</b> 11/20 77/7 141/19 142/18 143/9 175/13</p> <p><b>charge [2]</b> 126/20 127/3</p> <p><b>chart [1]</b> 176/7</p> <p><b>check [6]</b> 22/7 22/10 26/18 30/15 32/22 171/4</p> <p><b>checking [1]</b> 28/19</p> <p><b>chemical [1]</b> 29/18</p> <p><b>chemistry [1]</b> 2/18</p> <p><b>chief [2]</b> 115/2 120/3</p> <p><b>child [1]</b> 49/7</p> <p><b>children [7]</b> 46/23 46/23 86/19 86/21 86/22 86/24 86/25</p> <p><b>CHM [18]</b> 33/18 37/19 42/4 119/3 124/24 145/8 147/8 147/9 147/11 150/6 162/2 167/8 167/9 172/14 173/5 173/9 175/2 178/1</p> <p><b>CHM's [1]</b> 172/16</p> <p><b>Chris [1]</b> 15/16</p> <p><b>chronic [1]</b> 104/18</p> <p><b>circulating [3]</b> 18/23 18/25 181/5</p> <p><b>circumstances [4]</b> 38/8 44/22 110/14 118/19</p> <p><b>citizens [1]</b> 121/15</p> <p><b>Civil [2]</b> 124/16 124/17</p> <p><b>clarify [1]</b> 169/25</p> <p><b>classification [1]</b> 81/19</p> <p><b>classified [2]</b> 99/1 100/6</p> <p><b>clear [7]</b> 30/6 37/18 44/24 88/11 117/24 122/25 175/14</p> <p><b>cleared [1]</b> 172/24</p> <p><b>clearly [13]</b> 59/8 77/16 118/11 118/18 125/8 132/25 138/18 141/20 150/2 151/20 162/5 173/15 182/3</p> <p><b>clever [2]</b> 53/10 55/24</p> <p><b>clinical [47]</b> 4/24 6/15 6/20 7/1 7/4 7/21 8/4 13/14 19/15 20/10 21/1 21/2 21/4 23/7 23/17 39/16 41/18</p>	<p>45/1 50/8 52/14 56/8 61/8 66/11 107/23 122/19 139/8 139/8 139/17 139/22 146/19 147/15 147/16 149/14 156/17 156/22 165/10 165/17 170/20 171/21 173/13 180/25 181/23 181/25 182/13 182/15 182/19 182/23</p> <p><b>clinically [3]</b> 19/24 20/9 35/9</p> <p><b>clinician [2]</b> 15/12 153/8</p> <p><b>clinicians [3]</b> 44/9 157/1 174/22</p> <p><b>close [9]</b> 39/9 133/18 142/6 147/11 151/5 153/16 161/23 164/4 164/16</p> <p><b>closely [10]</b> 9/25 10/13 42/16 95/17 119/23 123/9 123/18 151/10 152/4 171/15</p> <p><b>closest [1]</b> 9/20</p> <p><b>clots [5]</b> 97/2 97/4 97/5 173/4 176/22</p> <p><b>clotting [1]</b> 150/13</p> <p><b>cluster [1]</b> 79/15</p> <p><b>co [3]</b> 5/19 115/24 175/14</p> <p><b>co-authors [1]</b> 5/19</p> <p><b>co-chair [1]</b> 115/24</p> <p><b>co-ordinated [1]</b> 175/14</p> <p><b>Coalition [2]</b> 126/25 165/5</p> <p><b>code [3]</b> 12/14 109/10 125/20</p> <p><b>codes [1]</b> 124/17</p> <p><b>cognisant [1]</b> 147/21</p> <p><b>cohort [4]</b> 76/16 88/5 96/24 98/7</p> <p><b>cohorts [1]</b> 168/15</p> <p><b>coincidental [6]</b> 25/13 42/11 82/7 149/23 155/1 167/16</p> <p><b>coincidentally [3]</b> 40/21 154/25 158/19</p> <p><b>collaboration [6]</b> 3/17 59/1 59/10 97/14 182/11 184/14</p> <p><b>colleagues [6]</b> 90/15 90/16 179/4 184/24 187/14 188/25</p> <p><b>collected [2]</b> 57/14 57/17</p> <p><b>collecting [1]</b> 172/11</p> <p><b>collection [1]</b> 135/6</p> <p><b>College [1]</b> 3/7</p> <p><b>combination [1]</b> 27/21</p> <p><b>combine [1]</b> 91/23</p> <p><b>combined [1]</b> 87/7</p>	<p><b>come [12]</b> 6/6 14/4 14/12 31/22 61/19 81/7 81/8 122/4 132/21 146/22 162/7 165/2</p> <p><b>comes [6]</b> 91/23 126/23 146/10 148/7 164/10 188/4</p> <p><b>coming [4]</b> 21/7 24/9 85/4 95/5</p> <p><b>commence [2]</b> 1/20 114/14</p> <p><b>commensurate [2]</b> 122/13 161/19</p> <p><b>comment [1]</b> 110/2</p> <p><b>commenting [1]</b> 180/24</p> <p><b>comments [2]</b> 110/15 184/3</p> <p><b>Commission [21]</b> 33/6 33/14 37/19 72/20 102/8 115/8 118/25 119/15 123/6 124/23 134/6 134/17 135/5 135/16 135/19 146/11 148/15 150/5 159/1 166/25 177/18</p> <p><b>commissioned [4]</b> 59/20 107/13 107/13 107/14</p> <p><b>commissioners [1]</b> 135/19</p> <p><b>commissioning [4]</b> 60/3 60/7 84/7 107/15</p> <p><b>commitment [1]</b> 135/2</p> <p><b>committee [9]</b> 3/11 15/22 16/2 33/5 115/21 115/24 123/15 150/4 180/21</p> <p><b>committees [6]</b> 3/10 15/14 136/10 138/4 138/20 140/1</p> <p><b>common [3]</b> 98/11 126/16 149/18</p> <p><b>communicated [1]</b> 175/24</p> <p><b>communicating [1]</b> 175/20</p> <p><b>communications [1]</b> 175/14</p> <p><b>communities [5]</b> 47/12 48/17 183/18 183/23 184/23</p> <p><b>community [4]</b> 110/8 171/16 171/22 184/14</p> <p><b>comorbidities [2]</b> 27/19 46/13</p> <p><b>companies [3]</b> 44/19 126/8 178/12</p> <p><b>company [2]</b> 16/8 140/24</p> <p><b>comparative [1]</b> 100/11</p>	<p><b>compared [4]</b> 74/1 76/12 93/15 139/2</p> <p><b>comparing [1]</b> 22/15</p> <p><b>comparison [4]</b> 38/15 57/7 79/9 99/18</p> <p><b>comparisons [2]</b> 74/25 84/5</p> <p><b>compatible [2]</b> 179/5 179/5</p> <p><b>complete [2]</b> 57/4 151/15</p> <p><b>completed [3]</b> 7/15 109/25 122/21</p> <p><b>completely [4]</b> 38/10 89/21 100/2 164/23</p> <p><b>completes [2]</b> 113/20 188/12</p> <p><b>complex [10]</b> 20/6 36/22 57/23 61/4 61/12 104/10 125/6 143/11 171/17 171/20</p> <p><b>complexity [3]</b> 111/12 123/22 166/3</p> <p><b>compliment [1]</b> 69/3</p> <p><b>component [1]</b> 15/18</p> <p><b>components [2]</b> 117/2 127/13</p> <p><b>comprise [1]</b> 7/21</p> <p><b>compute [1]</b> 76/22</p> <p><b>computing [1]</b> 55/24</p> <p><b>concentrate [1]</b> 21/5</p> <p><b>concentrating [1]</b> 40/16</p> <p><b>concept [1]</b> 25/9</p> <p><b>Conceptually [1]</b> 21/23</p> <p><b>concern [7]</b> 69/14 71/14 75/2 135/5 170/4 171/18 178/10</p> <p><b>concerned [12]</b> 33/25 35/7 52/22 81/15 112/2 116/11 129/21 144/10 152/2 153/20 179/14 179/21</p> <p><b>concerning [12]</b> 16/12 23/7 67/6 72/11 72/12 102/16 149/13 154/2 161/11 162/3 170/14 182/11</p> <p><b>Concerns [1]</b> 162/17</p> <p><b>concise [1]</b> 176/1</p> <p><b>conclude [7]</b> 28/7 76/2 92/14 103/2 105/1 136/13 149/7</p> <p><b>concluded [2]</b> 173/3 176/16</p> <p><b>conclusion [6]</b> 16/4 43/5 68/6 93/16 100/10 100/24</p> <p><b>conclusions [4]</b> 65/9 97/7 167/3 169/18</p> <p><b>conclusive [2]</b> 82/2 168/7</p> <p><b>conclusively [1]</b></p>	<p>81/20</p> <p><b>condition [35]</b> 25/10 25/12 25/19 27/5 27/22 42/6 82/17 83/11 87/23 91/12 91/16 92/8 92/21 93/4 93/24 94/6 96/9 98/10 98/17 100/20 101/16 101/24 102/2 102/4 102/9 103/1 103/5 136/25 149/13 151/4 158/18 174/14 174/19 174/20 176/18</p> <p><b>condition/side [1]</b> 82/17</p> <p><b>conditions [33]</b> 4/25 23/8 26/8 27/2 27/19 34/5 34/8 34/13 34/20 43/12 44/8 73/16 90/25 92/13 92/16 98/5 103/18 103/21 104/1 104/5 104/18 105/3 105/22 107/19 135/14 139/7 147/18 148/20 152/3 152/4 169/6 181/17 181/17</p> <p><b>conduct [6]</b> 5/10 15/22 15/23 137/21 150/5 151/24</p> <p><b>conducted [14]</b> 8/2 14/14 16/25 17/6 17/7 30/21 50/3 67/5 86/23 104/2 141/7 143/20 143/25 144/5</p> <p><b>conference [4]</b> 128/13 129/1 176/5 179/11</p> <p><b>conferences [1]</b> 86/16</p> <p><b>confidence [12]</b> 17/19 21/9 21/14 48/20 48/22 48/25 61/15 64/2 77/15 144/11 175/16 183/24</p> <p><b>confident [1]</b> 20/22</p> <p><b>confirmed [1]</b> 106/15</p> <p><b>conflict [2]</b> 123/23 125/18</p> <p><b>conflicting [1]</b> 92/1</p> <p><b>conflicts [1]</b> 123/21</p> <p><b>confounding [1]</b> 97/1</p> <p><b>confusing [1]</b> 66/14</p> <p><b>congratulated [1]</b> 188/14</p> <p><b>connect [1]</b> 111/13</p> <p><b>connected [4]</b> 26/9 41/15 91/1 101/1</p> <p><b>connection [3]</b> 42/8 125/5 156/13</p> <p><b>connective [1]</b> 104/22</p> <p><b>connectivity [1]</b> 111/7</p> <p><b>consequence [3]</b></p>
--	---	--	--	---

<b>C</b>	36/6 69/25 87/12 101/6	56/15 56/19 58/9 63/17 65/6 66/8 73/10 73/23 76/7 76/15 78/5 88/16 89/7 91/9 92/4 94/5 95/16 97/14 103/15 104/3 104/5 106/15 109/8 112/20 113/9 113/23 113/24 114/8 114/14 125/8 132/4 132/8 139/18 144/13 146/2 151/2 154/5 164/19 166/4 171/5 172/4 172/24 174/20 175/21 175/24 177/23 184/4 185/9 187/4 188/7	88/11 91/17 93/15 94/7 94/15 94/22 94/23 97/2 97/6 99/3 99/4 99/7 99/11 100/16 102/2 102/6 106/4 106/24 108/10 109/19 112/19 118/6 118/9 129/20 140/20 140/21 146/25 155/16 156/10 156/14 166/4 167/17 172/1 176/2 176/10 176/17 179/24 181/5 181/11 181/12 181/16 181/22 182/7 184/1 185/14 185/17 186/3	23/7 38/9 38/19 38/22 38/25 39/10 40/11 41/6 41/7 44/11 48/6 49/1 49/3 52/11 52/17 52/24 52/24 53/6 53/11 53/17 53/17 53/24 54/1 55/11 55/23 56/1 56/6 56/8 56/10 56/21 56/21 57/7 57/9 57/13 57/15 57/16 57/19 57/24 58/7 58/12 58/13 58/20 58/23 59/10 59/21 59/24 60/10 62/14 63/2 67/18 70/17 79/20 79/21 79/23 80/10 80/16 80/22 85/14 85/21 86/2 86/3 86/6 86/11 86/14 86/15 86/20 86/25 87/3 87/8 87/25 88/20 90/2 90/6 91/13 93/9 93/12 95/17 95/24 96/2 97/8 97/17 101/25 106/10 106/20 107/9 109/4 109/24 111/7 139/8 139/10 139/21 139/23 140/16 141/5 145/17 145/19 145/24 146/2 148/4 150/3 150/4 151/21 154/20 156/1 156/18 173/24 174/4 174/9 174/17 175/5 178/8 178/13 178/14
<b>consequence... [3]</b> 27/23 36/20 83/23	<b>continuing [7]</b> 18/10 60/11 60/14 75/1 107/22 168/9 182/2	<b>Covid-19 [23]</b> 5/11 10/6 12/23 17/2 25/15 30/24 32/3 34/3 42/11 46/15 47/13 84/25 106/24 118/6 118/9 129/20 140/21 146/25 155/16 156/14 176/17 185/17 186/3	<b>database [3]</b> 72/12 72/12 164/11	
<b>consequences [4]</b> 9/21 176/2 178/17 186/8	<b>contraindications [1]</b> 142/13	<b>create [1]</b> 185/3	<b>Datalink [1]</b> 56/8	
<b>consequent [1]</b> 87/23	<b>contrast [3]</b> 15/23 169/8 172/6	<b>created [1]</b> 77/10	<b>dataset [1]</b> 173/21	
<b>consider [7]</b> 89/14 89/19 160/8 160/22 174/9 178/2 181/21	<b>contribute [1]</b> 64/4	<b>critical [4]</b> 137/19 137/21 138/1 138/5	<b>datasets [1]</b> 80/20	
<b>considerable [4]</b> 3/15 4/24 44/19 48/9	<b>contributing [1]</b> 168/11	<b>critically [1]</b> 164/11	<b>date [7]</b> 86/15 106/23 109/13 109/14 109/15 125/25 126/4	
<b>consideration [14]</b> 47/10 47/10 99/17 107/21 116/7 163/3 163/4 170/3 173/23 174/12 174/25 175/4 177/8 180/3	<b>contribution [1]</b> 186/25	<b>criticism [1]</b> 50/13	<b>dated [5]</b> 2/5 114/19 114/21 145/6 177/24	
<b>consideration [14]</b> 47/10 47/10 99/17 107/21 116/7 163/3 163/4 170/3 173/23 174/12 174/25 175/4 177/8 180/3	<b>control [21]</b> 3/2 4/20 11/3 13/8 13/17 19/1 29/5 57/15 74/20 74/23 77/23 96/25 96/25 107/18 115/9 115/18 129/4 129/8 129/14 130/3 152/21	<b>cross [1]</b> 54/10	<b>day [8]</b> 120/21 146/13 154/1 155/24 156/2 173/20 177/23 189/6	
<b>considerations [5]</b> 18/18 119/17 168/4 171/13 176/13	<b>controlled [6]</b> 10/25 11/15 13/2 17/11 44/8 79/9	<b>Cumberlege [1]</b> 188/1	<b>days [6]</b> 20/19 23/14 27/4 54/21 73/23 90/8	
<b>considered [9]</b> 37/9 38/11 71/23 108/19 158/23 159/1 171/15 175/2 181/23	<b>convener [1]</b> 4/1	<b>Cumberlege's [1]</b> 125/12	<b>deal [22]</b> 1/12 1/17 1/21 20/9 28/16 32/6 38/9 45/16 48/6 52/17 69/9 74/16 75/2 80/4 81/10 84/8 87/21 92/6 145/18 156/7 156/16 163/24	
<b>considering [3]</b> 147/15 147/23 148/17	<b>convenient [2]</b> 51/22 159/22	<b>cure [1]</b> 185/3	<b>dealing [10]</b> 2/16 4/14 39/20 43/9 63/10 83/14 109/15 137/7 138/22 140/14	
<b>considers [2]</b> 155/10 156/16	<b>conversations [1]</b> 59/1	<b>currently [1]</b> 105/25	<b>deals [2]</b> 1/13 40/19	
<b>consist [1]</b> 61/23	<b>convey [1]</b> 188/23	<b>cut [2]</b> 52/2 175/5	<b>dealt [2]</b> 125/7 132/5	
<b>consisted [1]</b> 116/14	<b>convincing [3]</b> 13/16 19/5 26/1	<b>cut-off [1]</b> 175/5		
<b>consistency [3]</b> 91/25 100/8 142/16	<b>coordinated [2]</b> 143/5 162/6	<b>CVST [1]</b> 97/5		
<b>consistent [8]</b> 36/24 85/5 85/8 86/17 93/18 94/10 101/14 142/10	<b>COPD [1]</b> 105/15	<b>cycle [4]</b> 65/6 65/10 151/21 151/25		
<b>consisting [2]</b> 14/11 24/19	<b>copied [1]</b> 173/1	<b>D</b>		
<b>Consortium [1]</b> 35/5	<b>cord [1]</b> 149/13	<b>daily [2]</b> 39/9 94/16		
<b>constantly [1]</b> 39/10	<b>core [4]</b> 68/18 103/16 116/24 124/17	<b>damage [3]</b> 162/22 162/23 163/1		
<b>consultancy [1]</b> 5/6	<b>corner [1]</b> 172/23	<b>Dame [21]</b> 33/3 40/14 45/17 66/25 72/6 73/4 114/7 114/9 114/11 114/17 116/5 122/25 124/22 127/9 160/3 183/1 183/3 185/23 188/12 188/13 190/11		
<b>consultant [1]</b> 102/24	<b>coronavirus [1]</b> 100/12	<b>darwin [1]</b> 60/6		
<b>consulted [4]</b> 102/23 125/20 147/9 150/5	<b>coroners [1]</b> 156/20	<b>DARWIN EU [1]</b> 60/6		
<b>contains [1]</b> 142/12	<b>coronial [4]</b> 71/15 71/21 71/22 72/8	<b>data [126]</b> 3/16 4/19 5/24 13/12 14/15 14/19 15/2 15/7 15/14 16/9 16/10 16/17 17/9		
<b>contents [1]</b> 2/14	<b>corporately [1]</b> 135/17			
<b>context [22]</b> 12/23 20/3 36/12 58/16 64/1 74/4 79/6 108/11 118/6 118/9 129/18 136/17 137/12 137/20 142/3 142/6 152/13 158/11 172/3 176/9 176/12 179/19	<b>correct [22]</b> 5/2 5/17 83/2 89/18 91/22 92/19 92/19 93/20 95/13 102/18 106/12 106/25 116/1 117/17 121/2 128/8 135/15 139/4 145/13 147/20 169/7 178/15			
<b>continental [1]</b> 73/25	<b>corrected [1]</b> 160/9			
<b>continuation [1]</b> 14/3	<b>cost [3]</b> 33/25 39/5 186/3			
<b>continue [8]</b> 13/23 15/5 52/23 60/15 61/20 62/3 182/3 182/4	<b>costs [1]</b> 126/15			
<b>continued [5]</b> 27/13	<b>could [66]</b> 1/6 1/20 1/23 8/11 15/1 21/9 21/22 36/25 39/20 41/24 42/9 42/15 43/8 53/9 54/13 54/24			



<b>D</b>	<b>deliberately [1]</b> 61/11	<b>determined [5]</b> 19/16	184/21 186/2 186/20	<b>discussion [2]</b> 125/3
<b>death [10]</b> 54/25 55/4	<b>delineate [2]</b> 8/11	37/20 53/10 88/14	186/22	145/16
66/2 75/4 87/11 87/13	174/18	167/23	<b>didn't [14]</b> 5/10 11/22	<b>discussions [2]</b>
94/15 110/5 156/14	<b>deliver [3]</b> 89/7	<b>determines [2]</b> 18/12	11/24 12/5 21/15	102/11 138/21
158/19	133/16 185/5	18/16	37/16 61/12 98/3	<b>disease [15]</b> 8/16
<b>deaths [13]</b> 71/23	<b>delivered [4]</b> 23/16	<b>determining [1]</b>	110/21 116/18 121/8	14/1 18/21 18/22
75/17 76/12 76/12	39/11 131/6 131/14	152/6	121/21 150/16 157/23	20/15 21/2 21/4 97/6
94/16 95/7 95/8 107/1	<b>delivery [4]</b> 34/1 53/3	<b>detract [1]</b> 157/21	<b>die [2]</b> 76/18 95/2	104/19 104/22 104/25
110/6 158/4 158/5	119/12 129/10	<b>detracted [1]</b> 31/4	<b>died [3]</b> 71/19 110/4	112/15 138/16 138/22
158/12 158/21	<b>demand [1]</b> 109/7	<b>develop [2]</b> 7/18 27/7	156/12	139/2
<b>debate [4]</b> 1/17 99/18	<b>demonstrate [3]</b>	<b>developed [4]</b> 27/22	<b>difference [12]</b> 10/2	<b>diseases [1]</b> 10/11
147/17 169/21	84/25 106/23 120/1	65/10 128/15 133/21	10/11 11/13 19/5 37/2	<b>disentangle [1]</b> 73/12
<b>debating [1]</b> 49/25	<b>demonstrated [1]</b>	<b>developing [2]</b> 19/12	58/22 59/16 59/17	<b>disorder [1]</b> 112/8
<b>debt [1]</b> 188/21	75/13	88/2	121/13 144/21 165/8	<b>disorders [1]</b> 106/2
<b>decades [2]</b> 128/19	<b>demonstrating [1]</b>	<b>development [7]</b>	184/10	<b>disparate [1]</b> 53/6
128/23	96/20	88/9 127/21 131/20	<b>differences [2]</b> 17/8	<b>disseminated [1]</b>
<b>December [4]</b> 88/12	<b>Denmark [2]</b> 169/9	131/22 131/24 185/24	63/1	103/4
114/22 120/21 159/3	169/13	185/25	<b>different [48]</b> 12/4	<b>dissemination [1]</b>
<b>December 2020 [3]</b>	<b>departed [1]</b> 31/5	<b>develops [1]</b> 22/17	12/20 12/20 14/2	80/16
88/12 120/21 159/3	<b>Department [6]</b> 5/20	<b>device [2]</b> 124/3	15/21 17/15 20/2 20/8	<b>distributes [1]</b> 142/3
<b>decide [1]</b> 135/12	31/23 115/6 126/23	136/5	21/21 30/12 31/1	<b>diverse [1]</b> 48/4
<b>decided [3]</b> 54/24	143/7 184/24	<b>devices [3]</b> 117/2	44/22 44/22 46/22	<b>diversity [19]</b> 46/6
122/5 148/19	<b>departure [3]</b> 36/3	124/6 127/12	46/25 47/11 47/14	46/16 46/17 46/19
<b>deciding [3]</b> 9/12	36/6 58/16	<b>devolved [3]</b> 35/6	47/14 48/10 49/8	47/8 48/8 49/25 50/8
33/24 75/18	<b>depending [1]</b>	87/4 119/23	54/10 57/14 59/6	51/17 107/23 144/4
<b>decision [15]</b> 88/22	173/10	<b>dexamethasone [1]</b>	59/12 68/13 75/20	144/8 144/9 144/18
118/4 118/7 118/14	<b>deployment [2]</b>	180/15	75/25 77/22 90/20	144/19 144/23 149/7
121/14 137/25 139/6	119/8 119/12	<b>DHSC [10]</b> 31/21	97/15 98/7 126/17	182/15 182/19
140/4 140/5 141/21	<b>depression [1]</b>	72/20 77/13 117/16	131/9 131/15 135/18	<b>division [3]</b> 115/6
148/7 171/15 177/22	104/25	119/6 127/4 162/2	137/9 137/24 138/24	115/9 115/18
185/20 186/4	<b>depth [1]</b> 33/21	169/25 172/13 173/2	141/11 143/3 143/4	<b>do [121]</b> 1/14 6/25
<b>decisions [21]</b> 64/14	<b>derived [1]</b> 35/20	<b>diagnosis [1]</b> 4/25	143/4 147/15 155/8	12/9 18/23 18/24
67/1 117/22 118/1	<b>describe [4]</b> 65/6	<b>diagram [1]</b> 176/6	163/21 179/18 184/7	19/21 20/4 20/13
118/12 118/18 119/14	92/21 139/16 139/19	<b>dialogue [4]</b> 146/21	184/23	25/24 27/1 28/7 30/6
119/16 119/20 120/7	<b>described [6]</b> 72/10	147/5 147/6 184/9	<b>difficult [13]</b> 20/20	31/5 34/19 35/10
121/8 121/10 121/18	90/12 99/25 145/8	<b>did [95]</b> 3/15 3/18	20/21 21/25 25/8	38/14 41/24 42/1
121/22 134/14 135/10	183/11 188/18	3/22 3/25 5/6 13/7	25/21 26/5 28/10 47/6	43/20 46/16 47/22
166/11 166/14 176/11	<b>description [1]</b> 31/14	36/1 36/7 36/10 37/22	73/12 81/24 82/5	49/3 51/7 51/14 53/11
181/2 186/11	<b>descriptions [1]</b> 24/1	38/4 39/13 41/3 42/23	109/16 174/18	55/3 55/21 55/22
<b>declaring [1]</b> 125/1	<b>design [2]</b> 5/8 86/10	47/13 53/7 53/13	<b>diligence [2]</b> 32/12	55/23 55/25 58/10
<b>declined [1]</b> 87/7	<b>designed [2]</b> 111/13	56/23 60/21 63/13	135/2	58/20 59/6 60/17 62/5
<b>dedicated [1]</b> 155/25	151/13	64/18 64/21 65/3 65/7	<b>direct [4]</b> 58/19 58/21	62/12 62/19 62/21
<b>deemed [1]</b> 165/11	<b>desirable [1]</b> 50/12	73/9 75/14 81/15	121/20 124/11	62/23 63/20 64/23
<b>deepest [1]</b> 186/7	<b>desired [1]</b> 9/9	81/16 81/19 86/24	<b>directed [1]</b> 62/16	65/7 65/25 67/25
<b>defined [1]</b> 65/8	<b>Despite [1]</b> 42/18	87/5 89/2 89/19 95/14	<b>directions [1]</b> 119/25	69/18 69/23 70/17
<b>defines [1]</b> 24/13	<b>detail [13]</b> 1/12 14/8	95/23 97/19 97/22	<b>directive [2]</b> 35/21	70/21 71/3 71/21
<b>definition [1]</b> 102/25	34/12 42/7 42/22	100/24 101/2 102/7	120/17	72/15 75/23 77/8 77/9
<b>definitive [2]</b> 182/5	42/24 45/16 73/4 77/2	102/14 103/16 106/16	<b>directly [5]</b> 20/15	77/21 78/8 78/15
182/6	84/8 115/17 132/2	107/7 109/19 118/9	20/16 111/6 126/7	80/12 83/14 83/22
<b>degree [24]</b> 2/17	143/16	119/8 119/13 120/5	134/11	85/25 86/6 93/25
17/19 20/23 21/11	<b>detailed [2]</b> 33/9	121/5 122/3 125/19	<b>director [1]</b> 115/8	94/18 95/21 100/10
39/14 40/1 46/7 46/8	143/11	132/7 132/21 135/4	<b>directors [2]</b> 170/20	105/7 105/23 105/24
46/16 46/18 79/24	<b>details [3]</b> 153/6	146/3 146/17 149/6	173/13	108/8 113/15 116/20
91/12 103/22 104/14	153/8 154/16	150/20 153/11 153/14	<b>disappear [1]</b> 27/2	119/22 124/7 125/12
123/22 136/6 138/9	<b>detect [3]</b> 28/9 28/10	157/2 157/6 160/18	<b>discipline [1]</b> 4/6	126/11 127/3 127/25
138/9 139/2 144/7	71/1	162/2 165/19 166/21	<b>disclose [1]</b> 139/20	128/8 129/6 129/7
144/9 144/19 146/5	<b>detected [3]</b> 41/17	167/13 170/12 171/2	<b>discourage [1]</b> 78/11	129/21 129/23 133/9
175/5	72/1 73/22	172/13 172/13 172/13	<b>discrete [4]</b> 68/17	137/12 138/12 138/12
<b>degrees [5]</b> 21/9 22/9	<b>detection [3]</b> 67/17	172/16 172/17 174/3	108/12 116/22 161/1	140/3 140/5 140/8
22/9 83/8 144/6	68/2 153/18	174/5 174/8 174/10	<b>discuss [3]</b> 150/7	140/9 144/4 144/13
<b>delayed [1]</b> 28/11	<b>determinative [1]</b>	176/14 177/15 180/4	159/4 176/24	144/14 152/1 155/18
<b>delaying [1]</b> 38/23	81/21	180/4 180/21 181/9	<b>discussed [1]</b> 101/3	156/15 156/21 156/24
<b>delegated [1]</b> 134/15	<b>determine [4]</b> 82/5	181/13 181/24 182/4	<b>discussing [2]</b> 16/10	158/24 163/15 163/18
	84/13 102/15 167/11	183/17 183/25 184/16	62/14	163/24 164/6 164/9



<b>D</b>	188/13	134/24 142/8 153/11 155/22 174/6 181/25 184/1 184/17	113/5 117/7 127/14 132/14	<b>emerged [3]</b> 87/6 93/25 100/25
<b>do...</b> [16] 164/18 171/5 171/11 173/23 174/1 174/1 174/21 178/2 179/3 182/8 182/12 183/21 183/25 184/4 186/18 187/2	<b>done [38]</b> 17/13 21/2 22/14 27/5 27/16 28/1 34/22 34/22 43/25 44/7 54/5 55/15 56/15 56/16 56/24 62/6 65/1 66/23 68/4 78/20 80/10 82/10 113/10 113/22 122/19 126/15 130/6 138/1 149/20 157/9 157/11 163/10 164/19 168/1 175/23 178/16 184/5 188/7	<b>dwarfed [1]</b> 144/23 <b>dying [1]</b> 94/19	<b>effects [49]</b> 7/6 10/12 14/10 16/21 23/24 24/3 24/5 24/7 26/21 27/14 28/5 28/10 28/11 29/12 40/6 40/20 41/13 44/10 47/16 53/9 56/3 62/7 69/7 70/2 70/6 71/19 73/12 75/9 75/22 79/18 82/11 84/23 85/15 88/10 90/12 90/23 90/25 91/2 96/7 106/7 106/14 108/23 116/12 135/8 142/14 151/6 154/3 165/24 166/4	<b>emergence [1]</b> 99/14 <b>emergencies [1]</b> 35/24 <b>emergency [2]</b> 35/25 181/15 <b>emerging [5]</b> 69/20 78/6 86/3 90/9 94/2 <b>emphasise [2]</b> 9/22 90/24 <b>emphasised [1]</b> 184/13 <b>emphasises [1]</b> 35/2 <b>empirical [1]</b> 76/11 <b>emptive [2]</b> 147/5 147/6 <b>enable [1]</b> 60/7 <b>enabled [2]</b> 55/15 109/10 <b>enables [1]</b> 135/12 <b>enabling [1]</b> 175/25 <b>encephalomyelitis [1]</b> 103/4 <b>encourage [2]</b> 45/9 48/21 <b>encouraged [1]</b> 150/2 <b>end [8]</b> 6/25 36/4 36/20 38/25 44/16 58/17 88/12 174/8 <b>endeavoured [1]</b> 51/14 <b>endless [1]</b> 124/25 <b>endorse [1]</b> 182/12 <b>endpoint [1]</b> 122/18 <b>engage [4]</b> 119/23 131/20 166/22 173/23 <b>engaged [2]</b> 162/20 166/21 <b>England [9]</b> 3/21 35/3 54/12 58/6 77/14 120/19 162/2 162/6 169/25 <b>enormous [6]</b> 32/18 45/25 64/9 66/16 67/12 110/3 <b>enormously [1]</b> 53/23 <b>enough [3]</b> 19/1 98/3 163/10 <b>enquiry [1]</b> 103/23 <b>ensure [16]</b> 18/20 48/20 117/10 117/13 119/5 119/23 121/11 122/10 122/10 122/15 135/24 142/8 161/18 164/19 179/4 187/9 <b>ensuring [8]</b> 9/4 61/15 62/6 64/2 78/1 117/6 127/12 187/21 <b>enterprise [1]</b> 18/2 <b>entire [1]</b> 22/20 <b>entirely [4]</b> 14/24
<b>doctor [2]</b> 4/22 44/15 <b>doctors [1]</b> 63/4 <b>document [5]</b> 124/23 141/17 154/6 158/10 159/11 <b>documentation [1]</b> 64/20 <b>documents [4]</b> 2/8 45/18 77/6 146/12 <b>does [56]</b> 6/14 7/4 7/5 7/21 8/12 10/3 16/16 20/15 23/23 28/24 29/10 29/15 29/23 30/24 32/10 32/20 33/2 43/17 43/18 46/4 49/23 53/6 59/21 61/14 61/18 72/21 84/16 84/23 85/11 86/19 87/25 88/20 90/2 93/12 110/8 117/15 117/20 120/1 123/22 125/4 128/3 128/19 132/12 134/9 134/11 134/22 134/23 135/5 135/9 139/7 142/15 142/22 150/6 151/9 154/22 156/15 <b>does it [16]</b> 6/14 7/4 7/5 10/3 29/10 29/23 30/24 32/10 46/4 61/14 72/21 132/12 134/9 134/11 134/22 139/7 <b>doesn't [10]</b> 7/12 20/13 29/22 65/16 91/7 103/11 104/8 104/12 123/2 129/25 <b>doing [11]</b> 32/5 40/10 40/11 40/13 40/16 43/24 47/23 68/2 74/1 155/25 164/17 <b>domain [8]</b> 42/25 76/14 82/13 123/20 161/8 162/10 170/14 179/9 <b>domains [1]</b> 139/10 <b>don't [29]</b> 11/19 15/3 18/23 26/11 41/23 64/8 70/11 70/12 72/4 72/5 84/7 93/6 95/8 99/21 101/15 105/21 111/11 113/15 116/10 124/9 130/17 152/1 152/6 158/18 165/8 174/15 176/4 180/25	<b>dosage [3]</b> 34/14 88/14 88/23 <b>dose [14]</b> 7/10 7/11 8/14 8/18 9/5 9/6 9/7 9/12 88/16 89/7 95/20 130/1 176/23 178/7 <b>doses [15]</b> 29/15 29/21 29/22 29/23 29/25 89/1 89/4 96/12 100/23 130/9 130/16 130/18 130/18 130/24 130/25 <b>dossier [1]</b> 46/1 <b>double [6]</b> 12/7 12/8 13/4 13/5 17/10 89/7 <b>double-blind [2]</b> 13/4 13/5 <b>doubt [3]</b> 20/6 40/3 147/10 <b>down [5]</b> 9/5 9/7 97/21 116/1 159/11 <b>download [1]</b> 111/4 <b>downside [2]</b> 136/13 164/21 <b>Dr [5]</b> 5/22 5/22 5/22 5/22 183/10 <b>Dr Annika [1]</b> 5/22 <b>Dr Edward [1]</b> 5/22 <b>Dr Li [1]</b> 5/22 <b>Dr Salman Waqar [1]</b> 183/10 <b>Dr Xie [1]</b> 5/22 <b>drafted [1]</b> 120/16 <b>draw [5]</b> 65/8 78/15 84/4 100/10 103/18 <b>drawing [1]</b> 80/16 <b>drawn [4]</b> 52/12 92/10 120/16 167/3 <b>drug [13]</b> 2/24 8/24 20/13 20/14 22/20 22/25 24/4 32/17 67/25 153/5 155/9 179/10 179/12 <b>drugs [7]</b> 8/15 10/19 12/20 77/22 125/16 153/7 180/15 <b>due [5]</b> 77/1 86/2 94/9 135/4 149/11 <b>during [17]</b> 3/17 5/4 37/23 46/5 47/14 63/14 83/4 90/7 112/3	<b>each [27]</b> 12/11 19/8 24/13 28/24 29/6 30/9 34/4 37/9 85/7 91/11 91/11 91/11 92/8 92/13 103/11 105/16 120/7 129/22 130/2 130/9 130/16 144/22 144/22 149/21 154/16 157/21 167/2 <b>earlier [14]</b> 61/1 74/2 79/6 90/10 97/17 97/23 98/13 107/7 107/12 130/10 135/23 146/8 158/14 160/3 <b>early [6]</b> 90/7 122/9 132/4 166/9 167/12 171/7 <b>ease [1]</b> 92/13 <b>eased [1]</b> 116/3 <b>easier [3]</b> 79/12 163/17 163/21 <b>easily [2]</b> 27/25 59/20 <b>Easter [2]</b> 167/12 168/14 <b>easy [4]</b> 28/9 71/3 71/8 163/12 <b>ecological [3]</b> 65/19 75/15 151/25 <b>educate [1]</b> 127/18 <b>education [1]</b> 164/20 <b>Edward [1]</b> 5/22 <b>effect [41]</b> 8/19 8/24 8/25 9/9 9/13 14/21 14/24 20/15 22/20 23/21 24/10 24/18 24/24 26/13 37/25 38/1 48/19 64/14 65/13 72/7 79/7 81/23 81/23 82/1 82/6 82/17 86/17 88/21 89/4 90/4 94/20 99/2 106/17 106/18 108/16 121/9 121/20 130/4 161/6 164/23 182/4 <b>effective [14]</b> 13/19 14/5 19/6 19/13 21/13 23/23 40/5 69/25 70/3 70/4 76/21 85/1 87/13 182/7 <b>effectively [2]</b> 35/23 41/4 <b>effectiveness [22]</b> 3/19 3/20 19/11 20/23 21/11 21/17 28/21 29/9 33/24 84/23 85/6 85/7 85/12 85/23 86/12 86/21 87/2 87/6	<b>efficient [2]</b> 58/7 134/20 <b>efficiently [1]</b> 58/12 <b>effort [2]</b> 48/9 161/18 <b>efforts [5]</b> 48/3 48/8 163/20 185/1 186/22 <b>either [7]</b> 11/20 40/5 54/11 62/22 162/25 178/11 178/15 <b>elaborate [1]</b> 39/20 <b>elapse [1]</b> 178/2 <b>elapsed [2]</b> 82/4 175/23 <b>elderly [4]</b> 50/12 97/20 97/24 168/19 <b>electronic [10]</b> 54/1 54/8 63/6 63/8 64/13 65/11 65/14 85/21 163/22 164/10 <b>elegantly [1]</b> 41/20 <b>element [3]</b> 4/12 20/14 111/11 <b>elements [1]</b> 62/10 <b>eliminating [1]</b> 11/16 <b>else [4]</b> 14/19 16/8 168/22 170/10 <b>elsewhere [9]</b> 10/24 16/23 18/7 32/23 88/13 126/22 141/10 158/11 177/2 <b>EMA [5]</b> 60/6 84/5 107/14 115/21 121/19 <b>email [1]</b> 179/12 <b>embedded [1]</b> 5/5 <b>emerge [2]</b> 53/9 99/16	

<b>E</b>	58/19 59/17 68/14 72/22 97/18 102/22 115/21 120/12 120/23 120/23 121/8 121/19 166/9 169/8 <b>Europeans' [1]</b> 37/6 <b>evaluate [3]</b> 67/20 68/1 122/19 <b>evaluating [2]</b> 162/16 187/18 <b>evaluation [1]</b> 168/5 <b>evaluative [1]</b> 68/9 <b>Evans [37]</b> 1/5 1/8 1/23 1/25 2/5 2/17 6/8 41/19 43/7 44/13 51/9 51/15 52/9 60/13 61/20 67/17 68/17 74/3 76/1 77/1 78/17 80/25 81/9 83/22 84/9 106/8 107/8 107/17 108/6 108/9 113/13 130/10 143/15 150/25 152/20 159/12 190/3 <b>Evans' [4]</b> 1/13 81/13 84/1 95/5 <b>even [29]</b> 10/13 12/2 13/10 21/18 24/22 25/4 25/8 27/7 27/9 38/12 41/17 44/3 44/6 47/4 51/12 60/19 63/2 69/13 84/21 86/18 89/22 93/6 93/9 99/10 104/17 105/21 112/17 122/5 160/14 <b>event [9]</b> 67/24 92/22 101/20 120/13 131/24 140/11 154/21 163/14 165/3 <b>events [15]</b> 24/2 42/13 51/3 51/10 56/2 59/6 65/8 67/20 72/18 91/9 141/10 152/12 153/25 154/3 165/16 <b>eventually [1]</b> 44/16 <b>eventuating [1]</b> 82/1 <b>ever [6]</b> 16/7 25/17 26/14 42/8 127/3 151/2 <b>every [21]</b> 11/6 19/18 24/25 30/7 30/10 33/8 40/8 82/15 97/18 121/14 124/2 125/1 125/3 129/24 130/13 130/19 155/23 156/2 157/11 186/23 188/23 <b>everybody [4]</b> 39/24 40/15 168/22 170/10 <b>everyone [5]</b> 144/11 153/15 164/20 187/2 187/9 <b>everything [4]</b> 62/6 65/16 109/13 141/8 <b>evidence [91]</b> 6/5 13/16 15/1 19/5 26/1	30/6 37/10 42/18 43/2 56/18 59/24 71/9 76/3 76/3 76/6 76/15 79/22 81/13 82/15 83/8 83/12 84/19 84/24 85/3 85/5 85/11 87/25 88/21 89/6 89/11 89/25 90/2 90/3 91/13 91/23 92/2 92/15 93/9 95/6 95/19 96/5 96/19 96/23 97/4 97/8 98/3 98/20 99/5 100/2 100/6 101/7 101/10 102/5 103/3 103/6 103/9 103/13 103/25 104/3 104/8 104/12 104/12 105/9 105/25 106/3 109/7 109/22 114/14 114/24 116/13 116/17 117/23 118/6 133/18 136/8 137/24 139/14 143/14 145/23 159/10 163/6 167/18 168/5 168/7 177/14 178/6 179/7 179/20 180/18 182/1 188/14 <b>evident [3]</b> 2/9 87/20 153/4 <b>Evusheld [5]</b> 180/13 180/18 180/19 180/22 181/6 <b>exactly [10]</b> 11/14 17/13 30/13 45/11 45/11 124/8 147/2 147/23 147/24 147/25 <b>examination [1]</b> 156/19 <b>examined [3]</b> 20/9 88/20 178/17 <b>examining [2]</b> 22/15 167/1 <b>example [20]</b> 14/20 17/18 19/17 49/20 58/2 60/5 72/24 80/1 80/4 95/20 98/1 105/15 113/8 121/19 128/14 128/25 136/23 154/5 155/17 165/25 <b>examples [3]</b> 60/4 62/24 164/13 <b>exceeds [1]</b> 84/15 <b>excess [5]</b> 25/24 65/13 75/4 99/10 107/1 <b>exchange [1]</b> 133/9 <b>exclude [1]</b> 42/2 <b>excluded [6]</b> 50/16 86/1 86/10 86/19 86/22 113/6 <b>exclusive [1]</b> 120/24 <b>exclusively [4]</b> 13/2 17/4 40/12 92/7 <b>execution [1]</b> 60/8 <b>executive [5]</b> 115/2	117/16 118/16 119/18 134/13 <b>exercise [3]</b> 90/14 90/16 118/21 <b>exigencias [1]</b> 77/1 <b>exist [2]</b> 17/15 36/6 <b>existed [1]</b> 36/3 <b>existence [5]</b> 14/15 25/18 37/13 111/17 164/7 <b>existential [1]</b> 39/25 <b>existing [4]</b> 27/22 52/13 88/6 111/17 <b>expect [5]</b> 8/25 9/4 112/16 139/13 174/1 <b>expectation [1]</b> 157/11 <b>expected [1]</b> 158/12 <b>expectedness [1]</b> 151/19 <b>expedited [2]</b> 38/17 39/13 <b>expenditure [1]</b> 126/19 <b>experience [8]</b> 4/24 15/18 30/3 42/14 44/23 109/18 115/10 128/19 <b>experienced [2]</b> 15/12 176/21 <b>expert [25]</b> 2/5 3/19 3/20 4/2 4/6 29/19 30/3 33/6 33/13 102/7 116/13 118/24 123/10 134/22 136/9 137/23 139/25 147/10 151/13 159/2 167/4 167/6 167/8 171/21 177/25 <b>expertise [8]</b> 1/22 33/16 33/16 33/20 33/22 59/25 60/1 80/21 <b>experts [3]</b> 2/14 33/18 124/4 <b>explain [4]</b> 26/3 73/20 168/17 184/19 <b>explained [2]</b> 41/20 113/23 <b>explanation [1]</b> 26/4 <b>explore [1]</b> 22/19 <b>exposed [1]</b> 57/6 <b>exposure [1]</b> 57/4 <b>express [7]</b> 39/25 66/8 68/20 81/24 84/3 110/3 160/12 <b>expressed [8]</b> 21/10 21/10 40/23 71/14 75/3 91/18 107/1 178/10 <b>expressing [1]</b> 41/14 <b>extend [3]</b> 22/23 43/17 43/18 <b>extended [1]</b> 178/7 <b>extending [1]</b> 88/14	<b>extends [1]</b> 110/15 <b>extensive [3]</b> 123/24 123/25 179/7 <b>extent [3]</b> 43/14 116/4 136/12 <b>externally [1]</b> 27/22 <b>extol [2]</b> 56/20 78/22 <b>extols [1]</b> 61/21 <b>extra [2]</b> 34/21 175/23 <b>extraordinary [4]</b> 16/19 54/22 173/5 188/15 <b>extremely [24]</b> 16/15 24/12 24/17 24/18 24/21 46/21 56/17 57/5 81/24 82/5 86/11 92/24 98/25 100/20 100/22 101/24 103/5 110/9 119/13 136/19 151/3 151/4 171/9 176/17 <b>eye [1]</b> 151/5
			<b>F</b>	
			<b>face [2]</b> 99/25 182/10 <b>facilitate [1]</b> 102/25 <b>facilities [1]</b> 129/15 <b>facility [1]</b> 159/9 <b>fact [53]</b> 3/7 4/13 5/3 7/22 11/24 16/23 16/24 17/17 28/17 31/12 32/20 35/20 38/9 49/13 52/16 56/6 57/19 65/21 73/24 86/3 89/6 91/16 93/12 97/14 98/21 99/9 101/1 102/9 104/7 105/6 106/22 115/14 118/7 118/16 120/1 120/20 120/22 126/21 127/3 134/10 144/5 146/24 147/17 150/6 150/8 154/12 154/20 163/19 164/12 177/11 178/6 186/2 188/1 <b>factor [2]</b> 133/10 184/25 <b>factories [1]</b> 133/14 <b>factors [2]</b> 26/2 27/20 <b>facts [1]</b> 175/20 <b>factual [1]</b> 176/12 <b>failing [1]</b> 183/12 <b>failure [3]</b> 94/8 94/9 105/1 <b>fair [3]</b> 82/8 82/9 82/25 <b>fall [2]</b> 33/13 104/24 <b>familiar [1]</b> 40/11 <b>families [1]</b> 71/20 <b>family [1]</b> 77/15 <b>far [10]</b> 26/15 38/4 43/17 47/17 75/12	

<b>F</b>	66/7 78/2 79/20 106/179/20	110/4 110/6 113/24 124/4 159/15 177/20 185/16 189/6	128/22 159/20	62/22 63/12 70/25 76/9 77/12 79/16 79/17 88/16 89/15 89/22 110/22 112/19 129/24 154/8 155/21 170/1 170/7 176/10 177/22
<b>far... [5]</b> 76/4 97/10 126/1 166/11 185/22	<b>financial [4]</b> 119/17 124/11 125/7 186/12	<b>follows [1]</b> 76/16	<b>fundamental [1]</b> 129/10	<b>Getting [1]</b> 184/22
<b>farther [1]</b> 89/5	<b>find [9]</b> 21/3 25/25 76/7 76/16 101/14 109/11 139/14 150/14 157/4	<b>Food [1]</b> 32/17	<b>fundamentally [1]</b> 57/14	<b>gets [2]</b> 16/10 52/1
<b>fast [1]</b> 136/15	<b>finds [1]</b> 126/6	<b>forensic [2]</b> 1/17 40/19	<b>funded [3]</b> 5/11 74/6 126/8	<b>getting [9]</b> 11/23 11/23 15/17 22/8 87/14 94/23 100/11 109/19 176/2
<b>fatal [8]</b> 96/3 96/6 100/1 156/8 156/9 157/2 157/12 157/21	<b>finite [1]</b> 33/15	<b>forgive [1]</b> 152/1	<b>funding [9]</b> 32/18 74/4 74/7 74/8 74/11 74/17 107/16 126/22 126/23	<b>give [29]</b> 1/23 3/18 23/20 29/14 47/13 53/17 56/17 72/24 77/22 90/13 102/9 110/22 125/24 126/4 134/10 135/10 136/23 138/25 139/25 140/1 140/7 141/12 141/13 151/2 153/6 158/25 159/5 161/22 176/12
<b>fatalities [8]</b> 71/23 75/8 93/3 93/8 93/10 96/16 157/19 157/25	<b>first [33]</b> 1/13 2/17 6/10 20/24 22/21 55/2 63/2 65/3 68/3 69/16 81/10 83/14 87/19 88/8 88/16 93/4 97/20 98/6 108/17 125/12 142/5 154/8 166/7 166/8 166/24 168/19 171/8 173/17 176/22 177/24 183/15 185/20 188/15	<b>form [6]</b> 5/13 9/22 59/18 106/24 112/25 136/1	<b>future [2]</b> 21/6 59/9	<b>given [39]</b> 8/1 8/7 13/8 23/5 37/17 41/11 45/6 51/2 51/9 59/21 77/4 80/5 80/15 81/22 81/22 82/2 82/5 94/1 98/7 98/8 109/8 109/24 112/18 121/5 135/21 136/14 136/18 137/13 148/4 158/11 168/19 171/18 174/13 178/5 178/19 179/5 179/7 182/2 185/2
<b>fatality [3]</b> 92/24 92/25 158/16	<b>firstly [4]</b> 2/16 63/10 89/15 161/4	<b>format [1]</b> 154/14	<b>G</b>	<b>gives [5]</b> 81/22 123/8 134/8 134/9 157/19
<b>fatigue [1]</b> 106/11	<b>five [2]</b> 15/11 32/14	<b>former [1]</b> 89/25	<b>gains [1]</b> 66/18	<b>giving [10]</b> 11/1 12/9 33/10 53/25 88/17 114/15 126/24 137/2 179/23 180/23
<b>favourable [2]</b> 84/5 136/19	<b>flag [1]</b> 67/25	<b>forms [2]</b> 26/19 137/24	<b>gaps [1]</b> 188/8	<b>global [6]</b> 3/11 76/20 128/10 128/17 173/21 174/2
<b>FDA [5]</b> 32/16 59/18 60/5 84/5 107/14	<b>flagged [1]</b> 81/12	<b>formulate [1]</b> 69/24	<b>gave [7]</b> 66/16 92/22 97/16 175/3 176/5 180/12 182/5	<b>globally [2]</b> 76/8 76/25
<b>feature [1]</b> 111/4	<b>flagging [1]</b> 68/8	<b>forth [1]</b> 45/9	<b>gene [2]</b> 69/4 162/23	<b>go [23]</b> 6/23 16/24 27/8 37/18 45/22 48/4 59/5 103/16 104/4 104/16 104/23 105/16 109/11 116/18 145/11 145/15 154/8 154/15 155/18 156/21 157/17 173/15 184/8
<b>February [10]</b> 132/21 165/19 166/8 166/24 167/11 167/22 171/8 178/1 178/3 183/16	<b>flexibility [1]</b> 188/18	<b>forward [3]</b> 63/16 103/1 110/25	<b>general [44]</b> 4/10 4/22 5/7 8/7 9/16 12/17 16/6 20/3 27/1 43/9 43/14 43/25 47/7 47/12 54/3 60/13 60/21 61/18 63/4 63/5 63/7 67/21 75/10 81/14 84/3 87/1 112/6 112/17 115/11 116/6 117/5 139/5 139/19 140/3 152/3 153/25 157/12 160/5 167/20 168/5 169/2 169/3 171/24 178/25	<b>goal [3]</b> 121/10 122/10 128/11
<b>February 2021 [3]</b> 132/21 165/19 166/8	<b>flood [1]</b> 23/6	<b>forward-looking [1]</b> 110/25	<b>generality [5]</b> 93/19 116/19 157/2 157/7 157/15	<b>going [24]</b> 6/8 6/11 8/13 14/4 14/8 39/5 42/24 43/6 52/20 70/25 89/15 92/7 103/1 108/24 110/20 115/4 116/22 124/10 130/16 138/24 161/17 172/4 183/4 185/19
<b>February 2022 [1]</b> 183/16	<b>flow [2]</b> 59/10 126/10	<b>forwarded [1]</b> 108/15	<b>generally [30]</b> 9/1 13/12 14/7 15/7 15/12 19/16 21/8 24/17 24/22 25/4 26/14 27/3 27/4 29/23 44/22 48/14 60/17 62/14 70/4 74/6 78/21 88/23 90/3 98/6 128/10 133/19 140/3 172/4 177/6 179/22	
<b>Federation [2]</b> 111/25 183/7	<b>flu [4]</b> 21/17 26/11 106/11 153/22	<b>forwarded-looking [1]</b> 108/15	<b>generated [1]</b> 85/21	
<b>fee [2]</b> 39/2 126/11	<b>flu-like [3]</b> 26/11 106/11 153/22	<b>found [5]</b> 72/8 83/8 105/18 108/19 155/7	<b>generating [1]</b> 59/23	
<b>feedback [1]</b> 184/5	<b>fluent [1]</b> 58/25	<b>foundations [1]</b> 120/25	<b>generic [1]</b> 113/2	
<b>fees [1]</b> 126/20	<b>focus [21]</b> 6/9 7/4 7/5 8/12 8/13 10/3 44/25 70/14 78/16 78/21 78/21 81/2 83/3 91/9 92/7 107/22 116/22 122/15 136/3 182/18 185/19	<b>four [10]</b> 52/20 61/21 62/5 62/10 78/16 78/16 80/2 96/18 100/18 151/12	<b>genetic [6]</b> 69/5 69/6 83/23 83/25 162/23 163/2	
<b>feet [1]</b> 46/2	<b>focused [4]</b> 83/3 125/14 125/17 129/2	<b>fragmentation [1]</b> 79/25	<b>Germany [1]</b> 143/25	
<b>fell [2]</b> 38/25 39/11	<b>focuses [1]</b> 28/20	<b>fragmented [1]</b> 80/17	<b>get [36]</b> 1/15 6/10 10/5 10/7 11/19 15/16 19/1 19/2 19/3 22/5 22/5 22/6 22/6 25/6 34/23 48/13 55/10	
<b>felt [3]</b> 19/22 95/16 119/13	<b>focusing [7]</b> 8/4 8/10 12/24 52/24 97/19 116/15 116/19	<b>framework [3]</b> 121/4 121/5 122/8		
<b>female [1]</b> 106/24	<b>follow [12]</b> 30/24 46/4 49/23 116/20 132/12 155/20 156/17 157/3 160/23 187/8 187/16 187/17	<b>frameworks [3]</b> 127/23 129/13 182/11		
<b>FEMHO [3]</b> 111/25 112/1 184/13	<b>follow-up [3]</b> 155/20 187/16 187/17	<b>France [2]</b> 71/10 97/25		
<b>fertility [1]</b> 106/24	<b>followed [11]</b> 27/13 40/22 63/17 63/23 151/23 155/21 156/5 157/13 159/15 160/9 188/13	<b>frequency [2]</b> 51/10 60/16		
<b>fever [3]</b> 22/7 22/8 106/11	<b>following [16]</b> 27/9 36/6 58/16 82/12 93/2 93/15 99/10 99/11	<b>frequent [3]</b> 28/9 70/11 176/9		
<b>few [12]</b> 7/18 21/2 27/4 29/21 29/21 38/13 62/19 83/14 85/2 93/3 109/7 183/3 79/9		<b>frequently [2]</b> 162/14 162/15		
<b>fewer [3]</b> 24/16 70/16 79/9		<b>friends [1]</b> 77/14		
<b>fibromyalgia [1]</b> 104/25		<b>full [8]</b> 1/24 2/1 34/23 88/17 114/15 118/21 145/17 152/1		
<b>field [3]</b> 29/8 29/20 115/10		<b>fully [2]</b> 66/24 122/11		
<b>fiercely [1]</b> 31/13		<b>function [3]</b> 129/3 142/23 153/19		
<b>fight [1]</b> 20/5		<b>functionality [1]</b> 183/16		
<b>fighting [1]</b> 20/13		<b>functions [9]</b> 32/5 116/4 117/14 118/4 123/16 127/4 127/11		
<b>figure [1]</b> 77/2				
<b>figures [4]</b> 11/8 11/17 144/22 157/19				
<b>final [10]</b> 60/25 77/2 118/7 140/15 140/16 141/17 145/10 145/23 167/23 168/2				
<b>finally [7]</b> 37/8 50/6				

<b>G</b>	156/16 156/16 161/18 163/24 186/22 <b>greater [10]</b> 39/19 49/7 64/13 69/14 94/19 99/6 137/2 182/15 182/21 184/9 <b>greatest [1]</b> 39/23 <b>greatly [7]</b> 2/13 5/19 33/4 42/16 64/7 84/17 90/15 <b>grounds [1]</b> 149/25 <b>group [18]</b> 3/20 4/2 9/17 13/17 14/18 19/2 25/24 33/15 33/19 33/19 76/17 102/8 109/23 113/9 167/5 167/6 174/15 177/25 <b>groups [24]</b> 11/5 11/6 34/15 46/11 46/21 47/11 49/9 50/19 51/19 71/14 79/19 108/11 109/22 116/24 123/10 134/22 147/10 159/2 167/8 172/16 182/16 183/13 185/15 185/15 <b>growing [4]</b> 164/18 167/18 168/5 168/7 <b>guidance [2]</b> 64/20 146/24 <b>guide [1]</b> 176/11 <b>guidelines [2]</b> 35/4 153/10 <b>Guillain [4]</b> 98/14 98/16 99/14 99/16 <b>Guillain-Barré [4]</b> 98/14 98/16 99/14 99/16 <b>guts [2]</b> 126/3 176/20	181/19 181/21 <b>hadn't [1]</b> 168/25 <b>haematological [1]</b> 171/16 <b>haematologists [2]</b> 102/24 172/11 <b>haemorrhage [1]</b> 150/13 <b>half [7]</b> 30/11 30/12 96/13 108/21 153/16 159/12 164/16 <b>halted [1]</b> 149/11 <b>halting [1]</b> 101/4 <b>Hancock [2]</b> 172/20 173/7 <b>hand [3]</b> 169/22 172/23 179/17 <b>handed [1]</b> 131/7 <b>handful [5]</b> 37/14 42/4 42/9 68/17 169/12 <b>hands [1]</b> 166/16 <b>happen [4]</b> 71/21 110/9 160/21 160/22 <b>happened [6]</b> 63/12 121/18 156/22 157/4 158/17 167/2 <b>happening [3]</b> 9/3 9/14 62/1 <b>happens [6]</b> 4/1 16/13 36/8 62/2 149/19 149/20 <b>hard [6]</b> 2/9 93/3 134/24 134/24 136/15 188/17 <b>harder [1]</b> 177/11 <b>harm [9]</b> 14/23 22/1 22/2 22/4 95/1 95/2 124/7 125/13 163/1 <b>harmonisation [3]</b> 127/17 128/14 129/1 <b>harms [3]</b> 22/2 22/3 47/11 <b>has [73]</b> 1/16 2/10 7/6 8/24 8/25 9/8 12/12 12/14 12/15 14/19 18/10 26/7 43/23 51/23 52/2 55/7 55/7 61/8 63/12 65/1 70/19 72/16 76/1 82/4 83/22 89/8 92/9 95/6 101/17 101/23 104/11 106/8 110/5 111/9 123/20 125/4 126/8 128/24 129/24 131/10 131/11 133/21 136/10 139/2 144/16 145/8 145/9 145/10 145/10 145/22 154/11 154/21 156/12 156/18 159/19 163/5 163/19 164/15 168/20 172/24 173/2 175/7 178/10 178/13 179/21 183/11 183/20	184/13 185/22 186/7 186/16 188/2 188/4 <b>hasn't [1]</b> 164/22 <b>have [240]</b> <b>haven't [3]</b> 30/10 114/10 176/4 <b>having [15]</b> 6/21 25/4 26/11 33/16 40/5 63/16 66/17 78/22 86/13 153/11 164/14 166/3 176/3 176/25 179/13 <b>he [3]</b> 1/13 41/21 56/15 <b>head [1]</b> 3/1 <b>headache [2]</b> 22/6 153/22 <b>heading [3]</b> 50/8 160/5 181/8 <b>health [50]</b> 3/21 5/5 28/5 31/23 35/24 35/25 53/2 54/1 54/8 59/18 60/5 61/8 63/4 63/6 63/8 64/13 65/11 65/14 70/5 70/8 71/1 71/5 71/7 71/10 75/19 77/14 80/3 84/6 85/22 103/18 115/6 118/5 118/17 118/20 119/1 119/2 120/3 120/14 126/23 142/7 143/7 157/6 157/14 162/2 162/6 165/7 165/9 169/6 169/25 184/24 <b>healthcare [14]</b> 70/20 112/1 115/3 117/10 127/18 136/4 143/10 165/1 170/5 170/18 173/8 176/24 183/7 187/25 <b>healthy [4]</b> 8/14 8/17 136/18 137/13 <b>hear [4]</b> 17/16 33/3 68/22 116/3 <b>heard [11]</b> 50/16 116/13 143/13 149/12 150/25 151/16 152/19 159/10 160/21 180/18 185/22 <b>hearing [4]</b> 81/9 116/9 116/24 189/6 <b>heart [5]</b> 52/2 94/8 105/1 117/13 136/1 <b>held [2]</b> 33/10 159/4 <b>help [7]</b> 15/20 66/16 83/19 97/14 113/22 137/8 156/22 <b>helped [4]</b> 5/23 88/1 88/6 128/25 <b>helpful [4]</b> 56/17 92/8 138/7 175/25 <b>helpfully [4]</b> 68/21 72/10 81/12 188/7 <b>Helping [1]</b> 127/18	<b>her [2]</b> 188/14 188/14 <b>here [8]</b> 19/6 41/24 49/5 60/9 81/5 90/18 101/12 158/3 <b>hesitancy [1]</b> 51/19 <b>hey [1]</b> 49/5 <b>hidden [1]</b> 12/13 <b>high [21]</b> 18/25 22/8 26/16 26/19 46/2 53/22 61/15 79/1 83/13 83/13 85/3 86/17 92/15 96/2 96/21 96/24 98/23 100/6 138/22 138/23 159/6 <b>high-quality [1]</b> 85/3 <b>higher [9]</b> 26/17 51/3 89/3 89/25 95/19 136/21 144/7 144/19 168/20 <b>highest [3]</b> 83/6 93/9 128/17 <b>highlight [1]</b> 175/22 <b>highly [1]</b> 16/11 <b>him [3]</b> 1/16 56/18 107/18 <b>hint [1]</b> 163/6 <b>historic [2]</b> 125/5 143/21 <b>historically [1]</b> 151/17 <b>hit [1]</b> 27/17 <b>hm [1]</b> 107/11 <b>Hmm [1]</b> 173/15 <b>hold [1]</b> 124/11 <b>holds [1]</b> 133/20 <b>Holiday [8]</b> 167/12 169/16 169/23 170/6 170/13 170/23 171/2 171/10 <b>holistic [1]</b> 146/10 <b>honesty [1]</b> 124/18 <b>honorary [1]</b> 3/3 <b>hope [6]</b> 19/3 113/24 114/10 125/7 134/21 153/14 <b>hopefully [1]</b> 16/4 <b>hoping [1]</b> 6/19 <b>hospital [5]</b> 3/7 44/5 55/5 92/22 160/13 <b>hospitalisation [3]</b> 87/10 87/13 95/10 <b>hospitals [3]</b> 43/25 45/8 80/4 <b>host [3]</b> 3/13 46/19 139/9 <b>hour [2]</b> 26/11 40/9 <b>hourly [2]</b> 39/9 146/12 <b>hours [1]</b> 27/3 <b>house [1]</b> 60/2 <b>how [51]</b> 5/7 11/15 18/19 20/22 21/21 27/1 29/15 29/15 32/4
	<b>H</b>			
	<b>had [73]</b> 11/25 18/15 19/18 19/20 19/20 19/22 21/10 21/21 23/17 27/12 36/20 37/10 38/12 51/12 54/24 54/25 56/13 58/14 58/19 60/23 66/18 66/25 67/3 71/9 72/1 72/16 74/5 86/11 88/23 89/1 89/6 91/25 92/1 105/8 108/20 109/20 119/2 121/20 122/21 125/4 131/10 131/16 132/13 132/25 133/12 137/15 143/18 143/24 146/23 156/25 157/4 159/9 160/7 160/15 160/17 163/13 164/22 164/22 166/24 167/1 168/15 169/5 169/9 169/11 170/15 170/23 173/20 174/9 176/7 178/6 180/16			

<b>H</b>	<b>I cannot [2]</b> 16/13 72/24	159/23	68/16 74/21 84/20 93/20 111/17 112/15 112/16 117/9 118/23 126/4 126/14 135/1 138/2 143/22 159/6 163/18 175/22	47/18 49/1 49/6 51/12 51/22 56/19 58/10 59/11 60/3 62/2 70/11 72/16 74/15 74/24 81/6 82/24 83/7 83/18 91/25 92/4 94/13 94/18 94/24 95/8 104/15 104/16 104/24 107/17 109/24 110/2 110/22 113/12 114/8 115/11 128/15 130/25 132/12 133/13 133/15 135/13 136/20 136/22 137/7 138/2 138/7 138/14 138/22 139/6 139/24 140/7 141/9 145/15 145/21 146/20 152/1 152/15 154/9 154/15 156/11 156/18 157/7 158/10 160/12 163/12 164/21 164/25 165/9 167/25 168/6 168/19 170/4 172/24 174/12 176/11 176/20 177/22 182/20 183/16 184/18 185/9 186/2 186/20 187/8 187/19 188/13
<b>how... [42]</b> 33/13 43/17 43/22 45/22 53/16 53/16 53/25 54/15 59/7 63/20 63/21 63/23 66/12 70/24 76/9 76/17 76/21 76/22 89/15 89/16 90/18 91/10 91/15 96/9 109/2 128/19 130/9 133/12 137/20 156/25 158/11 158/18 158/21 161/8 163/4 172/3 175/24 176/9 176/10 183/16 186/1 187/19	<b>I correct [1]</b> 116/1	<b>I should [1]</b> 93/16	<b>I wouldn't [2]</b> 55/20 162/15	<b>II [9]</b> 7/22 7/23 8/10 8/21 8/22 9/4 9/8 9/16 139/17
<b>however [5]</b> 53/6 87/8 97/2 125/2 144/20	<b>I could [4]</b> 1/20 76/7 76/15 113/23	<b>I speculate [1]</b> 98/9	<b>I'd [7]</b> 16/14 61/9 110/12 110/23 114/8 114/25 171/4	<b>III [25]</b> 8/11 10/2 10/14 10/18 12/17 13/1 13/9 13/13 18/15 18/20 26/16 26/18 26/21 44/3 44/6 45/10 50/17 50/19 52/13 74/5 85/4 139/17 139/22 143/17 148/24
<b>huge [2]</b> 79/8 113/22	<b>I couldn't [1]</b> 55/17	<b>I suggested [1]</b> 160/6	<b>I'm [40]</b> 2/15 3/5 29/19 30/2 30/2 36/14 43/6 43/6 47/17 52/1 52/1 52/3 52/20 52/21 54/17 63/13 66/20 66/23 66/24 73/23 92/7 104/23 104/23 109/5 110/1 110/15 113/21 116/3 117/24 130/16 147/2 154/13 155/17 158/10 168/13 170/12 182/3 184/3 185/18 188/10	<b>ill [2]</b> 19/22 137/8
<b>hugely [2]</b> 138/20 156/25	<b>I didn't [5]</b> 11/22 11/24 110/21 150/16 157/23	<b>I suppose [1]</b> 25/14	<b>I've [13]</b> 12/16 19/4 22/18 31/4 51/14 77/1 80/13 86/14 86/16 110/12 113/18 125/7 134/13	<b>illness [1]</b> 22/10
<b>Hugo [1]</b> 55/18	<b>I do [7]</b> 58/10 105/23 108/8 163/18 164/18 183/21 187/2	<b>I then [2]</b> 59/5 105/16	<b>idea [14]</b> 11/4 21/15 29/14 31/15 54/18 54/22 55/10 63/20 76/9 88/15 90/13 111/16 158/25 159/5	<b>illustrative [1]</b> 113/8
<b>human [26]</b> 7/9 7/19 20/18 27/6 33/6 33/14 35/14 37/19 72/20 102/8 118/25 119/15 120/8 123/6 124/23 134/6 134/18 135/5 135/16 135/19 146/11 148/15 150/5 159/2 166/25 177/18	<b>I don't [8]</b> 41/23 64/8 72/4 72/5 111/11 116/10 152/1 176/4	<b>I therefore [1]</b> 84/7	<b>ideal [1]</b> 46/19	<b>immediate [1]</b> 72/17
<b>humans [1]</b> 7/16	<b>I emphasise [2]</b> 9/22 90/24	<b>I think [114]</b> 3/5 3/23 5/20 17/4 18/14 20/7 22/1 23/14 24/6 24/15 28/16 31/13 31/20 32/13 32/14 32/23 36/17 39/18 40/3 40/8 40/15 42/12 43/23 49/16 51/8 56/7 56/25 59/7 59/8 60/8 61/7 61/18 62/25 64/25 66/13 66/15 67/2 68/1 68/4 69/3 70/23 71/2 71/4 71/8 72/5 73/21 74/10 74/11 77/24 78/10 78/12 78/18 78/25 79/11 80/9 80/13 80/14 80/18 81/4 84/18 85/18 87/4 88/24 89/11 91/22 94/3 96/17 97/12 99/15 100/18 102/20 102/23 103/25 104/17 105/23 108/1 108/5 109/17 110/2 110/4 110/7 112/20 113/2 113/3 113/7 113/18 115/7 115/23 125/11 125/15 131/2 139/18 141/1 143/24 146/7 149/2 150/14 153/8 153/15 164/15 168/14 170/3 170/11 178/5 179/16 182/18 182/23 184/7 184/9 185/1 185/3 187/13 188/6 188/12	<b>identical [2]</b> 30/21 47/8	<b>immensely [1]</b> 188/17
<b>hundred [1]</b> 29/22	<b>I explain [1]</b> 73/20	<b>I tried [1]</b> 84/7	<b>identification [2]</b> 74/2 128/20	<b>immune [4]</b> 9/2 9/14 101/16 102/7
<b>hundreds [9]</b> 9/19 10/20 29/23 47/23 76/7 90/19 90/24 94/17 159/7	<b>I got [1]</b> 11/24	<b>I tried [1]</b> 84/7	<b>identified [15]</b> 41/13 51/2 63/16 71/23 77/17 87/21 91/15 91/24 92/9 101/23 106/7 127/10 148/18 151/4 165/16	<b>immunisation [10]</b> 53/4 56/22 58/1 58/4 58/24 123/15 142/23 166/15 170/17 179/2
<b>Hungary [1]</b> 36/1	<b>I had [3]</b> 19/18 19/20 27/12	<b>I tried [1]</b> 84/7	<b>identify [19]</b> 1/21 41/4 51/5 51/11 55/20 56/1 57/5 61/22 64/19 67/19 75/16 78/18 83/15 91/7 103/17 104/3 104/16 107/19 155/19	<b>immunosuppressed [1]</b> 46/12
<b>hydroxychloroquine [3]</b> 181/9 181/10 181/16	<b>I have [13]</b> 12/19 15/14 47/1 79/12 80/25 101/25 108/3 108/12 115/13 116/1 148/18 183/2 183/8	<b>I tried [1]</b> 84/7	<b>if [109]</b> 1/6 1/11 7/14 10/6 14/23 14/25 16/15 18/21 18/22 24/9 24/12 24/18 24/24 25/4 25/9 26/15 30/9 38/12 40/4 41/23 41/24 44/13 46/1 47/1	<b>impact [29]</b> 4/14 4/16 9/10 11/9 11/9 20/2 27/17 39/14 43/12 43/21 48/18 59/7 66/9 66/25 72/11 72/15 75/10 83/25 87/1 88/23 89/9 106/3 138/14 138/19 140/4 140/6 146/5 158/22 164/14
<b>Hygiene [6]</b> 2/22 2/25 3/4 3/6 3/9 54/20	<b>I hope [5]</b> 113/24 114/10 125/7 134/21 153/14	<b>I tried [1]</b> 84/7	<b>ie [5]</b> 16/10 104/20 133/7 138/15 167/14	
<b>hypothetical [1]</b> 62/1	<b>I just [2]</b> 105/5 107/3	<b>I tried [1]</b> 84/7		
<b>I</b>	<b>I know [4]</b> 23/23 38/4 86/15 184/23	<b>I tried [1]</b> 84/7		
<b>I agree [1]</b> 84/1	<b>I known [1]</b> 11/25	<b>I tried [1]</b> 84/7		
<b>I allowed [1]</b> 187/8	<b>I make [2]</b> 97/12 113/2	<b>I tried [1]</b> 84/7		
<b>I also [1]</b> 30/2	<b>I may [6]</b> 96/19 110/2 115/11 136/22 138/7 158/10	<b>I tried [1]</b> 84/7		
<b>I am [4]</b> 72/7 109/17 112/13 129/18	<b>I mean [4]</b> 39/23 39/24 74/14 123/23	<b>I tried [1]</b> 84/7		
<b>I appear [1]</b> 111/25	<b>I mentioned [3]</b> 90/9 97/23 98/11	<b>I tried [1]</b> 84/7		
<b>I ask [4]</b> 108/9 113/12 183/6 185/14	<b>I might [5]</b> 11/25 12/4 81/4 83/2 133/8	<b>I tried [1]</b> 84/7		
<b>I asked [2]</b> 27/12 160/3	<b>I needn't [1]</b> 143/16	<b>I tried [1]</b> 84/7		
<b>I believe [4]</b> 23/19 58/25 125/24 160/18	<b>I not [1]</b> 180/4	<b>I tried [1]</b> 84/7		
<b>I can [7]</b> 104/23 107/17 163/5 171/12 174/12 176/4 184/21	<b>I now [2]</b> 12/16 160/25	<b>I tried [1]</b> 84/7		
<b>I can't [1]</b> 16/16	<b>I only [1]</b> 109/21	<b>I tried [1]</b> 84/7		
	<b>I opened [1]</b> 116/12	<b>I tried [1]</b> 84/7		
	<b>I propose [1]</b> 1/12	<b>I tried [1]</b> 84/7		
	<b>I referred [1]</b> 3/5	<b>I tried [1]</b> 84/7		
	<b>I represent [2]</b> 109/22 185/18	<b>I tried [1]</b> 84/7		
	<b>I said [1]</b> 58/13	<b>I tried [1]</b> 84/7		
	<b>I say [7]</b> 30/2 73/22 113/3 157/18 157/20 185/3 186/6	<b>I tried [1]</b> 84/7		
	<b>I see [1]</b> 42/13	<b>I tried [1]</b> 84/7		
	<b>I shall [2]</b> 114/2	<b>I tried [1]</b> 84/7		

<b>I</b>	<b>increased [2]</b> 51/12 146/9	149/13	172/19	133/23 165/5 182/11
<b>impacting [1]</b> 132/13	<b>increases [1]</b> 22/18	<b>inflammatory [1]</b> 98/17	<b>INQ000502035 [1]</b> 153/1	<b>internationally [7]</b> 18/5 85/10 94/12
<b>impartiality [1]</b> 124/19	<b>incredible [1]</b> 39/22	<b>influence [5]</b> 128/11 128/24 186/1 186/9 186/10	<b>inquiry [16]</b> 1/10 4/2 5/3 81/16 82/23 83/5 105/22 109/23 114/13 117/25 132/18 161/2 179/19 185/22 190/6 190/12	101/21 128/16 134/5 177/14
<b>impermissibly [1]</b> 162/21	<b>incredibly [2]</b> 123/9 123/18	<b>Influencing [1]</b> 127/22	<b>inside [2]</b> 50/3 71/1	<b>Internet [1]</b> 114/2
<b>implications [1]</b> 181/4	<b>incurred [1]</b> 186/3	<b>inform [2]</b> 141/9 175/15	<b>insofar [1]</b> 71/17	<b>interpret [1]</b> 44/21
<b>importance [7]</b> 16/19 39/23 55/9 64/1 70/8 78/22 123/2	<b>indeed [24]</b> 4/18 6/1 16/6 25/21 40/17 41/10 43/5 51/20 56/25 86/14 88/3 92/24 93/11 94/3 98/10 99/6 103/25 105/5 113/25 123/25 134/4 139/24 175/25 183/22	<b>informal [1]</b> 59/1	<b>inspect [2]</b> 133/1 133/14	<b>interrupt [2]</b> 130/22 147/3
<b>important [46]</b> 11/15 14/9 15/16 20/11 23/7 23/12 30/15 33/13 51/16 53/24 53/25 54/15 57/5 60/10 63/1 68/22 85/19 86/11 95/21 107/24 111/18 116/23 119/13 122/7 122/18 125/9 129/3 134/2 142/12 146/9 151/5 152/10 155/19 161/16 164/12 169/23 170/3 172/12 175/18 177/13 182/24 183/19 184/11 185/2 186/25 187/1	<b>independence [8]</b> 118/1 118/14 118/23 119/6 122/3 126/9 134/17 138/2	<b>information [62]</b> 5/24 43/10 43/19 46/4 54/16 59/2 59/5 60/12 60/15 60/20 72/19 72/23 72/23 77/4 77/5 77/13 77/18 77/23 77/25 78/1 78/7 79/23 85/13 108/13 108/17 108/20 108/22 108/25 109/1 109/3 109/12 110/19 135/7 139/10 139/14 139/21 141/6 141/18 141/25 142/9 142/12 142/13 146/12 159/19 161/4 161/6 161/7 161/12 161/25 162/9 170/13 173/8 174/25 176/1 178/19 179/5 179/8 179/14 179/15 179/17 184/9 188/1	<b>inspected [1]</b> 133/12	<b>interval [5]</b> 34/14 88/14 88/23 89/1 178/7
<b>importantly [2]</b> 3/14 102/23	<b>independent [21]</b> 14/18 15/8 15/10 15/24 31/12 31/19 32/2 62/22 89/21 117/18 117/21 123/3 123/3 123/11 123/11 123/14 124/5 130/6 134/8 138/4 138/20	<b>informed [3]</b> 91/21 164/21 187/23	<b>inspection [1]</b> 133/11	<b>intervention [2]</b> 137/8 155/11
<b>impose [1]</b> 128/4	<b>India [2]</b> 132/21 133/2	<b>initial [4]</b> 50/11 86/23 131/22 173/3	<b>inspectorate [1]</b> 132/1	<b>intimately [1]</b> 119/6
<b>impractical [2]</b> 78/10 78/14	<b>indication [1]</b> 34/18	<b>initially [1]</b> 120/16	<b>inspectors [3]</b> 133/1 133/2 133/5	<b>into [24]</b> 1/17 2/10 10/20 20/4 36/22 42/24 56/9 92/12 95/6 104/24 105/22 119/9 125/22 125/23 136/16 138/19 139/7 140/16 140/17 146/1 161/17 170/14 173/3 185/10
<b>improper [1]</b> 162/23	<b>indicative [1]</b> 11/9	<b>injected [1]</b> 26/7	<b>instance [1]</b> 36/23	<b>introduced [2]</b> 141/23 151/20
<b>improve [7]</b> 51/17 51/17 58/9 144/10 183/16 183/17 183/20	<b>individual [18]</b> 25/21 55/16 65/25 72/5 76/18 77/18 81/17 82/1 91/8 138/14 138/19 157/21 158/17 167/2 174/21 176/11 178/22 186/20	<b>injection [3]</b> 22/6 106/10 153/21	<b>instances [7]</b> 13/5 13/6 56/14 60/23 61/8 70/8 109/9	<b>introducing [1]</b> 79/13
<b>improved [2]</b> 184/2 187/5	<b>industries [7]</b> 49/4 75/18 78/13 108/20 111/5 135/17 135/22	<b>injured [4]</b> 71/14 110/16 111/2 163/13	<b>instead [1]</b> 82/10	<b>investigate [2]</b> 15/1 149/17
<b>improvement [3]</b> 163/16 182/25 186/17	<b>industry [3]</b> 66/20 127/2 128/17	<b>innovation [1]</b> 127/20	<b>Institute [3]</b> 29/5 129/7 132/20	<b>investigated [2]</b> 17/21 104/11
<b>improves [1]</b> 30/4	<b>ineffective [1]</b> 13/19	<b>Innovations [1]</b> 127/1	<b>instrument [1]</b> 120/9 133/24 171/16 172/11	<b>investigation [7]</b> 57/2 105/4 106/14 135/7 166/6 173/3 175/8
<b>impurities [2]</b> 29/13 129/25	<b>inelegantly [1]</b> 51/15	<b>input [4]</b> 74/17 128/15 137/1 151/13	<b>instrumental [3]</b> 133/24 171/16 172/11	<b>investigator [4]</b> 12/9 13/7 16/8 55/17
<b>inability [1]</b> 87/18	<b>inevitable [2]</b> 178/4 178/5	<b>INQ000 [1]</b> 172/21	<b>insufficient [1]</b> 79/25	<b>investigators [5]</b> 15/3 15/25 44/10 55/17 182/1
<b>include [5]</b> 46/11 48/10 53/13 57/15 157/6	<b>inevitably [1]</b> 33/15	<b>INQ000110129 [1]</b> 145/5	<b>integrate [1]</b> 80/5	<b>investment [2]</b> 185/24 186/12
<b>included [10]</b> 50/11 50/19 55/18 56/12 85/20 112/20 159/20 160/15 160/20 179/9	<b>infect [1]</b> 89/17	<b>INQ000408453 [1]</b> 176/14	<b>integrity [2]</b> 124/18 126/9	<b>invitation [1]</b> 160/22
<b>includes [2]</b> 76/16 111/4	<b>infected [6]</b> 4/2 25/16 87/14 89/16 89/22 138/15	<b>INQ000410479 [1]</b> 148/9	<b>intend [2]</b> 45/22 173/7	<b>invitations [1]</b> 159/13
<b>including [15]</b> 23/20 28/24 28/25 51/3 94/8 95/15 97/4 101/21 102/22 125/15 129/19 138/13 142/13 155/14 185/23	<b>infection [13]</b> 10/5 13/14 19/2 19/20 19/23 19/25 20/5 87/18 88/7 93/15 94/9 137/15 176/10	<b>INQ000421360 [1]</b> 154/7	<b>intend [5]</b> 23/22 48/1 84/23 85/15 157/20	<b>invite [1]</b> 160/18
<b>inconsistent [2]</b> 42/20 92/1	<b>infections [2]</b> 29/13 177/5	<b>INQ000474337 [1]</b> 127/9	<b>intense [3]</b> 40/17 146/21 175/3	<b>invited [5]</b> 63/15 63/20 146/21 160/8 168/16
<b>increase [4]</b> 75/14 77/15 88/22 184/17	<b>inference [1]</b> 131/16	<b>INQ000494303 [1]</b> 177/16	<b>intensely [1]</b> 172/9	<b>involve [1]</b> 150/20
	<b>inflammation [1]</b>	<b>INQ000494385 [1]</b>	<b>interact [3]</b> 62/20 150/3 183/21	<b>involved [11]</b> 5/12 17/2 18/19 19/8 19/17 56/13 119/7 119/12 126/2 180/22 187/14

<b>I</b>	152/13 153/4 153/4 153/14 154/10 154/11 154/19 155/11 163/3 168/20 169/15 172/19 172/25 173/18 174/24 175/15 179/2 182/22 183/19 187/24 188/22 188/23 188/25	<b>just [55]</b> 8/10 9/22 14/25 15/24 28/21 29/14 31/4 32/20 34/7 44/24 48/13 50/6 52/2 60/21 63/10 68/19 79/2 104/10 105/5 105/8 107/3 107/4 108/11 108/25 110/2 110/19 113/13 114/25 118/23 123/3 125/11 126/14 129/2 130/17 130/22 133/18 134/6 135/25 136/22 139/7 139/19 154/5 154/8 154/8 154/25 155/17 157/17 157/23 158/14 160/14 160/21 168/17 172/24 179/22 183/3	21/16 22/21 23/23 26/11 38/4 38/14 41/23 42/14 44/9 46/1 70/12 71/21 72/4 79/18 82/20 86/15 93/3 95/19 115/15 125/9 150/17 152/11 157/1 167/19 172/3 180/25 184/23 188/3 188/13	<b>larger [4]</b> 13/10 30/1 30/5 144/23 <b>largest [1]</b> 54/23 <b>last [6]</b> 67/16 77/2 80/12 120/21 177/3 184/13 <b>lastly [1]</b> 181/8 <b>later [12]</b> 14/8 17/17 33/4 51/2 73/16 73/22 101/6 115/17 121/4 124/9 124/22 173/20 <b>latter [2]</b> 90/1 164/9 <b>latterly [1]</b> 120/18 <b>law [7]</b> 35/23 36/5 36/19 36/21 44/21 120/12 138/4 <b>lawfulness [1]</b> 121/14 <b>lawyer [1]</b> 36/15 <b>lay [2]</b> 65/6 128/3 <b>lead [7]</b> 1/10 29/12 29/13 111/12 114/13 190/6 190/12 <b>leaders [2]</b> 29/7 184/14 <b>leading [3]</b> 51/23 57/1 58/13 <b>leads [2]</b> 98/18 170/4 <b>leaflet [20]</b> 108/14 108/21 109/3 109/8 109/14 109/15 110/19 141/18 141/25 142/10 142/11 142/16 161/20 161/25 179/1 187/1 187/10 187/20 187/23 188/3 <b>leaflets [5]</b> 77/6 108/17 142/9 178/19 179/11 <b>leak [1]</b> 103/2 <b>learn [1]</b> 116/17 <b>learned [2]</b> 33/9 96/8 <b>learning [2]</b> 59/8 96/6 <b>least [14]</b> 21/18 36/2 44/17 49/12 81/18 88/15 89/2 90/7 99/8 103/12 105/10 105/24 141/16 149/24 <b>leave [1]</b> 138/8 <b>leaving [2]</b> 81/5 138/6 <b>lecturer [1]</b> 2/20 <b>led [5]</b> 50/12 74/1 96/16 99/17 110/5 <b>left [4]</b> 2/25 81/9 120/23 173/1 <b>legal [12]</b> 35/15 35/16 36/23 37/1 43/16 43/17 43/18 44/20 120/10 160/10 165/12 188/2 <b>legislation [2]</b> 120/17 121/7 <b>legislative [2]</b> 120/9
<b>isn't... [2]</b> 170/6 178/25 <b>isolation [2]</b> 171/19 171/19 <b>Israel [3]</b> 69/15 69/17 178/7 <b>issue [47]</b> 5/15 6/12 14/9 21/7 25/12 35/7 35/10 36/23 37/10 37/22 40/19 48/15 48/25 52/18 64/1 69/9 69/11 72/25 73/2 73/6 133/14 136/23 145/8 145/9 149/15 150/7 151/6 156/7 162/3 166/23 166/25 168/13 168/19 169/16 169/24 171/3 171/11 172/9 173/22 173/22 173/25 174/10 174/21 176/14 177/19 177/23 178/21 <b>issued [3]</b> 130/4 162/1 169/17 <b>issues [22]</b> 16/12 33/11 41/4 48/23 51/6 53/8 56/3 60/23 62/7 64/19 67/15 89/19 103/18 116/23 132/4 138/13 146/24 148/17 149/16 150/11 161/1 161/12 <b>issuing [1]</b> 170/24 <b>it [425]</b> <b>it have [1]</b> 63/13 <b>it's [115]</b> 4/8 6/20 9/9 10/6 10/21 13/24 14/3 14/18 15/8 15/16 20/11 20/19 20/19 20/21 21/12 21/25 23/10 24/11 24/11 25/8 28/14 28/17 28/22 29/24 30/14 30/15 31/8 33/20 35/15 36/22 37/9 37/18 39/1 39/5 43/16 44/3 44/11 44/20 45/3 45/4 45/6 46/1 48/19 48/25 51/8 52/3 55/22 55/23 57/20 57/23 60/17 61/12 62/2 64/11 65/2 65/19 65/24 66/4 66/5 68/22 70/3 74/24 74/24 75/2 77/23 78/10 84/11 92/17 93/3 96/4 96/11 96/22 96/23 101/25 105/7 109/17 113/3 122/17 125/9 128/8 130/12 134/7 136/4 138/22 138/24 141/9 143/5 144/9 145/6 146/9 151/4 152/10	<b>its [37]</b> 9/10 16/4 32/13 38/18 58/20 61/21 62/20 66/6 68/4 69/25 73/7 82/2 94/23 108/14 116/8 118/4 118/17 123/10 126/9 128/19 129/9 131/6 134/11 134/12 134/12 134/19 136/1 147/10 152/18 163/16 168/5 169/18 169/18 170/24 173/3 176/2 180/7 <b>itself [21]</b> 25/15 42/11 43/13 58/2 64/9 69/11 87/23 91/17 94/5 97/2 99/3 99/5 100/12 101/23 102/3 102/6 133/21 135/6 154/22 166/4 167/17 <b>ITU [1]</b> 176/2 <b>IV [9]</b> 8/1 44/2 44/25 66/9 66/11 66/14 67/2 74/12 74/24	<b>justice [1]</b> 152/2 <b>justify [1]</b> 182/2 <b>Jödicke [1]</b> 5/22	<b>known [28]</b> 6/14 10/24 11/25 23/1 23/10 26/7 27/17 28/15 29/4 33/5 33/5 35/13 37/12 38/17 41/16 45/21 59/14 65/5 72/9 77/5 88/12 91/19 94/14 97/5 115/2 129/13 140/9 143/6 <b>knows [3]</b> 12/11 125/4 164/20	
<b>J</b>	<b>James [1]</b> 1/25 <b>Janssen [3]</b> 98/21 100/3 101/9 <b>January [3]</b> 1/1 35/19 72/16 <b>January 2021 [1]</b> 72/16 <b>JCVI [9]</b> 34/16 72/21 123/15 162/5 162/7 168/18 169/24 172/13 176/12 <b>JCVI's [1]</b> 145/20 <b>JCVI-mandated [1]</b> 168/18 <b>jigsaw [1]</b> 60/11 <b>job [2]</b> 87/5 177/10 <b>joining [1]</b> 107/8 <b>Joint [1]</b> 123/14 <b>judged [1]</b> 128/1 <b>judgement [3]</b> 73/9 133/11 174/22 <b>July [5]</b> 37/11 42/4 125/12 149/10 150/11 <b>June [23]</b> 33/3 40/14 45/17 66/25 72/6 73/4 99/19 114/7 114/9 114/11 114/16 114/17 116/5 124/22 127/9 160/3 177/15 177/24 178/3 183/1 183/3 188/13 190/11	<b>K</b> <b>Kate [3]</b> 122/25 185/23 188/13 <b>KC [4]</b> 108/7 185/12 190/8 190/15 <b>Keele [1]</b> 2/17 <b>keep [2]</b> 44/20 185/9 <b>keeping [1]</b> 109/15 <b>Keith [5]</b> 1/3 52/8 55/18 160/2 186/16 <b>kept [4]</b> 54/1 58/1 128/17 151/6 <b>key [7]</b> 13/13 15/17 55/14 111/11 162/15 163/3 184/24 <b>kill [1]</b> 138/24 <b>killed [1]</b> 75/5 <b>killing [1]</b> 76/4 <b>kilter [2]</b> 62/3 143/19 <b>kind [12]</b> 7/10 12/3 21/16 22/4 60/3 65/15 66/3 80/8 113/9 154/9 162/3 186/9 <b>kinds [1]</b> 135/20 <b>Kingdom [38]</b> 17/3 17/7 23/16 31/8 31/9 32/21 35/3 37/2 38/8 38/14 49/14 50/3 50/4 52/16 52/25 54/2 58/18 80/2 88/13 94/18 119/21 120/11 121/12 131/6 133/7 133/16 133/20 140/20 140/22 141/5 141/7 141/8 149/3 149/6 162/20 164/1 169/14 179/25 <b>Kingdom's [2]</b> 129/15 130/3 <b>know [38]</b> 8/19 11/19 11/22 12/5 12/10 13/7 13/18 13/19 15/3	<b>knowing [1]</b> 165/23 <b>knowledge [17]</b> 22/18 22/23 22/24 34/20 55/15 59/24 61/16 65/4 72/2 72/5 72/17 85/18 99/23 127/6 127/7 141/14 148/5 <b>known [28]</b> 6/14 10/24 11/25 23/1 23/10 26/7 27/17 28/15 29/4 33/5 33/5 35/13 37/12 38/17 41/16 45/21 59/14 65/5 72/9 77/5 88/12 91/19 94/14 97/5 115/2 129/13 140/9 143/6 <b>knows [3]</b> 12/11 125/4 164/20	
<b>L</b>	<b>labels [1]</b> 7/24 <b>laboratories [6]</b> 29/3 29/6 30/7 129/6 129/13 129/21 <b>laboratory [10]</b> 6/14 6/16 6/18 6/22 7/7 7/8 19/19 129/14 129/15 130/4 <b>lack [4]</b> 72/15 83/23 99/24 186/18 <b>lacking [1]</b> 183/12 <b>Lady [19]</b> 1/4 1/11 51/22 69/24 92/6 108/8 111/21 111/24 113/12 113/17 114/7 159/22 185/13 187/7 187/16 187/24 188/20 188/22 189/1 <b>Ladyship [2]</b> 114/12 131/3 <b>Lagevrio [1]</b> 180/13 <b>Lancet [1]</b> 54/21 <b>Langstaff [1]</b> 4/3 <b>languages [1]</b> 184/7 <b>large [16]</b> 7/2 24/7 25/23 28/3 31/4 34/12 41/17 64/18 64/21 78/23 79/8 85/4 86/2 86/3 93/7 153/12 <b>large-scale [1]</b> 86/3 <b>largely [3]</b> 40/19 68/3 150/18	<b>leaflets [5]</b> 77/6 108/17 142/9 178/19 179/11 <b>leak [1]</b> 103/2 <b>learn [1]</b> 116/17 <b>learned [2]</b> 33/9 96/8 <b>learning [2]</b> 59/8 96/6 <b>least [14]</b> 21/18 36/2 44/17 49/12 81/18 88/15 89/2 90/7 99/8 103/12 105/10 105/24 141/16 149/24 <b>leave [1]</b> 138/8 <b>leaving [2]</b> 81/5 138/6 <b>lecturer [1]</b> 2/20 <b>led [5]</b> 50/12 74/1 96/16 99/17 110/5 <b>left [4]</b> 2/25 81/9 120/23 173/1 <b>legal [12]</b> 35/15 35/16 36/23 37/1 43/16 43/17 43/18 44/20 120/10 160/10 165/12 188/2 <b>legislation [2]</b> 120/17 121/7 <b>legislative [2]</b> 120/9		



<b>L</b>	188/18	<b>longer [2]</b> 58/18 164/9	80/22 97/16 107/7 107/12 108/18 109/8 119/20 121/9 129/22 131/11 131/13 132/20 132/23 134/15 135/16 155/1 160/7 160/15 160/17 160/20 161/3 161/18 174/10 177/2 177/10 177/22 179/16 180/20 183/22 188/5	<b>manufacturer [18]</b> 6/19 12/14 15/25 16/7 16/15 37/23 38/24 43/24 44/12 45/17 77/24 130/7 131/10 133/15 139/9 139/20 147/24 173/24
<b>legislative... [1]</b> 120/25	<b>likelihood [8]</b> 24/14 49/7 82/1 89/22 95/8 100/22 112/18 151/3	<b>look [42]</b> 7/12 7/17 13/13 14/20 22/3 34/12 42/22 47/17 49/3 49/4 52/20 54/25 58/10 60/3 63/7 65/12 65/25 66/5 73/4 73/16 75/24 83/7 99/19 117/12 119/3 122/23 124/22 132/1 133/1 138/5 139/18 145/2 145/21 152/24 154/5 155/23 172/13 172/13 172/14 172/16 176/20 177/13	<b>magnitude [1]</b> 57/12	<b>manufacturer's [3]</b> 39/1 109/6 109/12
<b>length [1]</b> 116/12	<b>likely [24]</b> 7/9 7/11 14/4 14/9 24/19 25/2 39/18 47/3 70/9 74/24 75/19 89/15 89/16 109/17 109/18 119/25 132/3 144/11 146/23 157/8 158/18 168/24 172/3 176/10	<b>looked [16]</b> 75/13 90/12 90/18 91/12 93/19 97/9 104/18 107/20 110/10 144/12 145/8 145/9 156/1 156/2 165/4 166/25	<b>main [3]</b> 33/18 65/2 127/10	<b>manufacturers [24]</b> 39/10 43/9 43/15 57/8 60/11 60/14 61/16 62/4 62/20 62/21 62/22 66/24 71/5 74/7 77/6 77/21 126/11 131/14 131/20 132/4 141/4 141/16 146/2 146/13
<b>lengthy [1]</b> 2/8	<b>limitations [1]</b> 68/4	<b>looked at [13]</b> 75/13 90/12 90/18 91/12 93/19 97/9 104/18 107/20 110/10 144/12 145/8 145/9 156/1 156/2 165/4 166/25	<b>mainly [2]</b> 62/20 144/20	<b>manufacturers' [1]</b> 52/22
<b>less [14]</b> 27/4 70/7 70/8 70/10 72/18 75/9 85/16 87/13 88/11 92/2 97/24 100/8 168/24 174/11	<b>limited [5]</b> 3/18 34/21 59/4 66/6 185/1	<b>looking [19]</b> 4/15 4/16 26/18 63/6 75/15 75/15 75/20 96/10 108/15 110/25 115/16 137/24 146/4 147/12 152/13 165/22 166/2 171/18 172/9	<b>maintained [1]</b> 77/3	<b>manufacturing [13]</b> 19/13 30/4 30/9 30/12 131/9 131/13 131/16 131/18 131/23 132/2 132/6 132/10 133/6
<b>lesser [1]</b> 139/2	<b>limiting [1]</b> 89/9	<b>looks [2]</b> 33/23 74/15	<b>major [6]</b> 14/14 46/21 47/9 48/3 56/12 176/21	<b>manuscripts [2]</b> 90/20 105/7
<b>let [5]</b> 22/12 47/2 79/16 103/14 150/12	<b>limits [1]</b> 11/5	<b>Lord [1]</b> 148/10	<b>make [43]</b> 10/10 15/7 18/8 40/6 41/11 45/21 49/19 51/14 58/11 59/9 59/12 60/15 62/7 69/5 71/3 71/8 78/16 79/11 80/5 84/8 97/12 104/4 106/5 107/2 107/7 113/2 113/4 126/12 133/8 134/19 135/9 139/13 139/23 144/6 163/21 175/18 177/2 182/8 184/7 184/10 185/9 186/22 186/22	<b>many [60]</b> 4/21 6/25 6/25 17/1 17/1 18/19 20/1 22/8 29/15 52/17 55/8 58/14 63/20 63/21 63/23 66/14 66/19 71/13 71/17 74/15 75/3 75/20 76/10 76/17 76/19 76/22 76/23 76/23 77/11 81/11 90/23 93/1 93/1 94/7 94/12 102/21 109/2 109/9 115/10 116/10 118/3 118/12 118/13 127/24 128/19 128/23 130/9 130/11 134/14 152/11 152/20 152/21 152/21 157/1 158/12 158/21 163/8 163/11 167/19 185/18
<b>let's [4]</b> 59/1 144/15 145/2 152/24	<b>link [10]</b> 55/3 55/6 58/11 58/21 58/21 148/14 152/8 175/7 176/16 177/14	<b>Lord Bethell [1]</b> 148/10	<b>majority [9]</b> 1/18 13/2 26/20 67/5 70/13 109/18 144/16 153/20 155/2	<b>mapped [1]</b> 22/24
<b>letter [5]</b> 148/7 148/11 161/10 170/17 170/19	<b>linkage [3]</b> 79/25 80/10 80/19	<b>loss [1]</b> 110/13	<b>make-up [3]</b> 49/19 69/5 144/6	<b>March [6]</b> 154/13 157/19 157/25 166/9 166/23 167/19
<b>level [29]</b> 4/15 18/15 19/1 19/9 21/8 21/14 21/20 35/17 36/25 61/15 76/18 79/10 81/25 82/14 85/23 88/25 89/5 89/6 91/8 93/10 103/9 121/19 128/6 138/18 142/4 167/18 176/8 184/2 184/9	<b>linked [4]</b> 56/21 127/24 155/11 168/20	<b>losses [1]</b> 66/18	<b>maker [1]</b> 118/8	<b>March 2021 [1]</b> 166/9
<b>levels [10]</b> 20/2 20/8 39/15 46/6 85/7 85/11 88/25 89/13 100/11 174/11	<b>Linking [1]</b> 54/4	<b>lost [2]</b> 80/13 87/16	<b>makes [2]</b> 142/22 154/20	<b>March 2023 [1]</b> 157/19
<b>liability [2]</b> 138/15 162/21	<b>links [2]</b> 56/7 56/8	<b>lot [7]</b> 39/5 84/19 116/13 135/4 137/23 163/20 165/9	<b>making [6]</b> 64/14 75/21 95/15 118/14 141/21 163/16	<b>March 2023 were [1]</b> 157/25
<b>liaison [3]</b> 39/9 142/7 147/11	<b>list [6]</b> 2/19 12/13 103/17 103/25 104/17 105/18	<b>lots [1]</b> 66/5	<b>malaria [1]</b> 181/18	<b>margin [1]</b> 84/14
<b>Liam [1]</b> 54/19	<b>lists [1]</b> 125/3	<b>loved [1]</b> 156/12	<b>male [1]</b> 106/24	<b>marginalised [1]</b> 183/18
<b>Liam Smeeth [1]</b> 54/19	<b>literally [1]</b> 113/6	<b>low [19]</b> 21/21 42/19 43/1 43/1 51/10 83/12 83/12 93/10 93/11 101/10 101/11 101/12 103/4 103/7 103/10 103/12 158/1 165/25 171/18	<b>managed [5]</b> 53/11 59/8 59/16 62/18 91/10	<b>market [1]</b> 79/2
<b>licence [1]</b> 118/2	<b>literature [11]</b> 6/2 6/4 42/23 43/1 82/14 88/20 90/13 103/20 103/22 104/2 105/9	<b>low-moderate [1]</b> 103/7	<b>management [10]</b> 4/25 45/22 52/25 53/3 56/22 58/3 58/4 61/1 74/7 125/17	<b>marketing [6]</b> 28/14 31/6 34/23 36/21 107/16 112/21
<b>licensed [1]</b> 27/11	<b>little [9]</b> 14/8 19/12 22/21 43/8 47/6 66/13 79/2 89/4 100/8	<b>lower [4]</b> 50/11 50/20 71/11 93/14	<b>mandated [2]</b> 165/7 168/18	
<b>licensing [13]</b> 115/9 115/18 118/8 118/17 118/20 119/9 134/14 145/10 148/8 148/12 166/22 177/16 177/17	<b>live [1]</b> 87/22	<b>lupus [1]</b> 104/23	<b>mandatory [6]</b> 70/19 70/25 71/4 71/10 71/12 164/24	
<b>lies [1]</b> 117/13	<b>lives [7]</b> 76/5 76/8 76/22 76/25 89/10 94/17 168/12		<b>manner [3]</b> 64/19 69/19 138/1	
<b>life [2]</b> 98/19 152/7	<b>local [3]</b> 163/23 163/25 164/11		<b>manufacture [2]</b> 5/14 43/20	
<b>light [3]</b> 28/7 91/18 102/13	<b>locally [1]</b> 164/8			
<b>like [31]</b> 7/18 12/12 26/11 74/21 79/1 84/9 87/10 94/25 97/25 105/14 106/11 112/23 113/6 114/25 126/4 135/1 136/18 136/20 146/13 146/20 153/22 165/10 168/6 171/4 175/22 176/11 177/22 182/14 182/18 182/22	<b>locations [1]</b> 143/4			
	<b>London [8]</b> 2/21 2/25 3/4 3/6 3/7 3/9 47/3 54/19			
	<b>long [19]</b> 2/18 27/1 43/8 87/20 87/21 88/2 88/3 88/7 88/9 88/11 103/17 103/25 104/17 105/18 106/3 114/10 125/3 171/10 178/16			
	<b>Long Covid [6]</b> 87/20 87/21 88/2 88/3 88/7 88/11			
	<b>long-persisting [1]</b> 88/9			
	<b>long-term [1]</b> 178/16			



<b>M</b>	<b>meant [12]</b> 30/13 61/11 69/3 72/17 88/16 109/13 118/13 119/22 131/1 136/1 178/7 187/24	<b>Medicines' [1]</b> 177/18	119/18 121/6 122/4 123/10 123/11 123/14 123/22 124/11 124/12 124/25 126/2 126/7 126/12 126/17 127/11 128/19 128/24 129/3 129/3 131/11 132/9 132/22 133/14 133/18 133/19 133/21 134/11 134/13 135/17 135/22 135/24 136/13 139/5 139/21 141/5 142/5 142/10 142/24 145/8 145/22 147/8 147/11 147/21 148/4 149/6 149/15 149/21 151/9 153/11 154/6 154/12 154/15 155/6 155/14 156/9 156/15 158/15 162/1 162/7 162/9 162/24 165/19 166/6 166/21 167/11 167/22 169/18 170/12 170/23 172/19 173/2 178/13 178/23 179/20 180/22 181/9 184/16 186/21 187/18	<b>milestones [1]</b> 162/16
<b>mass [5]</b> 52/11 56/9 59/21 79/23 85/13	<b>measurable [2]</b> 164/14 165/8	<b>member state [1]</b> 35/24	<b>million [13]</b> 63/22 64/12 76/25 96/12 96/14 96/14 130/12 130/18 130/25 153/16 159/12 159/13 164/16	
<b>masses [1]</b> 59/24	<b>measure [4]</b> 11/7 20/17 21/1 22/1	<b>member states [2]</b> 166/9 169/8	<b>millions [5]</b> 29/22 55/12 76/5 76/8 109/16	
<b>massive [1]</b> 32/18	<b>measured [2]</b> 14/11 158/1	<b>members [23]</b> 35/9 45/9 45/12 48/16 52/14 63/11 66/12 67/6 70/1 70/3 70/6 70/13 77/4 77/12 91/3 136/9 137/14 151/22 153/17 159/13 160/11 161/14 164/16	<b>mind [5]</b> 13/9 75/7 85/25 132/25 164/15	
<b>matching [1]</b> 151/18	<b>measurement [1]</b> 21/24	<b>memos [1]</b> 134/12	<b>minds [1]</b> 6/11	
<b>material [15]</b> 42/25 62/4 90/18 91/15 91/19 92/23 93/19 95/24 103/11 105/2 106/18 106/22 139/11 147/12 162/24	<b>measurements [1]</b> 21/3	<b>men [1]</b> 95/20	<b>minister [11]</b> 118/7 118/8 118/20 119/9 119/11 145/10 148/8 148/16 166/22 177/16 177/17	
<b>materially [2]</b> 64/4 168/11	<b>measuring [4]</b> 9/1 9/10 9/13 21/5	<b>menstrual [1]</b> 106/1	<b>ministers [11]</b> 118/17 119/1 119/2 119/12 120/3 134/9 134/10 134/16 145/7 145/11 173/2	
<b>materials [1]</b> 142/8	<b>mechanism [2]</b> 44/17 107/15	<b>menstruation [1]</b> 106/4	<b>minorities [5]</b> 47/16 48/16 51/13 184/16 184/18	
<b>mathematical [3]</b> 76/2 76/10 76/20	<b>mechanisms [1]</b> 44/18	<b>mention [2]</b> 151/12 161/21	<b>minority [8]</b> 47/12 47/20 48/17 112/1 112/3 183/7 183/13 183/23	
<b>matter [7]</b> 3/14 39/23 59/21 121/5 121/8 121/21 178/23	<b>media [1]</b> 77/14	<b>mentioned [10]</b> 32/9 60/4 73/10 90/9 90/24 97/23 98/11 159/8 183/14 186/10	<b>minute [2]</b> 113/7 172/25	
<b>mattered [1]</b> 156/5	<b>medical [29]</b> 2/21 3/3 3/7 3/12 4/22 25/10 25/12 25/19 77/17 83/11 84/24 87/22 90/25 91/12 98/5 100/20 103/17 115/6 117/1 124/3 124/6 124/13 125/15 127/12 136/5 137/8 152/3 170/5 183/11	<b>memos [1]</b> 134/12	<b>minutes [1]</b> 134/11	
<b>matters [10]</b> 16/10 52/23 59/23 116/8 116/19 122/22 123/9 153/21 155/3 186/11	<b>medicinal [13]</b> 18/13 28/25 32/21 32/22 33/25 35/8 36/9 77/18 115/25 117/8 123/8 135/13 137/1	<b>men [1]</b> 95/20	<b>misreported [1]</b> 12/2	
<b>may [63]</b> 2/11 7/15 8/1 10/17 14/24 14/25 23/20 27/6 29/13 30/1 30/4 31/2 34/19 34/24 46/10 46/25 47/1 48/4 55/19 62/22 65/21 65/24 67/17 69/24 70/17 72/6 80/11 82/20 82/20 83/10 87/20 91/16 96/19 100/1 109/14 110/2 110/6 111/15 113/12 113/12 115/11 115/23 116/1 130/11 136/14 136/22 138/7 144/21 146/8 151/20 153/25 154/25 154/25 155/10 157/7 158/10 160/14 160/21 161/11 173/11 177/5 178/20 186/6	<b>medicine [21]</b> 2/22 3/1 3/4 3/6 3/10 6/19 8/6 9/22 9/23 11/2 11/10 23/23 54/20 108/23 131/21 136/1 136/5 136/20 155/12 187/4 188/4	<b>merit [3]</b> 103/23 104/5 105/3	<b>missed [1]</b> 38/14	
<b>maybe [6]</b> 15/11 27/6 31/17 42/19 104/10 159/13	<b>medicines [59]</b> 3/2 4/10 4/14 4/17 20/1 23/20 31/6 32/21 32/23 33/1 33/6 33/14 34/19 35/5 35/14 37/19 40/13 55/22 58/19 59/17 60/18 72/20 79/1 79/4 102/8 102/22 115/2 115/5 115/8 115/9 115/18 115/21 117/1 117/7 118/25 119/15 120/8 123/7 124/5 124/23 127/12 129/14 130/3 134/4 134/6 134/18 135/5 135/16 135/19 135/25 146/11 148/16 150/5 159/2 165/5 166/25 179/1 179/22 179/24	<b>merits [1]</b> 133/13	<b>Mm [2]</b> 90/17 107/11	
<b>me [9]</b> 12/12 63/1 63/12 92/6 150/16 152/1 153/14 182/22 182/23	<b>me [9]</b> 12/12 63/1 63/12 92/6 150/16 152/1 153/14 182/22 182/23	<b>message [1]</b> 175/19	<b>Mm-hm [1]</b> 107/11	
<b>mean [14]</b> 39/23 39/24 51/7 74/14 79/23 104/9 117/20 120/15 123/23 128/3 154/22 162/2 171/13 181/14	<b>mean [14]</b> 39/23 39/24 51/7 74/14 79/23 104/9 117/20 120/15 123/23 128/3 154/22 162/2 171/13 181/14	<b>met [3]</b> 120/2 150/6 173/5	<b>mobile [2]</b> 109/10 142/21	
<b>meaning [4]</b> 57/17 96/24 98/23 100/6	<b>meaning [4]</b> 57/17 96/24 98/23 100/6	<b>MHR's [1]</b> 177/8	<b>modalities [1]</b> 162/18	
<b>means [8]</b> 20/13 26/2 27/20 44/13 72/2 104/10 117/22 143/4	<b>means [8]</b> 20/13 26/2 27/20 44/13 72/2 104/10 117/22 143/4	<b>MHRA [137]</b> 3/2 24/13 28/25 31/9 31/11 32/10 32/20 33/4 33/11 33/22 33/23 34/4 34/7 34/13 37/19 38/18 39/9 42/3 42/17 44/16 44/18 46/14 59/19 60/1 61/19 61/20 62/18 62/19 63/6 63/15 64/19 65/7 65/14 67/14 67/19 69/11 69/18 72/3 72/20 73/6 77/14 80/22 84/15 91/20 96/11 96/17 99/17 101/22 102/10 102/15 102/23 105/4 114/21 115/3 116/16 117/1 117/5 118/3	<b>models [3]</b> 76/2 76/10 76/20	

<b>M</b>	108/7 110/21 185/8 185/10 185/12 187/8 188/11 190/8 190/15 <b>mortality [6]</b> 75/11 75/13 75/14 76/19 138/23 139/3 <b>mortem [1]</b> 156/18 <b>most [20]</b> 13/20 21/17 22/5 31/5 32/16 50/19 51/16 54/11 60/18 70/6 70/8 76/24 85/9 88/25 97/22 101/21 107/24 135/1 137/14 165/4 <b>mostly [2]</b> 57/16 140/24 <b>motivated [1]</b> 165/10 <b>move [1]</b> 110/20 <b>movement [1]</b> 99/25 <b>moving [3]</b> 8/23 125/6 129/2 <b>Mr [11]</b> 1/3 52/8 55/18 160/2 172/20 173/7 183/4 183/5 185/7 186/16 190/14 <b>Mr Hancock [2]</b> 172/20 173/7 <b>Mr Hugo [1]</b> 55/18 <b>Mr Keith [4]</b> 1/3 52/8 160/2 186/16 <b>Mr Odogwu [2]</b> 183/4 185/7 <b>mRNA [7]</b> 68/24 83/16 92/18 93/8 162/25 163/7 177/10 <b>mRNA vaccine [1]</b> 83/16 <b>Ms [13]</b> 108/5 108/7 110/21 111/22 111/23 185/8 185/10 185/12 187/8 188/11 190/8 190/9 190/15 <b>Ms Banton [1]</b> 111/22 <b>Ms Morris [9]</b> 108/5 108/7 110/21 185/10 185/12 187/8 188/11 190/8 190/15 <b>much [51]</b> 2/4 12/22 14/13 18/1 18/3 26/5 28/10 28/13 30/20 31/19 51/8 57/21 58/13 64/13 64/13 65/3 70/16 80/24 81/10 90/18 91/15 93/14 94/11 107/2 108/2 113/11 113/16 113/17 113/25 114/17 114/17 123/21 127/25 128/3 128/8 138/7 144/23 168/4 168/21 172/22 173/18 173/24 174/17 177/11 180/16 180/18 182/21 183/1	185/7 186/1 189/1 <b>multi [1]</b> 27/17 <b>multi-hit [1]</b> 27/17 <b>multiple [6]</b> 44/17 48/5 48/5 106/6 162/12 185/25 <b>Munro [1]</b> 114/16 <b>muscle [1]</b> 98/18 <b>musculoskeletal [2]</b> 4/23 5/21 <b>must [13]</b> 16/15 28/13 34/22 42/2 50/1 84/14 84/16 84/18 89/14 95/7 107/22 136/12 138/4 <b>my [67]</b> 1/4 1/11 12/1 14/4 19/18 19/19 31/4 31/5 36/14 41/1 44/23 44/24 51/20 51/22 55/18 58/10 59/5 60/4 63/24 64/8 65/4 65/4 69/24 73/9 73/20 85/18 92/6 97/12 98/9 99/23 104/1 108/8 108/12 108/17 108/24 109/17 110/3 111/21 111/24 113/2 113/12 113/17 114/7 114/16 127/6 131/18 141/14 148/5 156/12 159/22 162/8 170/22 173/11 173/15 174/10 184/13 185/13 185/19 186/1 186/15 187/7 187/16 187/24 188/20 188/22 188/22 189/1 <b>my Lady [4]</b> 108/8 111/21 114/7 188/22 <b>myelitis [11]</b> 37/13 42/5 42/10 42/12 43/4 100/17 100/18 100/25 149/12 149/23 150/8 <b>myo [4]</b> 69/10 69/20 177/6 177/9 <b>myo/pericarditis [1]</b> 69/10 <b>myocarditis [11]</b> 92/14 93/2 93/14 93/24 95/10 95/18 96/23 99/20 177/5 177/20 178/2 <b>myocarditis/pericardi- tis [1]</b> 96/23 <b>myriad [1]</b> 129/12 <b>myself [1]</b> 184/21 <b>mêlée [1]</b> 65/17	<b>national [7]</b> 29/4 54/7 56/15 56/22 58/4 66/2 129/7 <b>nationally [1]</b> 18/4 <b>nations [3]</b> 80/2 87/5 119/21 <b>naturally [1]</b> 177/11 <b>nature [11]</b> 20/8 27/15 42/23 48/14 57/13 90/14 94/1 107/18 125/9 139/16 162/19 <b>near [1]</b> 30/20 <b>nearly [2]</b> 46/18 108/19 <b>necessarily [9]</b> 8/19 25/19 46/11 49/10 49/11 104/9 111/19 131/22 158/4 <b>necessary [1]</b> 80/20 <b>need [33]</b> 6/10 13/15 19/4 28/3 28/4 34/24 47/1 47/19 47/21 48/20 51/17 57/18 60/1 60/2 67/25 78/20 79/3 79/5 79/10 79/11 80/9 81/6 84/7 110/10 110/11 113/15 133/11 138/18 139/25 141/22 158/23 184/13 188/8 <b>needed [6]</b> 21/19 118/15 131/24 147/18 171/21 172/3 <b>needn't [7]</b> 16/24 28/16 34/12 37/18 139/18 139/18 143/16 <b>needs [12]</b> 59/13 78/25 80/4 80/15 107/8 107/15 128/1 136/7 149/20 164/21 175/13 183/24 <b>negative [1]</b> 138/3 <b>negatively [1]</b> 41/3 <b>neighbouring [1]</b> 102/22 <b>neighbours [1]</b> 68/14 <b>nervous [1]</b> 98/18 <b>network [2]</b> 35/4 170/18 <b>networks [3]</b> 170/20 170/21 173/12 <b>neuritis [1]</b> 105/1 <b>neutral [1]</b> 105/15 <b>never [6]</b> 16/13 16/14 16/16 55/6 108/20 108/22 <b>nevertheless [7]</b> 20/21 36/11 40/22 75/10 79/24 117/17 170/12 <b>new [15]</b> 14/3 14/4 15/5 20/24 23/6 72/8 87/5 90/9 125/20 134/3 173/21 174/8	176/14 179/24 185/5 <b>next [2]</b> 155/24 175/11 <b>NHS [13]</b> 53/1 56/21 56/25 111/3 111/11 111/12 111/14 156/21 156/23 160/12 170/19 170/20 173/13 <b>NICE [2]</b> 35/3 35/6 <b>night [1]</b> 146/13 <b>NIMS [2]</b> 57/3 58/4 <b>NIMS registry [1]</b> 57/3 <b>no [68]</b> 13/18 16/5 17/13 19/15 20/6 23/23 33/12 34/2 35/9 35/11 37/4 37/7 38/16 39/18 40/3 44/3 52/3 52/3 58/18 72/14 83/18 92/25 99/13 99/15 100/24 101/3 104/8 105/7 105/15 106/2 106/17 106/18 106/20 106/21 106/22 106/23 114/12 121/13 124/2 124/7 124/10 125/12 136/4 136/15 138/6 138/8 138/15 147/10 148/2 150/16 150/24 151/1 153/9 154/24 155/5 157/23 157/23 163/6 163/6 164/9 165/18 166/19 175/17 178/16 180/19 181/2 181/13 186/10 <b>nobody [3]</b> 14/19 104/11 130/1 <b>nodded [8]</b> 17/5 64/22 82/19 82/22 86/5 88/19 140/12 153/23 <b>NODES [1]</b> 60/5 <b>Nolan [2]</b> 124/20 124/21 <b>nomenclature [1]</b> 66/13 <b>nominally [2]</b> 31/11 31/20 <b>non [9]</b> 49/20 49/21 53/20 67/9 71/12 141/13 149/3 162/9 181/16 <b>non-Covid [1]</b> 181/16 <b>non-mandatory [1]</b> 71/12 <b>non-MHRA-related [1]</b> 162/9 <b>Non-randomised [1]</b> 53/20 <b>non-UK [1]</b> 141/13 <b>non-white [3]</b> 49/20 49/21 149/3 <b>none [2]</b> 41/12 41/16 <b>nor [3]</b> 29/23 81/19
----------	---	--	---	--

<b>N</b>	19/4 19/7 28/3 41/20 51/11 57/12 67/25 75/6 76/5 76/12 79/8 93/7 159/7	<b>occur [7]</b> 16/16 25/2 25/5 95/8 171/24 172/4 177/4	159/8 160/9 162/7 162/7 167/8 169/15 170/3 173/2 182/24 183/19 186/20	<b>organised [2]</b> 3/21 59/16
<b>nor...</b> [1] 181/13	<b>numerical [1]</b> 136/16	<b>occurred [1]</b> 158/19	<b>ones [11]</b> 21/5 67/3 70/5 70/7 70/9 70/10 83/6 98/12 105/24 155/19 155/20	<b>Orthopaedics [1]</b> 5/20
<b>normal [4]</b> 122/13 133/4 149/16 170/24	<b>numerous [2]</b> 75/24 79/21	<b>occurrence [2]</b> 25/1 168/21	<b>ongoing [1]</b> 13/23	<b>other [65]</b> 2/13 3/13 19/20 19/24 20/14 26/2 27/19 30/12 30/22 32/25 36/17 38/11 38/15 42/15 42/17 49/8 54/5 55/5 56/6 56/12 56/14 58/14 61/23 67/19 68/19 69/12 72/2 73/15 78/6 85/24 92/24 94/7 94/12 95/14 102/21 105/22 116/13 117/25 119/7 119/11 125/8 127/1 128/5 128/5 130/24 133/9 138/10 139/9 139/11 143/20 145/12 147/22 150/11 153/7 161/12 162/1 162/8 169/4 169/24 176/21 178/8 179/17 186/12 186/21 187/19
<b>normally [4]</b> 118/3 119/22 152/7 182/23	<b>nurse [1]</b> 44/15	<b>occurrences [1]</b> 56/2	<b>online [2]</b> 142/22 179/11	<b>others [4]</b> 11/3 18/16 47/22 165/7
<b>north [1]</b> 164/3	<b>O</b>	<b>occurring [7]</b> 14/21 14/22 18/22 24/15 25/7 67/20 75/17	<b>only [18]</b> 7/14 7/18 11/12 13/1 19/21 22/1 22/21 24/24 29/10 29/11 55/4 64/11 69/13 103/12 109/21 109/23 159/16 169/12	<b>otherwise [2]</b> 11/18 13/17
<b>northern [14]</b> 35/5 36/8 36/11 36/12 120/2 120/20 120/25 121/3 121/9 121/16 121/20 121/22 164/3 164/3	<b>o'clock [1]</b> 120/21	<b>occurs [2]</b> 25/4 177/11	<b>onset [1]</b> 28/9	<b>our [53]</b> 6/11 22/18 22/23 36/3 36/6 43/5 51/5 51/18 68/14 72/17 77/11 91/6 92/10 111/4 117/9 118/1 119/24 120/24 121/10 121/10 122/8 122/10 122/13 122/22 124/1 124/4 124/4 125/20 126/23 128/12 128/15 128/24 132/1 132/25 136/9 137/23 138/2 138/18 138/19 139/25 152/11 153/18 154/9 156/19 159/20 160/9 163/23 164/11 168/18 179/3 185/1 185/2 186/25
<b>nose [1]</b> 19/19	<b>object [2]</b> 31/14 31/15	<b>OCMO [1]</b> 72/21	<b>onto [1]</b> 111/4	<b>ourselves [1]</b> 66/10
<b>not [226]</b>	<b>objective [5]</b> 21/24 81/17 81/19 81/25 84/10	<b>Odogwu [4]</b> 183/4 183/5 185/7 190/14	<b>onwards [1]</b> 78/17	<b>out [40]</b> 5/9 6/16 14/13 17/14 22/3 23/6 30/25 34/25 40/9 53/2 54/14 56/10 57/25 62/3 62/12 62/12 64/12 66/19 71/16 73/15 75/25 79/23 81/14 85/9 113/7 128/22 129/4 131/7 131/21 132/9 132/22 133/19 140/21 143/19 152/2 152/15 157/4 159/13 169/18 172/25
<b>note [1]</b> 18/14	<b>objectivity [1]</b> 124/18	<b>off [2]</b> 133/18 175/5	<b>op [1]</b> 39/19	<b>outcome [9]</b> 11/8 49/8 88/4 92/20 93/18
<b>nothing [3]</b> 40/12 105/19 157/20	<b>objects [1]</b> 56/5	<b>offended [1]</b> 185/11	<b>open [3]</b> 21/23 30/18 160/11	
<b>notice [1]</b> 49/2	<b>obligation [14]</b> 43/9 43/15 52/22 60/11 60/13 61/19 62/3 84/12 117/12 139/20 139/23 141/4 164/25 165/1	<b>offer [2]</b> 186/6 186/23	<b>opened [1]</b> 116/12	
<b>noticing [1]</b> 67/23	<b>obligations [1]</b> 60/19	<b>offered [7]</b> 34/17 35/8 86/4 119/14 119/15 146/20 186/13	<b>opening [1]</b> 116/5	
<b>notification [1]</b> 102/16	<b>oblige [2]</b> 13/22 188/2	<b>Office [2]</b> 3/19 66/1	<b>OpenSAFELY [6]</b> 3/16 54/14 55/7 55/13 56/11 80/10	
<b>notify [1]</b> 70/1	<b>obliged [4]</b> 45/18 140/13 141/16 149/21	<b>officer [1]</b> 115/7	<b>operate [2]</b> 69/5 118/2	
<b>notion [3]</b> 71/4 83/24 126/7	<b>observation [1]</b> 42/2	<b>Official [2]</b> 129/14 130/3	<b>operation [5]</b> 32/1 71/15 115/15 163/19 181/1	
<b>Novavax [1]</b> 155/16	<b>observational [15]</b> 4/19 5/8 26/4 53/13 53/16 54/14 57/17 57/20 57/25 85/22 88/5 98/24 100/7 113/1 139/11	<b>officials [1]</b> 120/4	<b>operational [2]</b> 102/25 122/3	
<b>novel [2]</b> 118/13 162/21	<b>observed [4]</b> 35/15 85/23 89/3 151/19	<b>offshore [1]</b> 30/11	<b>operationally [6]</b> 31/25 117/17 117/20 118/11 123/4 123/6	
<b>November [4]</b> 2/6 145/6 145/25 155/14	<b>observes [1]</b> 76/17	<b>often [2]</b> 44/17 70/10	<b>opine [5]</b> 5/1 12/17 73/14 81/16 81/20	
<b>now [19]</b> 3/2 12/16 43/8 56/17 74/19 76/13 81/2 87/25 90/11 94/16 110/23 115/4 115/24 143/5 150/25 160/25 163/20 182/9 184/1	<b>observing [1]</b> 16/20	<b>oh [2]</b> 153/9 188/20	<b>opinion [2]</b> 1/16 91/17 39/13 65/4 68/11 68/12 74/9 78/19	
<b>nub [1]</b> 170/2	<b>obstructive [1]</b> 104/19	<b>okay [3]</b> 108/16 111/20 153/14	<b>opportunities [1]</b> 161/22	
<b>Nuffield [1]</b> 5/20	<b>obvious [2]</b> 13/24 106/6	<b>old [1]</b> 168/21	<b>opportunity [2]</b> 64/7 97/16	
<b>number [63]</b> 2/13 3/9 5/19 12/15 20/2 20/7 23/25 24/1 25/23 31/1 32/4 35/14 37/12 42/19 45/18 50/12 52/24 56/6 56/14 57/23 61/7 70/16 75/8 78/2 88/18 93/10 93/11 94/19 95/7 96/16 100/14 106/13 107/3 116/22 130/16 130/18 130/23 130/24 131/12 134/22 136/15 138/13 143/15 143/18 144/21 151/1 151/9 153/12 154/16 157/19 157/25 158/4 158/5 159/1 159/3 160/25 161/5 166/9 171/13 172/5 172/8 174/3 182/8	<b>obviously [19]</b> 5/12 24/24 26/9 42/2 49/6 57/23 74/6 75/7 94/14 113/22 143/3 144/16 145/9 145/18 154/11 154/20 156/24 161/5 175/3	<b>older [4]</b> 50/14 96/13 96/15 98/4	<b>opposed [6]</b> 70/15 99/7 100/12 137/5 141/12 167/16	
<b>number 23 [1]</b> 12/15	<b>occasion [3]</b> 146/25 150/8 165/2	<b>on [301]</b>	<b>optic [1]</b> 105/1	
<b>numbers [17]</b> 7/2 10/17 15/20 18/11	<b>occasionally [1]</b> 15/13	<b>once [6]</b> 18/10 23/5 45/2 45/4 87/21 181/4	<b>optimal [1]</b> 9/7	
	<b>occasions [7]</b> 37/14 37/15 102/15 149/22 162/12 165/21 174/3	<b>one [94]</b> 3/23 17/4 20/6 20/22 20/22 24/15 24/15 24/16 24/24 25/4 25/5 32/14 36/17 38/25 39/11 42/13 43/23 44/17 47/17 47/20 48/4 50/1 51/16 51/20 52/1 52/2 54/23 56/5 56/11 56/12 58/16 59/5 59/6 59/16 61/22 62/10 67/16 68/9 73/9 75/12 76/16 76/24 77/9 77/10 82/5 85/2 89/2 89/7 89/14 93/17 93/22 96/18 99/1 99/25 100/19 100/23 101/4 104/15 105/10 105/16 106/16 108/13 108/18 108/19 109/6 109/7 109/21 111/2 111/17 118/12 120/23 128/14 129/24 130/13 130/17 131/16 135/23 138/2 138/9 146/24 150/15 156/12 156/25	<b>or [317]</b>	
	<b>occupational [2]</b> 55/6 80/1	<b>older [4]</b> 50/14 96/13 96/15 98/4	<b>or in [1]</b> 126/21	
		<b>often [2]</b> 44/17 70/10	<b>order [10]</b> 32/6 38/17 40/9 47/20 57/12 63/22 63/25 82/10 116/17 170/1	
		<b>oh [2]</b> 153/9 188/20	<b>ordinary [1]</b> 152/16	
		<b>okay [3]</b> 108/16 111/20 153/14	<b>ordained [1]</b> 175/14	
		<b>old [1]</b> 168/21	<b>organisations [5]</b> 62/23 112/1 128/23 183/8 184/14	
		<b>older [4]</b> 50/14 96/13 96/15 98/4		
		<b>on [301]</b>		
		<b>once [6]</b> 18/10 23/5 45/2 45/4 87/21 181/4		
		<b>one [94]</b> 3/23 17/4 20/6 20/22 20/22 24/15 24/15 24/16 24/24 25/4 25/5 32/14 36/17 38/25 39/11 42/13 43/23 44/17 47/17 47/20 48/4 50/1 51/16 51/20 52/1 52/2 54/23 56/5 56/11 56/12 58/16 59/5 59/6 59/16 61/22 62/10 67/16 68/9 73/9 75/12 76/16 76/24 77/9 77/10 82/5 85/2 89/2 89/7 89/14 93/17 93/22 96/18 99/1 99/25 100/19 100/23 101/4 104/15 105/10 105/16 106/16 108/13 108/18 108/19 109/6 109/7 109/21 111/2 111/17 118/12 120/23 128/14 129/24 130/13 130/17 131/16 135/23 138/2 138/9 146/24 150/15 156/12 156/25		

<b>O</b>	148/22 149/10	<b>pages 19 [1]</b> 50/7	<b>paragraphs [3]</b> 147/7	<b>passed [2]</b> 6/21
<b>outcome... [4]</b> 156/9	<b>P</b>	<b>pages 30 [1]</b> 92/12	175/1 175/11	154/11
157/12 157/22 180/24	<b>package [1]</b> 145/24	<b>paid [5]</b> 9/20 28/13	<b>paragraphs 15 [1]</b>	<b>passive [4]</b> 63/3
<b>outcomes [12]</b> 11/13	<b>packaging [1]</b> 179/2	78/21 78/21 126/19	175/11	63/11 68/3 151/16
11/17 13/13 47/14	<b>page [58]</b> 16/23 28/8	<b>pain [1]</b> 110/13	<b>paragraphs 7 [1]</b>	<b>past [5]</b> 15/15 101/17
86/13 87/10 87/10	38/6 56/19 59/13 69/9	<b>pains [1]</b> 5/9	147/7	125/5 143/20 165/24
87/12 112/6 112/19	74/3 75/23 77/8 78/3	<b>palsy [3]</b> 99/24	<b>paragraphs 9 [1]</b>	<b>pathogenic [2]</b> 14/1
156/8 157/2	78/17 80/13 81/14	100/11 100/16	175/1	138/16
<b>output [1]</b> 68/14	83/7 84/3 84/8 92/4	<b>pandemic [18]</b> 3/18	<b>parcel [1]</b> 187/4	<b>patient [13]</b> 71/7 77/5
<b>outputs [1]</b> 143/3	98/14 99/24 101/16	5/4 41/3 54/5 63/15	<b>Paris [1]</b> 47/4	108/13 108/17 108/20
<b>outreach [5]</b> 163/24	103/2 103/5 103/9	67/2 82/4 108/14	<b>part [29]</b> 13/23 19/15	109/3 109/8 141/18
164/4 164/11 184/22	105/17 106/2 106/5	122/9 126/3 129/11	20/10 28/18 31/11	141/24 142/1 153/6
185/4	106/22 107/2 107/3	134/25 142/8 153/12	31/15 31/17 31/18	161/25 178/19
<b>outside [4]</b> 49/14	127/10 145/15 145/15	155/22 156/25 184/1	31/21 35/18 36/1 36/9	<b>patients [13]</b> 8/8 15/6
50/3 133/6 141/7	145/21 147/14 147/21	184/17	45/25 49/2 55/21	44/7 57/13 63/5
<b>outweigh [3]</b> 84/17	147/21 153/9 154/8	<b>Panel [1]</b> 3/19	59/12 60/10 65/21	109/19 136/9 138/21
136/12 177/1	154/15 154/19 155/5	<b>paper [9]</b> 46/1 46/2	81/10 85/24 86/2	156/10 174/22 178/20
<b>outweighed [1]</b>	155/5 155/13 156/7	54/20 55/2 109/7	116/23 125/17 131/9	178/23 187/22
137/17	156/8 157/17 157/17	109/14 109/15 163/22	139/23 165/10 165/12	<b>Patone [1]</b> 93/21
<b>outweighs [2]</b> 84/14	157/24 172/21 173/14	187/23	170/13 187/4	<b>Patrick [1]</b> 123/1
84/20	173/17 173/17 173/17	<b>papers [8]</b> 33/9 55/8	<b>participant [11]</b> 9/17	<b>pause [3]</b> 14/25
<b>outwith [1]</b> 133/6	173/19 173/19 175/1	132/18 132/19 134/12	9/23 10/17 11/22 12/9	99/18 136/22
<b>over [20]</b> 22/17 36/22	175/11 176/20	150/14 159/1 159/6	12/11 13/22 54/17	<b>paused [2]</b> 37/14
60/17 76/17 76/25	<b>page 1 [1]</b> 173/17	<b>paperwork [6]</b> 21/13	55/24 103/16 116/24	99/13
108/21 133/22 145/21	<b>Page 11 [1]</b> 84/3	23/25 33/7 146/4	<b>participants [10]</b>	<b>Paxlovid [1]</b> 180/13
145/24 146/13 147/14	<b>Page 12 [1]</b> 155/5	150/6 161/10	11/3 14/11 24/20	<b>pay [2]</b> 39/2 126/11
147/21 154/19 157/17	<b>page 13 [1]</b> 84/8	<b>paragraph [21]</b> 40/25	55/16 68/18 143/15	<b>peacetime [2]</b> 164/19
158/13 159/5 163/18	<b>page 14 [1]</b> 56/19	56/20 59/13 64/17	143/19 143/24 144/21	184/2
163/19 164/1 183/4	<b>page 16 [1]</b> 28/8	80/13 93/13 99/6	148/24	<b>peer [1]</b> 145/18
<b>overall [14]</b> 40/23	<b>page 2 [4]</b> 81/14	100/13 103/15 103/19	<b>participate [3]</b> 16/14	<b>peer-reviewed [1]</b>
42/24 50/21 61/14	145/15 172/21 173/17	127/11 147/1 147/19	45/10 160/19	145/18
68/7 69/23 69/25	<b>page 23 [1]</b> 75/23	157/23 172/21 173/14	<b>participated [1]</b> 3/23	<b>pejorative [1]</b> 61/11
75/11 89/11 96/18	<b>page 31 [1]</b> 16/23	173/18 173/19 175/13	<b>participating [1]</b>	<b>pejoratively [1]</b> 69/4
102/14 144/7 149/6	<b>page 32 [2]</b> 38/6 92/4	177/3 183/14	184/15	<b>pelvic [1]</b> 125/16
157/25	<b>Page 37 [1]</b> 156/7	<b>paragraph 10 [1]</b>	<b>participation [3]</b>	<b>people [98]</b> 6/16 8/15
<b>overarching [1]</b>	<b>page 38 [1]</b> 157/17	147/19	74/17 128/13 184/18	8/17 10/5 11/19 13/20
146/19	<b>page 4 [2]</b> 175/1	<b>paragraph 12 [1]</b>	<b>particular [49]</b> 7/10	14/4 14/18 15/7 15/11
<b>overlap [2]</b> 62/13	176/20	127/11	18/13 18/21 26/7	15/11 15/17 15/17
71/16	<b>Page 41 [1]</b> 98/14	<b>paragraph 16 [1]</b>	33/17 35/8 40/20	15/18 19/1 19/3 19/21
<b>overlaps [1]</b> 7/25	<b>page 44 [1]</b> 99/24	175/13	47/20 59/17 60/23	22/5 22/8 25/23 27/9
<b>overly [1]</b> 78/18	<b>Page 48 [1]</b> 101/16	<b>paragraph 2 [1]</b>	62/16 65/13 65/20	28/4 32/16 32/25
<b>oversight [1]</b> 58/23	<b>page 5 [2]</b> 147/21	172/21	66/16 67/23 67/24	33/15 35/14 47/2
<b>overspeaking [11]</b>	154/15	<b>paragraph 3 [2]</b>	78/7 78/19 82/16	47/20 47/24 48/10
14/1 16/12 21/12	<b>page 50 [1]</b> 103/2	173/14 173/19	83/15 85/17 93/17	50/12 51/4 53/10
48/24 49/22 67/4	<b>page 51 [1]</b> 103/5	<b>paragraph 3.16 [1]</b>	93/21 95/17 95/18	54/24 55/12 57/5 63/4
105/17 105/20 124/7	<b>page 53 [1]</b> 103/9	40/25	105/4 109/23 112/12	63/15 63/20 63/21
142/24 146/6	<b>page 55 [1]</b> 105/17	<b>paragraph 3.17 [1]</b>	114/20 116/15 116/25	63/23 68/19 71/13
<b>overview [2]</b> 32/12	<b>page 6 [3]</b> 155/5	64/17	118/10 118/10 121/20	71/17 75/5 76/4 76/17
53/8	173/14 175/11	<b>paragraph 3.19 [1]</b>	122/15 124/17 124/23	78/3 78/11 79/2 84/22
<b>overwhelmed [1]</b>	<b>page 63 [1]</b> 106/2	56/20	125/15 132/19 132/23	88/10 88/16 88/18
157/1	<b>Page 65 [1]</b> 106/5	<b>paragraph 3.6 [1]</b>	133/13 135/6 137/25	94/18 94/19 95/2
<b>overwhelmingly [1]</b>	<b>Page 67 [1]</b> 106/22	59/13	138/16 138/22 141/21	96/12 96/13 97/24
155/2	<b>page 68 [2]</b> 74/3	<b>paragraph 374 [1]</b>	155/11 162/20 162/22	98/2 98/11 99/11
<b>owe [1]</b> 188/21	107/2	183/14	<b>particularly [11]</b> 8/15	110/9 112/3 112/9
<b>own [10]</b> 2/12 31/4	<b>page 7 [1]</b> 127/10	<b>paragraph 5.119 [2]</b>	9/12 10/21 30/15	112/14 112/18 113/5
31/5 35/25 62/20	<b>page 70 [2]</b> 80/13	103/15 103/19	71/13 85/25 101/9	118/13 128/5 135/18
77/11 109/18 120/24	107/3	<b>paragraph 5.16 [1]</b>	134/2 155/23 156/18	136/18 138/24 144/25
147/10 169/25	<b>page 74 [1]</b> 78/3	93/13	163/12	150/21 159/16 160/7
<b>Oxford [6]</b> 5/14 5/21	<b>page 76 [1]</b> 78/17	<b>Paragraph 5.60 [1]</b>	<b>partly [1]</b> 94/4	160/15 160/18 160/20
12/25 54/19 148/22	<b>page 8 [1]</b> 83/7	99/6	<b>parts [3]</b> 5/23 125/6	163/8 163/11 164/4
149/10	<b>pages [5]</b> 50/7 73/13	<b>Paragraph 5.67 [1]</b>	129/2	164/8 169/4 169/10
<b>Oxford-AstraZeneca</b>	83/14 92/12 104/16	100/13	<b>party [1]</b> 2/23	172/8 175/19 177/4
<b>[4]</b> 5/14 12/25	<b>pages 15 [1]</b> 73/13	<b>paragraph 6 [1]</b>	<b>PASS [4]</b> 59/15 59/19	177/12 178/10 179/17
		173/18	84/7 107/12	182/22 183/23 186/13

<b>P</b>	<b>pharmacists [1]</b> 120/3	77/24 109/19 142/17 142/20 175/12	48/21 50/1 50/22 57/25 64/2 67/21 79/8 85/12 85/17 85/20 85/24 89/6 89/7 91/4 97/16 112/18 131/7 131/15 138/18 142/4 144/16 149/5 152/7 158/12 171/24 177/12	2/19
<b>people... [2]</b> 186/22 188/18	<b>pharmacoepidemiologically [1]</b> 81/21	<b>piles [1]</b> 46/1	<b>populations [6]</b> 4/11 50/14 65/21 73/25 98/4 182/17	<b>post-licensing [2]</b> 115/9 115/18
<b>people's [1]</b> 89/9	<b>pharmacoepidemiology [4]</b> 3/8 4/6 4/7 4/13	<b>pillar [5]</b> 65/5 65/19 65/22 66/4 66/4	<b>Portsmouth [1]</b> 79/17	<b>post-marketing [3]</b> 28/14 107/16 112/21
<b>per [4]</b> 96/11 96/14 96/14 102/1	<b>pharmacovigilance [7]</b> 112/4 112/10 112/14 112/23 115/20 151/18 181/1	<b>pillars [6]</b> 52/20 61/21 62/5 151/10 151/12 159/8	<b>position [18]</b> 30/10 48/16 53/19 72/10 82/2 82/21 84/4 116/20 118/21 157/10 160/11 161/2 161/19 167/23 167/24 168/2 172/18 179/6	<b>potency [2]</b> 129/23 130/15
<b>perfectly [1]</b> 136/5	<b>pharmacy [2]</b> 142/22 188/3	<b>place [19]</b> 18/25 53/14 56/9 66/11 68/3 87/19 88/8 93/5 107/6 118/10 119/9 120/22 125/22 125/23 146/1 149/2 151/9 153/2 187/21	<b>positions [1]</b> 170/1	<b>potential [6]</b> 41/12 50/13 123/21 125/18 132/13 177/14
<b>perform [1]</b> 127/5	<b>phase [39]</b> 7/21 8/1 8/12 8/13 8/21 8/22 9/4 9/8 9/16 10/2 10/14 10/18 12/17 13/1 13/9 13/13 18/15 18/20 26/16 26/18 26/21 44/2 44/3 44/6 44/25 45/10 50/17 50/19 52/13 66/9 66/11 66/14 67/2 74/12 74/24 85/4 122/9 143/17 148/24	<b>placebo [5]</b> 11/3 11/23 12/6 14/5 16/11	<b>positive [1]</b> 136/11	<b>potentially [9]</b> 9/6 22/9 42/15 64/12 87/16 94/6 95/1 104/5 112/17
<b>performance [2]</b> 112/11 128/21	<b>phase I [3]</b> 8/12 8/13 148/24	<b>placed [3]</b> 16/19 34/13 67/14	<b>possession [2]</b> 43/10 61/16	<b>power [3]</b> 118/22 120/10 120/10
<b>perhaps [30]</b> 1/20 9/18 10/20 12/2 25/8 27/19 28/6 42/11 46/11 51/16 70/14 78/20 104/17 107/17 111/13 117/9 124/25 129/12 130/11 137/8 138/12 138/24 139/3 141/17 141/24 162/1 162/15 164/20 167/16 179/13	<b>phase II [5]</b> 8/21 8/22 9/4 9/8 9/16	<b>plain [3]</b> 37/10 161/3 182/10	<b>possibilities [1]</b> 7/12	<b>powered [1]</b> 78/23
<b>peri [1]</b> 178/1	<b>phase III [19]</b> 10/2 10/14 12/17 13/1 13/9 13/13 18/15 18/20 26/16 26/18 26/21 44/3 44/6 45/10 50/17 50/19 52/13 85/4 143/17	<b>plainly [2]</b> 19/12 126/11	<b>possibility [8]</b> 10/12 16/20 62/1 93/7 95/9 105/12 166/5 171/8	<b>powers [2]</b> 31/24 32/1
<b>pericarditis [11]</b> 69/10 69/20 92/14 93/2 93/24 95/18 96/23 177/5 177/6 177/10 177/20	<b>phase IV [9]</b> 8/1 44/2 44/25 66/9 66/11 66/14 67/2 74/12 74/24	<b>plane [1]</b> 163/2	<b>possible [23]</b> 26/3 44/21 48/18 54/5 57/3 59/3 59/11 67/23 71/3 71/8 93/10 108/23 130/12 142/14 149/11 151/14 156/7 161/23 167/22 168/2 176/16 177/9 188/16	<b>practical [2]</b> 18/18 111/15
<b>period [9]</b> 36/4 36/9 58/18 83/5 158/13 170/6 171/7 171/10 171/14	<b>phases I [2]</b> 74/5 139/17	<b>plans [2]</b> 45/22 61/2	<b>possibly [5]</b> 21/18 63/2 87/15 125/10 173/25	<b>practicalities [1]</b> 34/1
<b>periodic [3]</b> 45/20 60/24 140/14	<b>PhD [1]</b> 5/5	<b>platelets [2]</b> 166/1 171/19	<b>post [39]</b> 2/19 8/2 8/6 19/19 23/2 23/10 23/11 28/2 28/14 28/14 34/24 43/12 45/24 52/21 57/10 57/11 57/16 59/15 60/25 66/11 67/6 68/7 74/11 74/14 74/19 79/7 86/20 101/23 107/16 112/21 113/1 115/9 115/18 140/15 141/22 151/11 156/18 178/13 178/14	<b>practicality [1]</b> 111/16
<b>permission [4]</b> 110/22 120/12 133/15 145/16	<b>PHE [3]</b> 142/7 142/24 143/5	<b>play [2]</b> 126/2 164/6	<b>pre [16]</b> 7/4 7/22 23/2 27/22 45/10 45/19 52/13 57/8 57/15 60/22 65/8 139/8 146/20 147/5 147/6 147/16	<b>practice [10]</b> 4/22 10/9 54/4 56/8 57/17 117/20 125/21 134/10 165/11 170/24
<b>permits [1]</b> 179/2	<b>phone [2]</b> 109/11 163/22	<b>please [31]</b> 1/5 1/24 2/1 6/8 8/11 29/14 31/3 50/6 52/4 54/13 56/20 68/19 73/15 75/1 92/4 103/15 108/13 114/14 114/25 127/8 134/7 139/19 145/5 153/1 154/5 157/17 157/24 159/11 171/5 173/14 189/4	<b>pre-authorisation [7]</b> 7/22 23/2 45/10 45/19 57/8 57/15 60/22	<b>practices [1]</b> 43/25
<b>permitted [1]</b> 81/5	<b>phones [1]</b> 111/4	<b>pleased [1]</b> 116/3	<b>pre-clinical [3]</b> 7/4 139/8 147/16	<b>practised [1]</b> 4/21
<b>persistent [1]</b> 88/9	<b>phrase [5]</b> 51/7 117/9 136/2 138/8 162/19	<b>pm [6]</b> 35/18 114/4 114/6 159/24 160/1 189/5	<b>pre-defined [1]</b> 65/8	<b>pre [16]</b> 7/4 7/22 23/2 27/22 45/10 45/19 52/13 57/8 57/15 60/22 65/8 139/8 146/20 147/5 147/6 147/16
<b>persisting [1]</b> 88/9	<b>phrases [1]</b> 24/1	<b>point [40]</b> 5/9 14/2 18/9 19/12 25/1 28/24 40/18 41/11 45/5 51/14 59/12 79/6 80/12 84/9 93/9 97/12 106/6 107/7 107/12 108/25 109/12 111/18 113/13 113/18 122/4 133/8 134/21 149/21 154/20 155/2 161/16 164/18 174/23 174/24 177/2 178/20 179/4 179/14 182/19 183/22	<b>pre-emptive [1]</b> 147/6	<b>pre-existing [2]</b> 27/22 52/13
<b>person [13]</b> 14/4 25/9 25/16 27/18 89/17 122/21 125/1 129/24 138/14 153/5 155/10 163/5 186/7	<b>physics [1]</b> 2/18	<b>pm [6]</b> 35/18 114/4 114/6 159/24 160/1 189/5	<b>pre-existence [1]</b> 177/19	<b>precautionary [1]</b> 177/19
<b>persons [3]</b> 71/18 78/4 82/11	<b>pick [1]</b> 107/4	<b>point [40]</b> 5/9 14/2 18/9 19/12 25/1 28/24 40/18 41/11 45/5 51/14 59/12 79/6 80/12 84/9 93/9 97/12 106/6 107/7 107/12 108/25 109/12 111/18 113/13 113/18 122/4 133/8 134/21 149/21 154/20 155/2 161/16 164/18 174/23 174/24 177/2 178/20 179/4 179/14 182/19 183/22	<b>preceding [1]</b> 23/17	<b>precise [5]</b> 18/12 125/25 126/4 174/11 175/21
<b>perspective [2]</b> 136/8 171/12	<b>picked [1]</b> 62/8	<b>points [4]</b> 51/20 68/18 68/20 70/14	<b>precisely [3]</b> 9/10 113/8 150/7	<b>predecessor [2]</b> 128/20 128/23
<b>pertinent [1]</b> 135/20	<b>picking [1]</b> 171/17	<b>policies [1]</b> 123/23	<b>pregnancy [2]</b> 106/17 106/19	<b>predict [1]</b> 21/4
<b>Pfizer [17]</b> 12/25 23/15 36/18 66/17 69/1 74/25 79/16 83/16 92/16 100/4 140/23 143/24 145/3 145/11 148/2 148/13 177/21	<b>picture [3]</b> 171/17 171/20 174/2	<b>policy [2]</b> 124/2 124/4	<b>pregnant [8]</b> 46/12 49/6 50/16 85/25 86/8 113/6 176/24 182/17	<b>premier [2]</b> 32/15
<b>pharmaceutical [4]</b> 124/3 124/13 126/8 178/11	<b>piece [2]</b> 120/17 121/7	<b>poor [1]</b> 87/10		
<b>pharmacist [1]</b> 12/14	<b>pieces [2]</b> 59/2 59/5	<b>population [31]</b> 4/11 4/15 10/11 46/10 48/1		
	<b>PIL [7]</b> 77/9 77/21			

<b>P</b>	<b>Principles [2]</b> 124/20 124/21	30/21 32/24 67/18 115/11 116/11 119/25 132/6 132/10 144/2 151/9	113/13 130/10 143/14 143/15 150/25 152/20 159/12 190/3 190/4	180/20
<b>premier...</b> [1] 32/19	<b>printout [1]</b> 154/10		<b>Professor Alhambra</b> [1] 81/5	<b>proportion [6]</b> 51/4 51/12 71/18 96/15 144/24 159/16
<b>premise [2]</b> 9/8 112/7	<b>prior [5]</b> 36/3 36/19 120/20 143/20 185/25	<b>procurement [2]</b> 119/16 186/12	<b>Professor Chris [1]</b> 15/16	<b>proportions [1]</b> 50/21
<b>premised [1]</b> 179/21	<b>prioritisation [4]</b> 88/15 97/19 166/13 168/18	<b>procuring [1]</b> 186/3	<b>Professor Daniel [4]</b> 1/6 1/9 2/2 190/4	<b>proposal [1]</b> 111/8
<b>prepared [3]</b> 146/3 159/14 159/16	<b>prioritise [2]</b> 98/1 105/24	<b>produce [9]</b> 6/19 38/24 45/18 60/12 64/20 141/5 141/16 142/11 146/2	<b>Professor Evans [30]</b> 1/23 2/5 2/17 6/8 41/19 43/7 51/15 52/9 60/13 61/20 67/17 68/17 74/3 76/1 77/1 78/17 80/25 83/22 84/9 106/8 107/8 107/17 108/6 108/9 113/13 130/10 143/15 150/25 152/20 159/12	<b>proposals [1]</b> 125/20
<b>preparedness [2]</b> 122/10 126/25	<b>privacy [2]</b> 80/9 80/9	<b>produced [12]</b> 33/10 55/7 55/11 77/6 131/8 131/15 133/22 142/9 145/19 146/4 173/21 176/6	<b>Professor Evans' [3]</b> 81/13 84/1 95/5	<b>propose [2]</b> 1/12 116/10
<b>presciently [1]</b> 129/9	<b>privacy-preserving</b> [1] 80/9	<b>producing [4]</b> 10/8 20/4 53/17 55/8	<b>Professor</b> <b>Prieto-Alhambra [15]</b> 1/16 2/1 2/7 4/5 17/16 40/18 62/24 64/17 68/11 73/13 75/23 80/11 81/2 92/9 143/14	<b>proposed [2]</b> 11/2 11/10
<b>prescriptively [1]</b> 78/19	<b>private [2]</b> 139/10 173/1	<b>product [31]</b> 2/11 7/5 7/11 7/15 18/13 22/12 22/15 23/5 23/8 24/11 30/8 33/25 35/8 39/4 43/11 43/19 45/1 46/11 77/7 129/4 131/25 135/13 136/4 139/15 140/6 140/17 141/19 142/17 143/8 164/22 175/13	<b>Prieto-Alhambra's</b> [1] 1/18	<b>proposition [6]</b> 24/6 43/2 82/15 93/18 127/25 178/15
<b>presence [4]</b> 16/17 17/9 25/18 58/22	<b>privy [1]</b> 72/22	<b>production [1]</b> 5/13	<b>Professor Stephen</b> <b>Evans [3]</b> 1/5 1/8 190/3	<b>prospective [2]</b> 137/15 140/4
<b>present [3]</b> 16/8 16/15 125/10	<b>proactive [1]</b> 65/20	<b>products [17]</b> 6/25 17/20 28/25 32/21 32/22 77/19 79/1 115/3 115/25 117/8 117/10 117/11 118/13 122/24 124/13 134/3 135/21	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>protect [3]</b> 87/12 88/1 138/17
<b>presentation [1]</b> 139/25	<b>probability [2]</b> 11/5 25/3	<b>professional [9]</b> 19/7 71/1 115/1 116/4 143/10 165/11 170/5 176/25 187/25	<b>Professors [1]</b> 113/21	<b>protected [1]</b> 134/18
<b>presented [1]</b> 39/24	<b>probably [12]</b> 10/15 29/24 32/16 65/11 69/13 70/3 93/22 96/7 125/24 178/5 185/3 188/7	<b>professionals [13]</b> 2/14 63/5 70/5 70/20 71/5 71/7 71/10 127/19 165/1 165/7 165/9 170/18 173/8	<b>Professor Stephen</b> <b>Evans [3]</b> 1/5 1/8 190/3	<b>protecting [1]</b> 55/15
<b>preserving [1]</b> 80/9	<b>problem [10]</b> 13/11 15/1 47/22 49/5 68/3 82/24 82/24 91/21 95/15 104/15	<b>profusion [2]</b> 79/22 152/20	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>protection [3]</b> 88/16 88/17 137/15
<b>president [1]</b> 183/10	<b>problems [5]</b> 47/18 53/9 63/7 77/10 94/8	<b>profiles [1]</b> 179/10	<b>Professors [1]</b> 113/21	<b>protective [2]</b> 86/17 89/4
<b>press [6]</b> 77/14 161/21 161/25 167/18 176/5 179/11	<b>procedure [1]</b> 36/18	<b>profusion [2]</b> 79/22 152/20	<b>Professor Stephen</b> <b>Evans [3]</b> 1/5 1/8 190/3	<b>protocol [1]</b> 17/14
<b>pressed [1]</b> 134/24	<b>procedures [3]</b> 9/25 10/25 38/18	<b>programme [10]</b> 3/16 94/18 94/25 102/14 133/4 142/4 142/6 168/8 168/11 175/16	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>protocols [2]</b> 60/25 140/14
<b>pressure [1]</b> 44/19	<b>proceed [3]</b> 6/20 7/1 102/16	<b>progress [1]</b> 16/3	<b>Professors [1]</b> 113/21	<b>prove [1]</b> 132/7
<b>presumably [8]</b> 20/1 26/6 28/18 30/17 42/7 52/11 67/13 90/22	<b>proceeding [1]</b> 78/9	<b>prominence [1]</b> 126/6	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>proved [1]</b> 89/8
<b>presume [2]</b> 67/17 130/16	<b>proceeds [1]</b> 9/8	<b>promote [1]</b> 184/15	<b>Professors [1]</b> 113/21	<b>provide [7]</b> 13/25 20/12 32/24 53/7 60/21 140/13 174/3
<b>pretty [1]</b> 70/4	<b>process [78]</b> 6/13 6/22 7/4 16/21 17/24 19/16 20/10 21/9 23/11 23/12 24/9 29/3 29/18 29/18 30/4 30/9 30/12 30/14 30/14 31/3 32/7 37/5 37/15 37/24 38/7 38/18 38/19 38/22 39/7 39/14 39/16 39/17 39/21 40/24 44/13 46/8 53/4 53/6 53/8 55/13 58/2 59/19 61/4 64/3 66/10 68/9 71/21 118/10 128/6 131/9 131/13 131/13 131/16 131/18 131/23 139/9 141/20 145/2 145/7 146/3 146/18 146/19 148/21 149/8 149/17 160/4 164/6 164/9 168/18 174/8 174/24 178/23 178/25 180/23 182/13 182/14 187/15 187/18	<b>promoting [1]</b> 127/16	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>provided [10]</b> 5/24 38/23 39/10 53/23 62/4 66/5 103/24 108/25 109/22 118/23
<b>prevent [8]</b> 10/6 18/21 37/16 87/9 87/17 87/18 88/6 88/6	<b>process [78]</b> 6/13 6/22 7/4 16/21 17/24 19/16 20/10 21/9 23/11 23/12 24/9 29/3 29/18 29/18 30/4 30/9 30/12 30/14 30/14 31/3 32/7 37/5 37/15 37/24 38/7 38/18 38/19 38/22 39/7 39/14 39/16 39/17 39/21 40/24 44/13 46/8 53/4 53/6 53/8 55/13 58/2 59/19 61/4 64/3 66/10 68/9 71/21 118/10 128/6 131/9 131/13 131/13 131/16 131/18 131/23 139/9 141/20 145/2 145/7 146/3 146/18 146/19 148/21 149/8 149/17 160/4 164/6 164/9 168/18 174/8 174/24 178/23 178/25 180/23 182/13 182/14 187/15 187/18	<b>pronounce [1]</b> 104/24	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>provider [1]</b> 56/11
<b>prevented [3]</b> 94/7 94/15 158/21	<b>proceed [3]</b> 6/20 7/1 102/16	<b>promote [1]</b> 184/15	<b>Professors [1]</b> 113/21	<b>providers [2]</b> 54/23 56/9
<b>preventing [4]</b> 21/1 84/22 87/14 94/5	<b>proceeding [1]</b> 78/9	<b>promptly [1]</b> 177/23	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>provides [3]</b> 33/6 43/1 154/16
<b>prevention [3]</b> 88/7 88/8 181/11	<b>proceeds [1]</b> 9/8	<b>prone [1]</b> 69/6	<b>Professors [1]</b> 113/21	<b>providing [4]</b> 5/7 9/21 54/15 114/18
<b>prevents [1]</b> 94/14	<b>process [78]</b> 6/13 6/22 7/4 16/21 17/24 19/16 20/10 21/9 23/11 23/12 24/9 29/3 29/18 29/18 30/4 30/9 30/12 30/14 30/14 31/3 32/7 37/5 37/15 37/24 38/7 38/18 38/19 38/22 39/7 39/14 39/16 39/17 39/21 40/24 44/13 46/8 53/4 53/6 53/8 55/13 58/2 59/19 61/4 64/3 66/10 68/9 71/21 118/10 128/6 131/9 131/13 131/13 131/16 131/18 131/23 139/9 141/20 145/2 145/7 146/3 146/18 146/19 148/21 149/8 149/17 160/4 164/6 164/9 168/18 174/8 174/24 178/23 178/25 180/23 182/13 182/14 187/15 187/18	<b>pronounce [1]</b> 104/24	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>provision [8]</b> 2/4 35/15 45/21 46/4 62/14 114/24 118/10 184/8
<b>previous [4]</b> 42/14 98/23 101/17 143/23	<b>proceeds [1]</b> 9/8	<b>proper [6]</b> 48/22 53/7 107/23 110/11 143/18 151/1	<b>Professors [1]</b> 113/21	<b>provisions [1]</b> 155/22
<b>previously [2]</b> 73/10 179/25	<b>process [78]</b> 6/13 6/22 7/4 16/21 17/24 19/16 20/10 21/9 23/11 23/12 24/9 29/3 29/18 29/18 30/4 30/9 30/12 30/14 30/14 31/3 32/7 37/5 37/15 37/24 38/7 38/18 38/19 38/22 39/7 39/14 39/16 39/17 39/21 40/24 44/13 46/8 53/4 53/6 53/8 55/13 58/2 59/19 61/4 64/3 66/10 68/9 71/21 118/10 128/6 131/9 131/13 131/13 131/16 131/18 131/23 139/9 141/20 145/2 145/7 146/3 146/18 146/19 148/21 149/8 149/17 160/4 164/6 164/9 168/18 174/8 174/24 178/23 178/25 180/23 182/13 182/14 187/15 187/18	<b>properly [6]</b> 5/3 50/1 55/10 55/11 110/10 138/1	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>provoke [1]</b> 20/4
<b>Prieto [23]</b> 1/6 1/9 1/16 1/18 2/1 2/3 2/7 4/5 5/18 17/16 40/18 50/7 56/13 62/24 64/17 68/11 73/13 75/23 80/11 81/2 92/9 143/14 190/4	<b>processes [14]</b> 1/14 6/10 28/19 30/19	<b>prophylactic [1]</b> 137/13	<b>Professors [1]</b> 113/21	<b>pseudonymised [3]</b> 56/21 57/1 80/20
<b>Prieto-Alhambra [7]</b> 1/6 1/9 2/3 5/18 50/7 56/13 190/4		<b>prophylactically [1]</b>	<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	<b>public [63]</b> 3/21 35/9 35/24 35/25 39/22 40/8 42/25 45/6 45/9 45/12 52/14 53/18 61/8 63/4 63/12 64/2 66/12 67/6 70/1 70/4 70/7 70/8 70/14 74/4 74/8 74/10 74/17 75/19 76/13 77/5 77/12 77/13 82/13 95/15 120/14 123/20
<b>primarily [3]</b> 1/14 112/9 129/21			<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	
<b>primary [5]</b> 127/24 135/23 170/19 170/20 173/12			<b>Professors [1]</b> 113/21	
<b>principal [1]</b> 115/7			<b>Professor Stephen</b> <b>Evans' [1]</b> 1/13	
<b>principle [3]</b> 13/7 16/6 126/16			<b>Professors [1]</b> 113/21	

<b>P</b>	76/3 76/3 76/6 78/25 83/8 83/12 85/3 88/4 88/21 89/24 91/23 91/24 91/25 92/15 93/22 96/2 96/19 96/22 97/3 98/20 98/24 99/9 100/6 100/7 101/7 101/9 101/13 103/3 103/6 103/10 103/12 106/2 106/20 106/22 117/7 117/22 127/14 132/14 132/23 135/10 147/16 148/18 181/3	<b>random [1]</b> 11/2 <b>randomisation [1]</b> 11/1 <b>randomise [2]</b> 79/15 79/16 <b>randomised [26]</b> 4/20 10/25 11/15 13/2 16/25 17/11 25/22 26/2 27/25 47/23 53/20 53/21 57/15 57/20 66/15 66/15 66/21 67/3 67/11 74/19 79/5 79/9 79/13 79/18 107/18 152/21 <b>randomising [1]</b> 15/5 <b>range [5]</b> 7/11 9/6 9/7 33/21 144/2 <b>rankings [1]</b> 32/11 <b>rapid [9]</b> 28/9 60/7 65/6 65/10 80/15 151/18 151/21 151/25 180/21 <b>RAPID C-19 [1]</b> 180/21 <b>rapidly [1]</b> 65/12 <b>rare [49]</b> 14/10 16/15 24/12 24/12 24/13 24/15 24/16 24/17 24/18 24/18 24/19 24/21 24/22 27/24 28/11 41/17 72/18 75/8 75/9 82/11 92/21 92/21 92/24 95/9 95/25 96/9 96/16 97/4 98/25 98/25 98/25 99/2 99/24 100/1 100/20 100/20 100/22 100/22 101/24 101/24 102/1 103/5 104/10 110/9 151/3 151/3 151/4 176/17 177/19 <b>rarely [5]</b> 46/20 46/21 100/1 171/9 171/25 <b>rarity [2]</b> 51/2 51/9 <b>rash [1]</b> 146/14 <b>rate [10]</b> 14/22 26/17 26/19 40/6 66/2 71/11 100/23 138/23 168/20 178/5 <b>rates [5]</b> 55/1 75/11 76/12 76/13 152/11 <b>rather [19]</b> 4/19 9/15 10/7 29/18 29/19 30/1 33/2 34/21 38/23 39/10 51/15 66/20 88/17 97/8 107/13 116/19 131/8 165/12 178/8 <b>ratio [1]</b> 149/4 <b>reach [11]</b> 24/25 44/18 68/6 93/25 103/21 149/22 161/7 167/23 168/2 171/14 179/9	<b>reached [9]</b> 21/8 42/8 73/3 73/5 83/9 100/24 162/10 172/19 178/22 <b>reaction [15]</b> 12/3 27/5 38/2 38/3 44/14 72/7 103/9 108/10 140/10 153/6 153/7 155/9 185/15 186/20 186/24 <b>reactions [15]</b> 11/24 24/3 24/3 24/4 26/17 26/21 26/24 27/2 27/24 47/15 70/21 70/24 72/8 106/11 111/10 <b>reactivation [1]</b> 104/20 <b>reactogenicity [5]</b> 26/8 26/9 26/24 70/15 153/25 <b>reactogenicity-type [2]</b> 26/24 153/25 <b>read [3]</b> 90/19 108/20 109/19 <b>reader [1]</b> 2/20 <b>readiness [1]</b> 151/15 <b>ready [2]</b> 81/7 170/10 <b>real [17]</b> 11/25 12/15 13/8 13/25 19/5 23/8 40/7 44/7 44/7 48/15 53/25 61/8 85/13 86/20 106/10 107/9 151/21 <b>real-world [6]</b> 23/8 53/25 85/13 86/20 106/10 151/21 <b>realise [3]</b> 43/23 62/2 85/19 <b>reality [14]</b> 4/16 21/1 40/1 49/11 53/19 58/24 63/23 68/13 82/21 85/14 85/15 119/5 121/13 141/11 <b>really [17]</b> 7/8 7/12 8/18 43/24 44/14 47/19 65/1 85/3 89/12 113/21 122/17 122/18 152/10 175/25 182/18 182/24 184/2 <b>realtime [2]</b> 161/22 161/23 <b>reason [1]</b> 125/19 <b>reasonable [2]</b> 66/5 149/25 <b>reasonably [1]</b> 167/15 <b>reasons [6]</b> 46/19 47/9 48/4 169/5 169/15 180/19 <b>recall [3]</b> 12/16 69/10 100/17 <b>receipt [3]</b> 38/18 40/22 45/1 <b>receive [9]</b> 45/14	71/6 73/14 130/1 138/14 144/11 155/18 160/22 165/19 <b>received [7]</b> 41/6 41/8 109/3 145/24 153/11 155/15 156/10 <b>receives [2]</b> 25/9 158/15 <b>receiving [7]</b> 12/6 12/11 146/12 166/7 182/21 187/20 187/20 <b>recent [2]</b> 10/21 76/24 <b>recently [4]</b> 86/18 116/1 133/12 165/4 <b>recipients [2]</b> 153/17 173/9 <b>recognise [1]</b> 154/14 <b>recognised [1]</b> 94/16 <b>recollection [2]</b> 63/24 174/10 <b>recommended [1]</b> 37/16 <b>recommend [2]</b> 80/19 180/21 <b>recommendation [3]</b> 97/13 113/2 113/3 <b>recommendations [9]</b> 58/10 69/24 78/17 104/4 107/3 107/25 182/8 182/9 184/5 <b>record [3]</b> 1/23 19/23 28/8 <b>records [22]</b> 53/1 53/1 54/1 54/5 54/8 54/23 55/4 55/4 55/5 55/7 56/21 57/1 58/1 63/7 63/9 64/13 65/12 65/14 65/25 80/1 80/2 85/22 <b>recovered [1]</b> 126/19 <b>recovery [2]</b> 126/15 182/4 <b>recruit [2]</b> 14/3 18/10 <b>recruited [1]</b> 44/4 <b>recruiting [1]</b> 27/10 <b>recruitment [1]</b> 13/15 <b>reddening [3]</b> 25/11 26/10 153/21 <b>reduce [1]</b> 51/18 <b>reduced [2]</b> 75/13 90/7 <b>reducing [1]</b> 90/4 <b>reduction [1]</b> 76/19 <b>refer [14]</b> 10/23 14/14 15/21 16/24 18/8 56/7 58/15 93/17 103/18 107/5 137/19 161/11 171/3 176/15 <b>reference [8]</b> 24/14 41/5 80/14 128/1 145/20 147/7 155/13 173/15
<b>public... [27]</b> 126/7 127/18 129/22 136/9 137/14 139/10 142/1 151/23 153/17 156/11 159/14 160/12 161/8 161/15 162/2 162/5 162/10 164/17 169/17 169/25 170/4 170/14 175/14 175/15 175/17 175/20 179/9 <b>publication [1]</b> 179/10 <b>publications [2]</b> 83/4 102/16 <b>publicity [2]</b> 186/17 186/18 <b>publicly [3]</b> 21/10 74/6 106/13 <b>publicly-reported [1]</b> 106/13 <b>publish [4]</b> 142/5 146/24 153/13 170/8 <b>publish it [1]</b> 170/8 <b>published [8]</b> 6/4 54/21 86/15 90/19 104/8 105/6 145/18 178/12 <b>PubMeds [1]</b> 104/2 <b>pulmonary [1]</b> 104/19 <b>purchase [4]</b> 119/8 180/19 180/22 181/2 <b>purchased [1]</b> 180/24 <b>purity [2]</b> 129/23 130/15 <b>purpose [6]</b> 7/3 7/7 19/15 24/11 135/9 181/23 <b>purposes [4]</b> 3/14 9/12 33/24 120/7 <b>put [18]</b> 24/21 34/7 51/15 56/8 60/19 63/15 79/2 115/11 118/9 119/8 125/22 125/23 136/16 146/1 166/22 170/14 177/15 187/13 <b>puts [2]</b> 93/9 142/20 <b>putting [2]</b> 37/22 129/18	<b>quantify [1]</b> 188/8 <b>quarters [1]</b> 178/11 <b>query [1]</b> 114/21 <b>question [26]</b> 9/9 14/3 31/5 44/25 48/13 51/23 67/16 75/3 79/20 84/6 108/15 108/24 110/23 110/25 113/12 118/15 161/4 162/8 173/11 175/17 182/2 183/19 184/13 186/1 187/8 187/13 <b>questions [33]</b> 1/10 80/25 108/3 108/5 108/7 108/9 108/12 108/12 110/21 111/23 112/4 113/20 114/13 115/1 116/10 160/3 183/2 183/3 183/4 183/5 183/6 183/8 185/12 185/14 185/18 185/19 188/12 190/6 190/8 190/9 190/12 190/14 190/15 <b>queueing [1]</b> 161/17 <b>quick [2]</b> 104/2 145/2 <b>quickly [1]</b> 58/12 <b>quite [12]</b> 5/9 46/25 47/7 54/22 61/12 73/12 80/17 98/19 116/18 138/12 144/2 176/1	<b>R</b> <b>race [1]</b> 112/5 <b>race-related [1]</b> 112/5 <b>racial [2]</b> 48/10 144/6 <b>Raine [11]</b> 33/3 40/14 45/17 66/25 72/6 73/4 99/19 114/8 114/9 114/16 190/11 <b>raise [4]</b> 49/4 146/23 163/10 174/21 <b>raised [8]</b> 5/3 68/18 78/2 84/6 114/21 116/23 161/1 162/17 <b>raises [1]</b> 112/4 <b>raising [1]</b> 163/16 <b>ramped [1]</b> 32/4		
<b>Q</b>				
<b>QR [1]</b> 109/10 <b>qualifications [4]</b> 1/22 2/16 2/19 3/13 <b>quality [60]</b> 28/16 28/17 28/20 28/22 29/1 29/10 29/11 29/12 30/16 33/23 42/18 42/20 43/1 43/2 53/22 56/23 57/18				



<b>R</b>	28/20 32/24 35/20 36/10 37/5 40/24 41/2 67/1 84/4 90/21 107/5 115/3 120/22 121/4 122/8 122/12 122/22 123/9 126/15 127/22 128/2 129/13 133/25 142/16 161/19 165/5 178/9 179/6 182/25 186/11	180/12 <b>remember [1]</b> 50/2 <b>remind [1]</b> 66/10 <b>removed [1]</b> 181/15 <b>repeated [1]</b> 47/21 <b>repeatedly [1]</b> 10/23 <b>replicated [1]</b> 107/6 <b>report [78]</b> 1/13 1/18 3/15 5/1 5/24 5/25 6/9 10/23 14/13 16/23 18/7 28/8 35/1 37/23 38/7 40/19 40/25 44/10 44/11 50/8 51/21 52/22 52/23 56/19 59/5 59/13 60/4 68/7 68/21 70/5 70/7 70/20 70/25 71/6 71/10 73/14 73/16 73/20 75/23 77/8 78/4 78/12 80/13 81/3 81/11 81/15 83/7 90/11 92/4 92/11 97/12 98/9 104/1 108/18 111/5 111/9 113/2 125/14 140/3 140/9 141/8 152/25 153/2 153/5 154/12 156/16 157/18 158/16 159/16 160/7 160/16 160/17 160/20 163/14 165/1 165/7 183/21 186/23	<b>representative [11]</b> 16/7 48/9 48/13 48/21 49/19 49/24 50/1 122/5 122/22 149/5 182/20 <b>representatives [1]</b> 15/25 <b>represented [1]</b> 54/11 <b>repurposed [2]</b> 180/1 180/15 <b>requests [1]</b> 135/3 <b>require [5]</b> 15/15 62/21 133/14 155/20 155/20 <b>required [4]</b> 21/18 22/14 143/18 178/3 <b>requirement [6]</b> 43/16 43/17 43/18 44/9 44/20 165/13 <b>requirements [4]</b> 17/18 128/3 140/18 141/22 <b>requires [6]</b> 34/22 55/24 59/25 63/11 136/25 137/8 <b>requiring [2]</b> 173/22 175/8 <b>requisite [1]</b> 19/9 <b>research [9]</b> 55/15 56/24 66/22 104/6 127/20 131/22 133/20 185/24 188/7 <b>researched [1]</b> 157/13 <b>researchers [1]</b> 146/22 <b>resolve [3]</b> 100/2 153/25 171/17 <b>resolved [1]</b> 101/5 <b>resolving [1]</b> 152/5 <b>resources [1]</b> 66/6 <b>respect [10]</b> 11/6 18/13 30/9 33/10 37/9 41/7 49/12 78/6 126/18 143/17 <b>respectively [1]</b> 68/25 <b>respiratory [1]</b> 94/9 <b>respond [3]</b> 41/4 64/12 135/2 <b>responded [4]</b> 69/18 73/6 73/8 91/20 <b>respondents [1]</b> 108/21 <b>response [20]</b> 9/2 9/2 9/14 9/15 16/5 20/8 20/9 20/18 41/2 46/25 73/18 73/18 73/21 93/23 93/25 95/5 114/20 126/3 153/12 161/3 <b>responses [1]</b> 26/6 <b>responsibilities [2]</b>	127/24 135/24 <b>responsibility [1]</b> 117/24 <b>responsible [9]</b> 15/23 115/14 116/17 117/6 118/11 133/19 166/12 166/14 179/23 <b>result [8]</b> 25/15 37/20 39/8 110/7 131/15 163/13 167/15 188/1 <b>results [12]</b> 11/8 14/20 15/4 42/21 47/3 47/4 47/5 47/14 86/6 86/16 92/1 145/19 <b>retain [1]</b> 175/15 <b>retention [1]</b> 54/7 <b>return [2]</b> 114/2 159/23 <b>returned [1]</b> 83/1 <b>returning [1]</b> 110/19 <b>revealed [1]</b> 14/10 <b>revert [1]</b> 134/6 <b>reverted [1]</b> 120/24 <b>review [21]</b> 6/1 6/3 39/8 42/23 61/22 104/2 105/16 107/5 116/8 124/5 124/7 125/11 125/12 125/14 125/16 146/17 146/18 147/2 147/4 182/13 188/2 <b>reviewed [3]</b> 84/24 125/19 145/18 <b>Rheumatic [1]</b> 181/18 <b>rheumatoid [1]</b> 104/22 <b>rheumatology [2]</b> 4/23 5/21 <b>right [82]</b> 3/24 4/5 4/18 8/10 8/14 15/17 15/17 16/23 18/7 23/10 23/20 24/9 33/3 36/16 38/5 43/6 45/16 49/11 50/2 50/6 52/3 55/13 56/6 58/18 60/10 88/22 89/17 92/18 93/12 96/19 99/20 99/22 106/1 106/16 115/12 121/1 121/11 121/25 123/12 124/14 125/6 125/18 126/1 126/5 127/7 130/21 131/17 132/17 139/5 140/24 141/1 141/2 143/3 143/8 145/2 146/16 147/6 147/19 148/6 150/16 150/25 151/7 152/13 152/18 152/24 157/10 157/16 158/9 158/25 159/17 159/21 160/25 165/14 167/10 169/19 170/7 171/5 172/8
----------	---	---	---	--



<b>R</b>	<b>rough [2]</b> 7/3 124/9	<b>said [22]</b> 15/8 15/16	141/24	134/19
<b>right... [4]</b> 172/18	<b>roughly [4]</b> 130/9	22/12 41/21 58/13	<b>scale [13]</b> 8/23 29/14	<b>secretary [6]</b> 118/5
172/23 175/10 175/20	140/25 141/1 141/2	61/1 62/24 65/19 76/1	41/11 55/10 57/9	118/20 119/11 123/8
<b>right-hand [1]</b> 172/23	<b>route [2]</b> 142/9 143/2	83/10 83/22 96/4	67/13 76/9 82/24 86/3	173/1 173/2
<b>rightly [2]</b> 5/10 91/4	<b>routes [3]</b> 161/12	103/20 106/8 106/22	104/14 131/23 132/5	<b>section [3]</b> 3/13 35/1
<b>rigidly [1]</b> 17/14	162/8 179/8	108/21 110/12 123/21	151/2	182/8
<b>rigorous [4]</b> 123/25	<b>routine [2]</b> 57/17	134/7 135/23 143/22	<b>scale-up [1]</b> 132/5	<b>sector [2]</b> 126/16
140/18 145/22 163/3	80/19	166/3	<b>scaled [1]</b> 132/6	127/2
<b>rigorously [4]</b> 123/25	<b>Royal [2]</b> 2/23 3/12	<b>Salman [1]</b> 183/10	<b>scan [1]</b> 109/11	<b>sectorial [3]</b> 34/15
124/1 130/14 178/17	<b>rule [1]</b> 16/6	<b>same [21]</b> 11/6 11/20	<b>scenario [2]</b> 133/13	49/9 50/9
<b>rigour [3]</b> 118/14	<b>rumble [1]</b> 171/11	17/13 30/8 30/14 36/1	149/14	<b>sectors [1]</b> 46/9
146/5 146/9	<b>run [1]</b> 13/11	46/25 59/4 113/12	<b>scheme [16]</b> 64/18	<b>secure [1]</b> 127/15
<b>rise [6]</b> 23/20 47/14	<b>running [1]</b> 181/25	113/13 131/8 131/19	115/15 141/15 151/17	<b>Security [2]</b> 5/6
53/25 81/22 92/22	<b>runs [2]</b> 92/11 134/19	135/17 142/12 147/12	152/3 152/18 152/24	142/7
151/2		147/24 147/24 147/25	160/5 163/9 163/11	<b>see [37]</b> 2/12 9/3
<b>risen [1]</b> 65/17	<b>S</b>	148/21 168/8 177/23	163/15 164/13 183/9	10/7 19/20 21/13
<b>risk [46]</b> 22/16 45/21	<b>sadly [1]</b> 19/2	<b>sample [2]</b> 112/24	184/6 186/18 187/3	27/12 27/14 28/4
47/15 51/18 61/1	<b>safe [11]</b> 19/13 22/13	130/14	<b>school [7]</b> 2/22 2/25	42/13 57/4 74/21
81/25 84/11 84/12	22/13 117/11 117/13	<b>SARS [2]</b> 87/2 100/16	3/4 3/6 3/9 54/19	75/12 82/14 82/23
84/14 84/15 84/17	127/15 135/25 136/2	<b>SARS-CoV-2 [2]</b> 87/2	164/20	104/3 105/24 111/11
84/20 93/13 93/14	136/5 136/14 164/23	100/16	<b>science [2]</b> 91/7	124/22 127/9 135/4
94/10 95/6 95/19 99/6	<b>safely [3]</b> 55/14	<b>sat [2]</b> 58/18 178/13	129/7	145/15 147/7 147/14
99/10 100/11 102/13	55/22 187/4	<b>satisfactorily [1]</b>	<b>sciences [2]</b> 4/23	152/15 153/4 154/10
115/20 122/19 136/3	<b>safety [118]</b> 1/15	7/14	5/21	154/15 155/13 156/8
136/6 136/7 136/12	3/10 3/12 4/9 4/15 5/9	<b>satisfactory [2]</b>	<b>scientific [12]</b> 6/13	156/21 165/8 165/12
136/17 136/19 136/21	7/4 7/13 10/12 14/15	144/13 149/9	17/18 43/1 77/17	167/21 172/23 175/1
137/5 137/21 138/9	15/8 16/9 16/17 16/19	<b>satisfied [4]</b> 84/15	82/13 84/23 103/20	176/20 182/14
138/23 158/15 161/6	16/20 17/9 17/11	84/19 137/1 137/16	122/14 125/8 134/8	<b>seeing [2]</b> 71/7
161/24 162/16 167/4	17/25 21/23 21/23	<b>satisfy [1]</b> 106/15	145/22 163/4	158/16
174/18 176/1 176/3	21/25 22/2 22/14 23/2	<b>saved [5]</b> 76/5 76/7	<b>scientifically [1]</b> 82/3	<b>seek [4]</b> 81/16 95/16
176/8 177/19 177/25	23/3 23/11 28/21 29/9	76/22 76/24 94/17	<b>scientists [1]</b> 15/24	173/24 174/12
180/2	33/8 33/11 33/23	<b>saving [1]</b> 168/11	<b>scope [10]</b> 28/17	<b>seeking [3]</b> 126/13
<b>risk-benefit [6]</b> 51/18	34/24 35/10 39/16	<b>say [79]</b> 10/15 14/20	32/5 33/14 34/10	133/15 138/16
84/11 84/12 95/6	41/2 41/4 43/11 43/19	16/13 16/16 19/4	71/16 90/22 116/6	<b>seeks [1]</b> 156/17
102/13 158/15	43/20 45/19 45/20	20/11 20/22 23/21	116/8 118/4 187/18	<b>seem [2]</b> 79/22 87/20
<b>risks [6]</b> 107/9	45/20 45/23 47/6	24/10 25/3 26/20	<b>Scotland [5]</b> 35/4	<b>seemed [2]</b> 94/10
137/17 139/1 161/13	48/15 48/23 49/8 51/5	27/17 30/2 37/24	54/11 58/3 120/20	118/19
161/14 177/1	52/18 52/23 53/8	40/25 41/14 43/14	164/3	<b>seemingly [1]</b> 125/2
<b>robust [2]</b> 32/12	54/16 55/22 55/23	45/22 47/2 49/12 50/9	<b>Scottish [3]</b> 35/3	<b>seems [2]</b> 8/18 70/17
182/15	56/3 56/24 57/2 58/24	51/1 57/8 59/1 59/16	35/5 120/2	<b>seen [15]</b> 23/14
<b>robustness [3]</b>	59/15 60/12 60/15	60/22 62/10 63/12	<b>scour [1]</b> 103/19	23/25 24/22 33/7
123/22 137/25 168/6	60/20 60/22 60/23	68/16 68/22 70/21	<b>scoured [1]</b> 82/13	64/15 69/17 70/9
<b>rods [1]</b> 77/10	60/24 60/25 61/20	73/22 74/3 74/25 75/5	<b>screen [2]</b> 92/5 127/9	70/10 86/14 86/16
<b>rogue [1]</b> 11/17	62/7 64/19 67/15 68/7	76/11 77/9 79/5 79/16	<b>scroll [1]</b> 172/24	93/15 101/25 118/6
<b>role [6]</b> 16/17 35/9	72/12 72/22 77/3 77/4	80/12 80/14 83/18	<b>scrutinise [1]</b> 32/22	123/3 161/9
116/2 117/9 145/20	77/18 78/6 81/17	84/20 85/11 85/14	<b>scrutinised [2]</b> 9/25	<b>seizures [1]</b> 104/20
164/6	81/18 84/9 94/1 101/1	86/20 87/25 89/11	10/13	<b>self [3]</b> 87/20 96/25
<b>roles [1]</b> 123/16	107/17 115/11 115/25	93/16 93/21 96/5	<b>scrutinising [1]</b>	153/4
<b>rolled [4]</b> 23/6 30/25	116/11 117/6 117/22	103/5 103/9 106/2	32/24	<b>self-control [1]</b> 96/25
113/7 132/8	121/15 124/5 127/13	106/16 107/6 107/17	<b>scrutiny [11]</b> 10/16	<b>self-evident [2]</b> 87/20
<b>rolling [12]</b> 38/23	132/14 132/22 135/10	111/17 112/15 112/22	28/13 28/20 30/19	153/4
39/8 40/10 107/5	140/5 140/14 140/15	113/3 126/14 128/8	37/1 39/15 39/18	<b>semi [1]</b> 32/24
146/2 146/17 146/17	141/5 142/13 146/6	130/22 133/23 138/2	39/22 40/1 40/16	<b>semi-regulatory [1]</b>
147/2 147/4 174/24	147/16 148/18 149/16	140/16 154/22 157/10	146/5	32/24
174/25 182/13	150/3 151/6 151/11	157/18 157/20 162/15	<b>second [12]</b> 59/12	<b>send [3]</b> 19/19 133/5
<b>rollout [9]</b> 23/15	159/4 161/6 161/11	163/5 163/11 171/11	65/5 65/5 95/20	134/11
52/14 85/14 90/8	162/4 162/9 173/22	175/6 180/4 185/3	108/15 110/22 114/21	<b>senior [2]</b> 2/20 115/6
91/10 97/18 166/13	179/8 179/12 179/15	186/6	153/9 172/25 176/23	<b>sense [8]</b> 40/23
166/15 179/2	181/3 182/3 186/25	<b>saying [8]</b> 15/4 51/9	177/3 186/15	69/23 77/20 127/10
<b>Ronapreve [1]</b>	<b>safety-related [12]</b>	105/15 136/22 156/12	<b>second-last [1]</b>	136/11 138/3 138/5
180/13	54/16 56/3 60/12	159/14 169/7 175/21	177/3	144/20
<b>room [5]</b> 74/8 74/10	60/15 60/23 62/7	<b>says [9]</b> 12/15 16/3	<b>secondly [2]</b> 37/2	<b>sensible [2]</b> 78/8
81/9 125/1 186/16	67/15 72/22 77/18	76/24 96/11 101/25	89/16	174/20
	142/13 179/8 179/15	104/14 105/12 114/2	<b>secretariat [1]</b>	<b>sensibly [1]</b> 83/10

<b>S</b>	<b>short [3]</b> 52/6 114/5 159/25	47/7 60/9 68/12 68/16 79/19 85/23 86/24 96/22 97/3 97/7 97/9 97/11 98/22	22/6 22/6 25/11 26/6 29/11 29/14 40/23 42/20 50/13 53/10 54/10 55/4 55/10 68/24 69/4 78/5 78/11 80/17 82/20 83/11 85/19 88/16 92/22 92/24 97/25 101/14 101/15 104/7 105/2 105/6 105/6 105/9 105/9 105/14 105/24 114/25 115/17 125/5 126/6 126/21 126/23 126/24 127/1 129/2 131/5 132/18 132/18 141/3 143/23 148/24 158/11 158/25 159/5 160/3 160/18 162/17 164/12 164/24 165/6 165/24 167/14 169/3 171/7 178/10 178/10 181/17 183/4 188/7	75/1 77/17 156/17 179/17 187/25
<b>sensitive [1]</b> 16/12	<b>shortage [1]</b> 79/14	<b>similarly [1]</b> 39/8	<b>somebody [7]</b> 15/15 16/8 19/23 109/10 136/24 137/7 154/21	<b>sourced [1]</b> 126/22
<b>sent [3]</b> 132/25 133/2 159/13	<b>shorter [1]</b> 89/1	<b>simple [2]</b> 54/6 76/11	<b>someone [1]</b> 89/22	<b>sources [8]</b> 52/17 53/11 57/24 58/20 79/21 80/17 127/1 156/1
<b>Sentinel [1]</b> 60/5	<b>shortly [1]</b> 81/10	<b>simpler [1]</b> 184/8	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>South [10]</b> 48/7 49/17 49/20 49/24 140/22 143/25 144/15 144/18 149/3 149/4
<b>separate [5]</b> 65/22 119/10 123/17 135/22 160/17	<b>should [30]</b> 34/15 35/8 59/9 59/9 62/25 69/2 70/19 93/16 102/15 105/24 107/6 107/20 112/20 113/3 118/21 161/21 164/24 164/25 167/3 167/25 169/17 169/21 169/22 174/14 175/4 176/22 176/24 180/23 181/21 187/3	<b>simply [10]</b> 10/8 12/16 22/12 24/21 78/13 109/10 129/18 155/9 163/21 181/2	<b>somebody [7]</b> 15/15 16/8 19/23 109/10 136/24 137/7 154/21	<b>South Africa [2]</b> 143/25 144/15
<b>separated [1]</b> 119/16	<b>shoulder [1]</b> 104/20	<b>since [2]</b> 82/4 111/10	<b>somebody [7]</b> 15/15 16/8 19/23 109/10 136/24 137/7 154/21	<b>Southampton [3]</b> 44/4 47/2 79/16
<b>separately [1]</b> 89/19	<b>show [6]</b> 86/6 88/21 90/3 95/24 150/6 188/17	<b>single [13]</b> 13/6 17/15 30/7 39/19 77/16 82/16 111/18 125/1 130/13 130/17 130/19 157/11 179/14	<b>someone [1]</b> 89/22	<b>Spain [2]</b> 56/16 97/25
<b>separation [1]</b> 31/23	<b>show [6]</b> 86/6 88/21 90/3 95/24 150/6 188/17	<b>single-blind [1]</b> 13/6	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>SPC [2]</b> 77/20 77/25
<b>September [8]</b> 2/7 37/11 42/4 114/20 149/10 150/7 150/12 159/3	<b>showed [4]</b> 103/22 174/17 175/5 176/7	<b>Sir [2]</b> 4/3 123/1	<b>somebody [7]</b> 15/15 16/8 19/23 109/10 136/24 137/7 154/21	<b>speak [3]</b> 41/25 107/18 184/21
<b>September 2020 [2]</b> 42/4 149/10	<b>showing [2]</b> 15/4 96/20	<b>Sir Patrick [1]</b> 123/1	<b>someone [1]</b> 89/22	<b>speaking [4]</b> 41/24 98/6 128/10 157/6
<b>September 2022 [1]</b> 159/3	<b>shown [2]</b> 18/10 135/2	<b>sit [1]</b> 122/5	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>special [8]</b> 24/2 42/13 101/20 118/18 155/22 156/19 165/24 182/16
<b>series [1]</b> 172/12	<b>sic [3]</b> 2/22 152/24 177/8	<b>site [5]</b> 77/16 106/10 133/1 133/12 153/21	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>specialist [1]</b> 33/19
<b>serious [28]</b> 14/10 14/23 22/10 24/2 24/4 26/14 27/14 28/11 37/25 38/1 40/5 41/12 51/2 52/4 69/6 70/6 70/7 70/9 70/10 70/15 71/19 75/9 100/1 136/20 140/10 148/3 154/3 154/3	<b>sickle [5]</b> 112/8 112/14 112/15 112/24 113/14	<b>sites [2]</b> 132/2 133/6	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>specialities [1]</b> 135/20
<b>seriously [2]</b> 82/12 137/7	<b>sick [1]</b> 84/22	<b>sitting [3]</b> 59/3 100/21 125/1	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>specialty [1]</b> 4/8
<b>Serum [1]</b> 132/20	<b>sickness [1]</b> 84/22	<b>six [4]</b> 15/11 60/18 163/23 179/24	<b>something [32]</b> 10/13 14/15 21/23 23/21 24/10 30/17 32/9 34/20 45/21 48/24 54/13 56/7 61/21 62/2 74/3 75/2 77/8 81/18 104/14 105/12 111/7 111/14 136/18 136/20 137/19 142/11 149/18 152/15 155/8 165/2 166/1 175/7	<b>specific [13]</b> 34/24 51/4 51/5 59/25 63/8 77/17 85/12 99/17 107/16 122/24 151/24 159/4 175/4
<b>serves [1]</b> 19/15	<b>side [40]</b> 7/6 10/12 14/10 16/20 23/21 24/7 24/9 24/18 24/24 26/13 26/20 28/11 40/20 47/16 48/19 53/9 56/3 62/7 69/6 70/2 71/19 75/9 81/23 82/1 82/6 82/11 82/17 90/12 90/22 90/25 91/2 99/2 99/25 106/7 106/14 108/23 116/12 151/6 154/3 161/6	<b>six-monthly [1]</b> 60/18	<b>sometimes [3]</b> 77/22 96/3 188/3	<b>specify [1]</b> 34/21
<b>service [4]</b> 56/9 58/4 124/16 124/17	<b>signal [7]</b> 67/16 67/22 73/22 74/2 94/25 153/18 159/4	<b>size [9]</b> 9/16 12/17 13/9 18/12 29/19 30/4 32/13 143/23 158/13	<b>somewhat [2]</b> 61/4 116/4	<b>speculate [1]</b> 98/9
<b>services [2]</b> 157/6 157/14	<b>signals [4]</b> 65/3 67/22 94/1 159/5	<b>sizeable [1]</b> 143/22	<b>somewhere [2]</b> 23/14 100/21	<b>speed [3]</b> 73/7 73/18 146/19
<b>session [1]</b> 173/5	<b>significance [5]</b> 56/4 67/20 118/12 154/19 168/17	<b>sizes [2]</b> 10/17 18/8	<b>soon [1]</b> 178/17	<b>spend [2]</b> 28/16 43/8
<b>set [7]</b> 14/13 17/11 17/14 81/14 85/9 118/18 128/4	<b>significant [14]</b> 2/8 14/23 17/8 28/18 35/1 71/18 72/23 75/6 76/5 138/13 161/5 167/14 185/23 186/2	<b>skill [2]</b> 32/10 32/11	<b>sophisticated [1]</b> 67/18	<b>spent [2]</b> 5/4 124/10
<b>set-out [1]</b> 17/14	<b>significantly [1]</b> 85/16	<b>skills [1]</b> 55/25	<b>sophisticated [1]</b> 67/18	<b>sphere [2]</b> 126/7 129/16
<b>set-up [1]</b> 17/11	<b>signs [1]</b> 69/16	<b>slight [2]</b> 14/25 22/7	<b>sore [1]</b> 22/5	<b>spinal [1]</b> 149/13
<b>setting [4]</b> 128/12 133/24 169/18 174/11	<b>SII [1]</b> 132/24	<b>slightly [5]</b> 21/21 44/21 75/9 77/22 137/9	<b>sorry [10]</b> 3/5 37/25 52/1 74/15 130/22 147/2 155/5 170/12 180/7 182/3	<b>spirited [1]</b> 40/8
<b>several [1]</b> 46/2	<b>similar [18]</b> 21/17 30/21 47/3 47/4 47/5	<b>small [3]</b> 37/12 67/3 82/3	<b>sorry [10]</b> 3/5 37/25 52/1 74/15 130/22 147/2 155/5 170/12 180/7 182/3	<b>spoke [1]</b> 158/14
<b>severe [11]</b> 26/14 26/17 26/19 44/14 86/13 86/17 87/10 96/5 98/19 103/8 112/19		<b>smaller [1]</b> 88/17	<b>sort [9]</b> 7/11 15/7 26/13 62/23 65/22 65/24 83/11 125/5 153/24	<b>spoken [1]</b> 69/22
<b>severity [1]</b> 92/20		<b>Smeeth [1]</b> 54/19	<b>sort [9]</b> 7/11 15/7 26/13 62/23 65/22 65/24 83/11 125/5 153/24	<b>spring [3]</b> 73/3 73/19 102/9
<b>Sex [1]</b> 50/15		<b>SmPC [2]</b> 141/19 143/8	<b>sort [9]</b> 7/11 15/7 26/13 62/23 65/22 65/24 83/11 125/5 153/24	<b>staff [7]</b> 32/4 124/1 124/11 124/16 135/16 142/25 188/23
<b>shall [2]</b> 114/2 159/23		<b>so [212]</b>	<b>sort [9]</b> 7/11 15/7 26/13 62/23 65/22 65/24 83/11 125/5 153/24	<b>staffed [1]</b> 15/24
<b>shape [2]</b> 5/13 128/25		<b>so-called [2]</b> 9/2 66/14	<b>sorts [3]</b> 27/1 62/13 147/17	<b>stage [9]</b> 6/25 7/13 7/15 9/16 32/14 45/19 52/1 55/20 168/25
<b>shared [1]</b> 117/25		<b>soap [1]</b> 79/1	<b>sought [7]</b> 24/10 108/22 145/16 147/8 148/11 156/22 177/24	<b>stakeholders [1]</b> 184/17
<b>sharing [2]</b> 97/17 159/19		<b>social [3]</b> 77/14 118/5 126/24	<b>sought [7]</b> 24/10 108/22 145/16 147/8 148/11 156/22 177/24	<b>stand [1]</b> 32/11
<b>she [3]</b> 114/8 188/15 188/18		<b>Society [3]</b> 2/24 3/12 172/10	<b>sorts [3]</b> 27/1 62/13 147/17	<b>standard [2]</b> 10/24 32/10
<b>shingles [1]</b> 104/20		<b>soft [2]</b> 41/22 41/23	<b>sorts [3]</b> 27/1 62/13 147/17	
		<b>software [1]</b> 67/18	<b>sounds [2]</b> 61/7 111/16	
		<b>sole [1]</b> 187/25	<b>source [7]</b> 64/14 65/2	
		<b>solely [1]</b> 117/23		
		<b>solution [1]</b> 13/25		
		<b>some [82]</b> 3/18 4/25 5/4 5/6 5/23 11/2 13/5 13/6 17/3 17/17 17/18 18/15 19/21 20/14		

<b>S</b>	48/8 51/11 87/9 115/23 122/19 <b>stone [2]</b> 138/6 138/8 <b>stop [6]</b> 13/15 13/15 14/24 94/18 94/24 94/24 <b>stopped [1]</b> 99/13 <b>stops [1]</b> 27/9 <b>straightforward [2]</b> 20/17 163/17 <b>straightforwardly [1]</b> 59/20 <b>strategy [3]</b> 65/15 89/12 182/16 <b>stratified [1]</b> 176/8 <b>strengthen [2]</b> 125/20 144/10 <b>stress [1]</b> 163/18 <b>strong [3]</b> 11/24 87/8 179/13 <b>struck [2]</b> 137/10 138/25 <b>structure [2]</b> 35/16 36/10 <b>structured [1]</b> 60/6 <b>structures [5]</b> 17/8 18/4 35/6 84/4 116/11 <b>student [1]</b> 5/5 <b>students [1]</b> 41/24 <b>studied [3]</b> 44/5 87/24 89/23 <b>studies [72]</b> 5/8 5/10 5/11 6/15 6/24 6/25 23/2 23/3 26/4 34/22 34/24 42/20 53/13 53/16 53/20 53/22 56/14 57/25 59/14 59/15 59/20 60/3 60/8 62/11 62/12 62/13 62/16 62/19 62/21 62/25 63/8 67/7 74/4 74/5 74/11 74/15 75/12 75/15 75/24 76/10 76/11 76/16 76/23 79/8 84/7 85/22 88/5 88/5 91/24 91/25 92/25 93/6 93/22 96/24 96/25 98/24 100/7 100/15 101/13 106/3 107/12 107/16 109/2 109/25 112/21 113/1 113/1 139/12 140/15 151/24 152/22 178/16 <b>study [23]</b> 4/9 7/21 27/25 32/22 54/14 56/16 60/25 60/25 65/23 79/17 93/17 93/21 99/9 99/14 105/9 105/10 105/15 106/23 108/19 108/22 113/9 139/11 140/15 <b>subgroup [2]</b> 85/17 112/12	<b>subgroups [4]</b> 49/4 85/12 85/20 95/18 <b>subject [10]</b> 3/14 18/7 27/20 34/16 39/22 53/20 69/23 75/1 122/3 124/16 <b>subjecting [1]</b> 13/17 <b>submission [8]</b> 139/24 145/6 166/23 172/18 172/19 172/25 176/15 177/15 <b>submit [1]</b> 39/4 <b>submitted [2]</b> 46/2 167/20 <b>subsequently [5]</b> 41/13 54/21 55/3 86/2 115/23 <b>substance [5]</b> 37/3 68/13 69/19 92/11 121/14 <b>substantial [1]</b> 6/2 <b>subtly [1]</b> 14/2 <b>successful [2]</b> 131/24 132/8 <b>successfully [1]</b> 6/21 <b>succinctly [2]</b> 4/7 68/20 <b>succour [1]</b> 82/20 <b>such [31]</b> 8/1 14/22 16/10 33/17 46/12 47/25 53/22 56/1 56/12 60/8 66/16 66/23 67/2 69/23 110/9 120/13 120/13 126/25 127/4 149/14 151/2 153/21 166/4 168/25 169/8 176/2 180/25 182/16 183/25 184/5 184/16 <b>suffer [1]</b> 186/20 <b>suffered [4]</b> 71/18 82/11 185/16 186/7 <b>sufferers [1]</b> 112/24 <b>suffering [3]</b> 27/18 136/24 136/25 <b>sufficient [5]</b> 18/11 19/4 40/6 58/8 103/22 <b>sufficiently [2]</b> 78/23 163/9 <b>suggest [19]</b> 68/24 70/18 76/4 84/25 92/23 92/25 93/12 100/2 100/15 103/12 103/13 105/2 105/7 105/21 106/3 106/18 107/20 110/23 163/8 <b>suggested [7]</b> 85/22 111/3 131/5 160/6 162/25 164/24 171/7 <b>suggesting [15]</b> 76/19 87/9 88/5 92/15 96/2 97/4 98/20 99/10 101/8 101/10 103/3 103/6 103/10 106/20	177/17 <b>suggestion [4]</b> 70/19 126/6 131/11 145/10 <b>suggests [7]</b> 14/22 76/7 87/3 90/6 91/14 91/15 102/5 <b>suitable [1]</b> 179/4 <b>summaries [3]</b> 92/8 92/10 153/13 <b>summarised [1]</b> 175/2 <b>summary [13]</b> 77/7 82/8 82/25 92/12 105/17 141/18 142/17 143/8 154/6 170/25 171/2 175/12 179/11 <b>superb [1]</b> 188/19 <b>supervising [1]</b> 5/4 <b>supplementary [1]</b> 187/24 <b>supply [8]</b> 31/6 127/15 148/19 179/24 180/3 180/5 180/6 181/10 <b>support [4]</b> 82/15 106/18 111/8 151/22 <b>supported [1]</b> 66/21 <b>supporting [3]</b> 66/22 127/20 185/24 <b>suppose [2]</b> 25/14 39/24 <b>supposing [1]</b> 149/25 <b>sure [20]</b> 2/15 20/25 21/19 39/4 47/19 47/21 58/11 59/9 62/7 104/23 110/15 113/4 117/24 134/19 154/13 158/10 168/13 175/18 185/9 186/22 <b>surgery [1]</b> 142/21 <b>surveillance [6]</b> 28/14 68/4 68/8 147/16 151/11 182/16 <b>SUSAR [1]</b> 37/24 <b>SUSARs [4]</b> 38/13 148/2 150/12 150/23 <b>suspect [1]</b> 156/13 <b>suspected [19]</b> 24/4 37/25 48/19 70/20 70/24 100/18 140/10 148/2 153/5 153/7 154/3 154/21 155/10 155/16 158/6 163/14 165/3 165/20 173/4 <b>suspended [3]</b> 149/11 149/17 166/10 <b>suspension [1]</b> 166/16 <b>suspensions [1]</b> 150/11 <b>suspicion [2]</b> 70/25 71/2 <b>swab [1]</b> 19/18	<b>swift [1]</b> 64/20 <b>swoop [2]</b> 38/25 39/11 <b>sworn [6]</b> 1/7 1/8 114/8 114/9 190/3 190/11 <b>sympathise [1]</b> 61/10 <b>sympathy [1]</b> 110/3 <b>symptomatic [2]</b> 87/6 87/15 <b>symptoms [5]</b> 12/3 26/11 88/9 106/11 153/22 <b>syndrome [9]</b> 73/2 95/23 98/14 98/15 98/16 99/14 99/16 103/2 165/15 <b>system [65]</b> 20/6 20/22 35/20 38/24 41/2 54/4 54/7 54/9 56/1 56/22 57/23 58/5 58/6 58/24 59/14 60/9 61/23 61/24 63/3 63/10 63/11 63/17 64/6 64/9 64/11 64/15 64/24 65/1 66/22 68/2 68/15 69/22 70/1 70/21 71/15 71/22 72/8 77/3 77/9 78/5 78/13 80/5 93/23 97/19 98/18 111/13 118/24 118/25 119/9 120/22 146/1 157/13 158/7 159/9 160/6 164/7 165/23 176/4 181/1 183/12 183/15 183/17 183/20 183/23 187/21 <b>systemic [1]</b> 104/23 <b>systems [11]</b> 1/14 6/9 54/10 56/23 58/7 58/11 60/7 61/25 64/3 80/17 116/16
			<b>T</b>	
			<b>T cells [1]</b> 20/7 <b>table [2]</b> 59/4 157/23 <b>take [30]</b> 2/11 5/13 7/18 7/19 13/23 19/18 27/2 27/3 27/6 35/24 76/21 81/4 95/6 95/14 95/15 102/19 118/3 134/15 137/12 138/4 138/19 139/7 144/4 146/10 156/25 157/3 159/11 164/18 183/21 184/2 <b>taken [13]</b> 55/21 94/11 94/12 97/8 102/21 121/14 121/18 124/25 147/22 163/5 166/11 166/14 186/19 <b>takes [3]</b> 25/9 139/5 156/9	

<b>T</b>	65/7 65/7 69/19 84/10 84/12 87/14 89/9 90/25 92/20 93/6 109/20 117/5 124/9 128/3 139/5 139/19 140/3 144/4 144/18 157/12 159/6 163/16 174/18 178/25 184/5 186/9	23/21 25/22 30/14 43/5 43/6 44/2 45/4 45/22 48/4 49/2 49/22 51/22 56/17 56/25 60/10 60/22 66/4 73/1 76/18 78/8 80/18 84/21 85/14 89/5 89/18 93/16 95/12 112/6 121/2 124/15 134/21 135/15 139/4 140/16 141/1 143/10 147/2 147/20 153/8 153/9 155/5 164/25 167/6 169/7 169/11 170/11 170/22 175/6 177/24 180/9 183/15 183/22 187/13	66/7 67/16 68/1 68/17 71/19 76/22 78/2 78/15 79/17 79/18 80/21 83/9 86/23 89/17 92/1 93/23 94/2 96/15 101/5 103/19 104/4 105/16 106/1 106/13 107/2 107/19 114/20 115/7 115/8 120/18 120/22 122/24 122/25 128/15 131/7 131/14 135/12 137/9 138/4 138/5 143/8 145/21 148/7 148/20 154/13 154/15 155/21 156/5 160/7 167/20 172/18 173/6 173/6 174/9 174/17 175/1 175/11 176/14 180/15 182/20	120/19 125/5 125/9 152/11 165/23 167/2 180/2 185/15 <b>they</b> [233] <b>they'd</b> [1] 160/13 <b>they'll</b> [2] 47/4 47/4 <b>they're</b> [28] 6/18 10/15 15/10 17/13 29/7 29/19 30/13 39/4 44/6 44/8 44/23 47/3 47/8 54/3 70/11 101/14 123/25 124/13 128/16 131/21 139/14 140/1 143/3 143/3 144/20 161/16 164/1 178/18 <b>they've</b> [8] 26/15 39/4 48/22 68/21 71/6 109/22 164/22 179/9 <b>thing</b> [6] 11/25 12/15 55/14 65/24 80/8 153/24 <b>things</b> [25] 7/17 9/1 9/14 11/7 15/2 22/11 36/17 55/6 62/1 62/24 63/3 65/17 66/1 66/3 72/9 73/10 75/21 78/19 95/21 110/12 111/2 152/4 156/4 158/22 184/10 <b>think</b> [138] 3/5 3/23 5/20 17/4 18/14 20/7 22/1 22/3 23/14 24/6 24/15 28/16 31/13 31/20 32/13 32/14 32/23 36/17 39/18 40/3 40/8 40/15 41/19 42/12 43/23 49/16 51/8 55/11 56/7 56/25 58/10 58/20 59/7 59/7 59/8 60/8 61/7 61/18 62/25 64/21 64/25 65/15 66/13 66/15 67/2 67/23 68/1 68/4 69/3 70/23 71/2 71/4 71/8 72/5 72/15 73/21 74/10 74/11 77/24 78/8 78/10 78/10 78/12 78/18 78/25 79/3 79/11 80/9 80/13 80/14 80/18 81/4 84/18 85/18 87/4 88/13 88/24 89/11 91/22 94/3 96/17 97/12 99/15 99/21 100/18 102/20 102/23 103/25 104/17 105/23 105/23 108/1 108/5 109/17 110/2 110/4 110/7 110/20 112/20 113/2 113/3 113/7 113/15 113/18 115/7 115/23 125/11 125/15 131/2 139/18 140/22
<b>taking</b> [9] 25/14 26/6 26/12 27/18 27/21 121/21 148/15 153/8 161/14	<b>terrible</b> [1] 14/1 <b>territory</b> [1] 22/20 <b>test</b> [14] 8/17 10/7 28/25 29/6 29/9 29/10 29/11 30/7 30/10 129/21 129/23 130/12 130/17 130/25 <b>testament</b> [1] 164/17 <b>tested</b> [12] 7/15 30/8 30/25 130/2 130/14 130/19 130/19 130/23 131/10 131/12 131/17 182/22 <b>testing</b> [8] 29/9 30/17 30/20 129/4 129/19 130/6 130/6 147/16 <b>tests</b> [5] 6/17 6/18 7/14 54/24 134/4 <b>text</b> [1] 92/11 <b>than</b> [39] 4/19 9/15 10/8 11/5 18/16 23/16 24/16 27/4 29/18 30/12 38/23 39/11 39/19 49/8 50/12 58/13 66/20 71/11 72/18 88/17 89/1 89/25 92/24 96/13 98/7 99/11 112/17 116/19 137/16 143/23 146/24 150/11 150/20 165/12 168/21 168/22 169/10 169/13 178/7 <b>thank</b> [54] 2/4 12/22 58/6 80/24 83/21 107/2 108/2 108/4 108/8 109/20 110/15 110/18 110/24 111/20 111/21 111/24 113/11 113/15 113/17 113/19 113/25 114/17 114/17 116/21 119/3 131/4 135/1 148/11 150/17 153/14 159/18 162/17 166/20 172/21 173/18 180/11 183/1 183/19 184/12 184/20 185/6 185/7 185/13 186/6 186/14 187/6 187/7 187/15 187/16 188/11 188/20 188/22 189/1 189/3 <b>that</b> [833] <b>that I</b> [3] 60/4 110/2 186/6 <b>that's</b> [55] 13/23 14/2	<b>theoretical</b> [1] 61/25 <b>therapeutics</b> [3] 180/1 181/8 185/5 <b>therapies</b> [1] 69/4 <b>therapy</b> [1] 162/24 <b>there</b> [277] <b>there'd</b> [1] 186/2 <b>there's</b> [35] 35/1 40/3 42/19 44/17 76/23 79/14 79/23 84/19 86/15 88/24 89/11 93/1 99/5 101/13 103/12 103/25 104/17 125/3 139/24 140/18 142/6 144/24 145/20 148/14 150/14 152/15 158/11 161/4 161/8 161/25 170/3 173/22 182/21 186/16 188/6 <b>thereabouts</b> [1] 92/12 <b>thereafter</b> [1] 86/6 <b>therefore</b> [38] 4/23 5/12 7/14 8/7 27/7 30/19 30/25 38/6 62/2 67/13 68/6 69/6 80/11 84/7 86/10 94/24 101/19 105/3 105/21 119/1 119/20 126/8 128/14 129/20 132/8 132/12 136/17 144/19 152/5 152/8 157/20 158/3 168/24 169/11 172/3 172/6 174/19 179/22 <b>these</b> [36] 9/25 18/1 19/8 20/19 27/24 37/9 37/23 42/13 49/12 51/10 56/14 59/24 60/3 64/3 68/20 74/15 80/17 82/11 83/14 85/21 92/10 96/7 103/21 104/5 104/8 104/25 112/18 117/10		

<b>T</b>	83/24 85/19 89/19 91/9 92/16 93/4 94/11 95/21 96/14 96/15 98/12 98/13 103/11 105/6 105/6 105/22 107/24 108/2 109/2 110/3 110/11 110/12 110/13 110/15 110/16 113/24 117/7 118/1 122/11 127/24 128/12 128/14 129/21 130/13 132/4 134/4 135/9 138/21 139/21 144/5 144/22 149/21 149/22 150/11 158/22 160/14 160/15 160/17 162/6 166/10 167/13 171/20 174/6 182/21 183/2 183/21 184/3 184/10 185/16 185/18 <b>though [6]</b> 33/1 46/22 57/14 117/9 163/18 164/15 <b>thought [12]</b> 11/23 29/25 80/5 80/15 83/5 91/9 98/2 101/12 106/5 144/13 159/6 167/15 <b>thousand [2]</b> 29/21 29/22 <b>thousands [11]</b> 10/20 10/22 10/22 14/12 29/24 29/24 47/24 76/8 94/17 130/11 158/1 <b>threads [1]</b> 78/15 <b>threat [2]</b> 39/25 120/14 <b>threatening [1]</b> 98/19 <b>three [22]</b> 7/22 12/23 17/2 19/8 34/3 37/23 47/13 50/20 52/10 60/19 63/2 85/6 100/17 107/4 125/14 129/20 132/19 141/4 143/13 143/18 148/17 166/8 <b>three-monthly [1]</b> 60/19 <b>threshold [1]</b> 85/9 <b>thresholds [3]</b> 17/17 18/5 128/2 <b>throat [1]</b> 19/18 <b>throes [1]</b> 185/4 <b>thrombocytopenia [9]</b> 5/15 73/1 73/2 95/23 101/16 102/7 165/14 165/21 171/23 <b>thrombosis [6]</b> 72/25 73/1 95/23 165/14 165/20 171/19 <b>Thrombotic [1]</b> 165/16 <b>through [32]</b> 6/21	6/23 6/23 7/1 35/6 44/4 44/16 60/2 66/1 71/20 71/20 72/2 77/5 78/4 79/13 82/23 88/7 88/8 97/21 103/16 111/6 119/7 121/22 124/10 142/9 143/2 155/19 157/14 158/6 160/12 164/20 170/17 <b>throughout [3]</b> 10/23 45/18 121/11 <b>thus [1]</b> 185/22 <b>time [46]</b> 2/10 5/4 22/18 28/17 34/19 38/15 40/14 41/16 42/6 43/8 60/17 65/15 69/19 76/17 77/1 82/3 85/1 91/19 99/15 107/10 108/14 114/1 118/12 124/10 124/25 125/4 126/2 132/5 132/21 135/2 146/22 154/11 156/25 159/5 162/3 166/16 168/8 171/7 171/14 174/23 174/24 175/22 175/23 178/2 184/1 185/2 <b>timeframe [1]</b> 89/8 <b>timelines [1]</b> 140/18 <b>timely [2]</b> 56/23 64/19 <b>times [2]</b> 61/9 122/9 <b>tin [2]</b> 16/3 141/24 <b>tinnitus [1]</b> 104/21 <b>tips [1]</b> 174/2 <b>tissue [1]</b> 104/22 <b>tocilizumab [1]</b> 180/16 <b>today [3]</b> 79/22 114/1 114/18 <b>together [6]</b> 53/11 78/15 80/16 123/18 137/23 171/20 <b>tolerability [1]</b> 136/21 <b>tomorrow [1]</b> 189/4 <b>too [6]</b> 41/11 41/17 104/10 104/10 114/10 171/10 <b>took [4]</b> 53/13 66/11 119/20 149/2 <b>Tool [1]</b> 58/3 <b>tools [2]</b> 52/25 53/3 <b>top [5]</b> 32/14 48/23 157/24 172/23 173/1 <b>topic [14]</b> 37/8 50/7 50/9 66/7 67/16 78/2 84/2 90/11 93/22 102/12 108/17 151/25 185/20 186/15 <b>topics [2]</b> 108/13 185/20 <b>total [3]</b> 150/20 155/15 158/1	<b>totality [1]</b> 62/9 <b>totals [3]</b> 66/1 75/16 75/20 <b>touch [3]</b> 63/12 156/19 168/14 <b>touched [1]</b> 134/13 <b>towards [1]</b> 174/8 <b>Town [1]</b> 47/5 <b>track [2]</b> 54/24 107/9 <b>tragedy [1]</b> 157/21 <b>train [1]</b> 20/12 <b>trained [1]</b> 4/21 <b>trans [1]</b> 54/8 <b>transfer [1]</b> 59/2 <b>transfusion [1]</b> 117/2 <b>transition [3]</b> 36/4 36/9 58/17 <b>transmissibility [2]</b> 94/23 139/3 <b>transmission [8]</b> 87/17 89/13 89/14 89/24 90/5 90/7 138/23 176/9 <b>transparency [1]</b> 183/12 <b>transverse [11]</b> 37/13 42/5 42/10 42/12 43/3 100/17 100/18 100/25 149/12 149/23 150/8 <b>treatable [1]</b> 96/7 <b>treated [1]</b> 186/24 <b>treating [1]</b> 84/22 <b>treatment [7]</b> 13/18 13/18 14/6 110/11 181/11 182/5 182/7 <b>treatments [2]</b> 12/13 125/15 <b>tremendous [2]</b> 151/22 153/18 <b>trend [1]</b> 88/13 <b>trends [8]</b> 4/16 56/2 61/25 65/20 66/3 67/20 152/16 155/24 <b>trial [78]</b> 3/25 6/22 7/4 10/18 10/24 10/25 11/16 11/22 12/5 12/7 12/8 13/9 13/11 13/13 13/15 13/16 13/23 14/11 14/24 14/25 15/6 15/21 15/22 15/23 16/2 16/4 16/21 17/15 18/8 18/12 18/24 18/24 19/16 19/17 20/10 24/9 24/19 24/25 25/22 26/2 26/18 27/9 27/10 27/25 28/19 37/15 37/24 38/19 38/22 39/16 39/21 41/18 45/19 46/8 47/9 47/25 49/19 66/10 78/25 86/25 89/2 101/6 139/8 139/11 144/2	144/22 144/23 145/17 149/6 149/7 149/16 150/9 150/20 151/2 178/13 178/14 182/4 182/24 <b>trially [4]</b> 13/25 17/2 17/20 26/16 <b>trially [2]</b> 6/13 17/25 <b>trials [132]</b> 3/24 4/20 6/12 6/16 6/21 7/1 8/1 10/4 12/17 13/1 13/2 14/14 16/25 17/6 17/11 17/12 18/8 18/14 18/16 18/20 19/21 19/24 21/2 22/22 23/18 24/22 26/22 27/8 41/7 41/12 43/24 44/6 44/25 45/10 46/5 46/7 46/9 46/18 47/1 47/2 47/15 47/23 48/7 48/14 48/20 48/22 49/14 49/17 49/25 50/2 50/9 50/11 50/17 50/20 50/23 50/25 51/11 52/13 53/2 53/21 57/16 66/10 66/14 66/16 66/19 66/23 67/2 67/5 67/11 70/10 70/11 74/15 74/20 74/23 78/22 79/5 79/10 79/12 79/13 79/15 85/4 85/21 85/24 86/2 86/10 86/19 86/23 86/23 87/24 88/4 89/1 89/23 97/25 99/13 100/19 101/1 101/4 106/7 107/23 113/6 139/11 139/17 139/22 140/17 140/21 140/24 141/6 141/12 141/13 143/17 143/20 143/23 143/25 144/5 144/18 146/19 146/25 148/25 149/2 149/11 149/15 150/18 152/21 152/21 165/17 180/25 181/23 181/25 182/13 182/15 182/19 182/20 <b>tried [6]</b> 46/9 83/3 91/8 91/23 102/24 104/3 <b>tries [1]</b> 20/4 <b>triggered [1]</b> 102/6 <b>Tropical [5]</b> 2/22 3/1 3/4 3/6 54/20 <b>trouble [2]</b> 40/7 182/9 <b>true [4]</b> 2/15 23/19 105/7 105/8 <b>trust [4]</b> 182/21 183/13 183/18 183/24
----------	---	--	---	--

<b>T</b>	<b>unacceptable [1]</b> 79/24	49/14 50/3 50/4 52/16 52/25 54/2 58/18 80/2 88/13 94/17 119/21 120/11 121/12 129/15 130/3 131/6 133/6 133/16 133/20 140/20 140/22 141/5 141/7 141/8 149/3 149/6 162/20 164/1 169/14 179/25	45/20 60/20 60/24 140/14 161/9 173/7 173/10 175/12 179/11 179/12	<b>vaccinating [1]</b> 143/4
<b>truth [1]</b> 67/5	<b>unacceptably [1]</b> 162/21	<b>unblinded [2]</b> 16/10 27/12	<b>updated [6]</b> 78/5 124/4 154/13 157/18 183/15 183/20	<b>vaccination [30]</b> 42/16 55/4 57/4 58/3 76/13 82/12 93/14 94/13 94/15 94/22 94/25 99/12 102/14 102/15 109/9 110/4 110/6 123/15 133/4 142/4 142/6 142/20 142/25 161/7 167/16 168/8 175/16 177/20 178/20 187/14
<b>try [8]</b> 56/1 67/19 80/5 87/21 104/24 155/19 157/3 184/22	<b>uncertainty [1]</b> 21/22	<b>under [20]</b> 4/3 30/13 31/22 35/13 35/20 35/23 36/5 36/19 36/21 43/19 44/8 50/8 77/23 125/3 129/12 145/17 160/4 166/6 168/17 181/8	<b>updates [3]</b> 161/23 179/12 183/17	<b>vaccinations [2]</b> 109/16 109/19
<b>trying [10]</b> 10/6 18/21 22/19 65/8 78/12 78/15 78/18 152/2 152/15 185/4	<b>underlying [1]</b> 91/13	<b>undermined [1]</b> 126/9	<b>upon [22]</b> 5/1 11/12 18/4 43/12 43/21 48/18 52/12 53/1 78/7 81/16 81/20 83/8 90/3 120/6 120/16 120/24 121/6 125/17 128/4 132/13 140/4 140/6	<b>vaccine [180]</b> 3/11 3/19 3/20 5/9 5/15 6/20 8/25 9/3 9/8 9/21 9/22 10/4 12/6 13/8 13/24 14/21 16/11 17/19 18/13 18/20 19/3 19/6 19/11 19/13 20/1 20/3 20/3 20/12 20/15 20/24 21/13 21/17 21/19 22/4 22/13 23/15 25/9 25/10 25/14 25/20 26/7 26/10 26/12 27/11 27/18 27/21 28/6 30/9 33/18 33/19 34/4 34/7 34/17 36/19 37/17 37/21 37/22 40/4 40/6 42/10 45/1 45/14 48/6 48/19 48/24 50/14 51/19 52/10 52/15 66/17 66/18 67/24 69/2 73/11 73/24 74/4 76/21 78/7 81/17 81/22 81/25 82/7 82/18 83/11 83/15 83/16 83/17 89/3 90/8 90/11 90/22 91/14 94/5 94/5 94/14 94/20 95/10 97/15 97/23 98/2 98/12 99/12 100/12 101/2 101/8 103/14 104/21 107/9 107/16 107/23 108/10 110/5 110/7 110/16 111/1 111/2 111/5 112/6 113/4 119/7 121/20 122/6 122/7 122/15 129/19 129/22 129/24 130/1 131/21 132/15 133/5 135/25 136/4 136/18 136/24 137/3 138/15 139/1 139/1 142/2 144/12 145/4 147/25 148/12 149/11 150/1 151/15 151/21 152/8 153/6 153/17 154/17 154/23 155/12 155/16 156/10 156/14 158/22 161/13
<b>TTS [20]</b> 5/15 72/25 73/18 95/23 96/3 99/19 165/14 166/5 167/13 167/21 167/25 168/19 169/19 170/14 171/3 171/9 171/23 173/3 176/3 176/18	<b>underpinning [1]</b> 68/25	<b>underreporting [1]</b> 112/5	<b>us [29]</b> 1/23 29/14 47/2 54/13 57/3 59/18 60/5 69/14 71/16 79/16 84/5 90/13 91/7 107/14 114/15 114/21 114/23 139/19 141/9 143/25 146/22 150/18 153/18 158/25 159/5 178/7 181/15 182/5 186/24	<b>usage [1]</b> 112/6
<b>turn [2]</b> 14/8 73/15	<b>underrepresentation [1]</b> 112/2	<b>underscores [1]</b> 123/2	<b>use [37]</b> 4/9 4/19 8/4 8/7 8/7 17/10 22/22 22/23 23/7 36/24 37/17 45/1 61/6 61/12 66/12 68/14 69/25 82/2 83/23 98/1 108/14 120/13 122/20 131/6 133/23 162/18 163/12 163/17 163/21 166/10 169/9 174/15 180/4 181/9 181/15 183/23 184/7	<b>used [7]</b> 65/11 67/18 70/24 73/24 97/15 118/13 181/16
<b>turnaround [1]</b> 134/20	<b>underrepresented [3]</b> 51/19 86/9 113/5	<b>understand [12]</b> 7/9 8/24 29/20 30/2 30/6 62/25 108/11 109/6 113/24 113/25 171/12 171/21	<b>updates [3]</b> 161/23 179/12 183/17	<b>useful [4]</b> 54/15 64/10 65/16 138/7
<b>Turning [1]</b> 93/23	<b>underscores [1]</b> 123/2	<b>understanding [12]</b> 36/14 39/15 46/6 51/18 53/18 92/13 119/24 131/2 131/18 136/8 170/22 186/25	<b>University [2]</b> 2/18 44/4	<b>usefulness [1]</b> 66/9
<b>tweaked [1]</b> 39/13	<b>underrepresentation [1]</b> 112/2	<b>understood [4]</b> 74/5 122/12 122/16 166/11	<b>unknowingly [1]</b> 25/17	<b>useless [1]</b> 40/7
<b>two [21]</b> 1/4 11/5 11/6 23/14 25/7 49/12 58/15 61/24 63/1 88/24 89/13 89/19 99/9 108/12 108/12 114/18 149/21 154/1 179/25 183/8 185/19	<b>underrepresented [3]</b> 51/19 86/9 113/5	<b>undertaken [3]</b> 145/22 150/18 170/24	<b>unless [3]</b> 24/23 92/6 130/1	<b>user [1]</b> 142/1
<b>type [6]</b> 26/22 26/24 83/15 103/14 153/25 167/14	<b>underscores [1]</b> 123/2	<b>undertaking [1]</b> 136/7	<b>unlikely [3]</b> 25/6 27/23 51/3	<b>using [8]</b> 8/15 63/8 65/13 79/14 85/21 151/21 155/17 187/4
<b>typical [1]</b> 29/20	<b>understand [12]</b> 7/9 8/24 29/20 30/2 30/6 62/25 108/11 109/6 113/24 113/25 171/12 171/21	<b>undertook [1]</b> 90/14	<b>unprecedented [1]</b> 32/6	<b>usually [6]</b> 8/14 15/19 23/24 39/1 47/9 137/16
<b>typically [6]</b> 4/19 9/18 10/19 15/10 29/25 65/2	<b>understanding [12]</b> 36/14 39/15 46/6 51/18 53/18 92/13 119/24 131/2 131/18 136/8 170/22 186/25	<b>undertaken [3]</b> 145/22 150/18 170/24	<b>unrepresentative [1]</b> 48/1	<b>utilised [1]</b> 36/12
<b>U</b>	<b>understanding [12]</b> 36/14 39/15 46/6 51/18 53/18 92/13 119/24 131/2 131/18 136/8 170/22 186/25	<b>undertaking [1]</b> 136/7	<b>untoward [1]</b> 46/7	<b>utility [2]</b> 64/9 66/6
<b>UK [50]</b> 3/2 5/5 12/23 17/2 30/24 32/3 34/3 35/12 35/15 35/15 36/20 37/5 47/13 50/23 50/24 53/22 54/8 55/9 56/16 56/25 66/22 69/9 71/11 74/1 84/25 89/2 101/5 109/5 118/7 119/18 119/18 120/8 120/9 121/7 126/16 127/22 128/24 129/20 133/15 141/12 141/13 142/7 149/4 149/5 150/9 155/15 173/7 185/23 186/3 186/12	<b>understood [4]</b> 74/5 122/12 122/16 166/11	<b>undertaking [1]</b> 136/7	<b>until [5]</b> 35/18 39/4 121/4 169/22 189/6	<b>V</b>
<b>UK Health [1]</b> 5/5	<b>undertaken [3]</b> 145/22 150/18 170/24	<b>undertaking [1]</b> 136/7	<b>unturned [2]</b> 138/6 138/8	<b>vaccinate [2]</b> 95/9 169/1
<b>UK investment [1]</b> 186/12	<b>undertaking [1]</b> 136/7	<b>undertaking [1]</b> 136/7	<b>unvaccinated [6]</b> 11/21 75/17 93/16 99/11 177/4 177/12	<b>vaccinated [11]</b> 11/19 25/17 25/24 28/4 75/17 94/24 98/12 109/2 169/5 169/6 169/10
<b>UK's [1]</b> 117/1	<b>undertaking [1]</b> 136/7	<b>undertaking [1]</b> 136/7	<b>unwanted [1]</b> 23/24	
<b>UK-wide [1]</b> 121/7	<b>undertaking [1]</b> 136/7	<b>undertaking [1]</b> 136/7	<b>unwell [1]</b> 95/16	
<b>UKHSA [3]</b> 87/4 143/5 179/3	<b>undertaking [1]</b> 136/7	<b>undertaking [1]</b> 136/7	<b>up [52]</b> 8/23 15/7 17/11 27/9 27/13 32/4 41/25 44/16 49/19 56/20 62/8 63/18 63/23 67/25 68/8 69/5 81/12 92/4 95/7 103/15 103/19 107/4 107/8 109/13 109/14 109/15 116/3 127/8 131/23 132/5 132/7 135/16 144/6 146/19 151/23 155/14 155/20 155/21 156/5 156/17 157/3 157/14 159/15 160/9 160/23 166/23 171/17 176/5 177/15 187/8 187/16 187/17	
<b>ultimately [4]</b> 37/17 46/10 51/25 180/20	<b>unfair [1]</b> 13/22	<b>unfair [1]</b> 13/22	<b>update [11]</b> 45/20	
	<b>unfortunately [2]</b> 91/6 123/20	<b>unfair [1]</b> 13/22		
	<b>unfounded [1]</b> 83/25	<b>unfair [1]</b> 13/22		
	<b>unified [1]</b> 175/19	<b>unfair [1]</b> 13/22		
	<b>Union [3]</b> 35/18 58/17 120/23	<b>unfair [1]</b> 13/22		
	<b>unit [2]</b> 3/2 142/21	<b>unfair [1]</b> 13/22		
	<b>United [40]</b> 17/3 17/7 23/16 31/8 31/9 32/21 35/3 37/2 38/8 38/14	<b>unfair [1]</b> 13/22		

<b>V</b>	136/16 179/8 185/2	164/12 164/14 165/4	wanting [1] 119/1	weeks [5] 7/18 27/6
<b>vaccine... [21]</b>	<b>varying [2]</b> 34/4	166/1 167/7 168/4	<b>Waqar [1]</b> 183/10	27/8 73/23 174/6
161/14 161/17 161/18	144/6	171/14 171/15 171/15	<b>warning [1]</b> 177/19	<b>weigh [1]</b> 95/7
163/4 163/13 166/10	<b>vast [4]</b> 7/12 26/20	171/17 171/25 172/11	<b>was [296]</b>	<b>weighing [1]</b> 138/9
166/18 167/4 171/9	70/13 153/20	172/21 173/18 175/25	<b>wasn't [9]</b> 21/20 48/9	<b>well [58]</b> 3/5 6/24
172/6 173/8 176/17	<b>Vaughan [1]</b> 184/22	176/7 177/10 177/13	64/6 99/15 157/8	28/3 28/20 29/13
176/22 176/25 177/4	<b>Vaughan Gething [1]</b>	177/19 182/4 183/1	160/14 163/12 168/2	29/17 31/2 31/4 33/21
177/25 179/15 182/22	184/22	183/19 184/11 185/7	168/7	38/17 43/17 44/2
185/25 186/8 187/2	<b>vector [3]</b> 68/25	186/22 186/24 187/1	<b>way [47]</b> 7/9 9/3	49/13 50/3 51/16
<b>vaccines [133]</b> 4/10	83/17 163/1	<b>via [2]</b> 70/21 128/12	10/10 14/13 17/14	51/18 53/2 54/11 55/8
4/14 4/17 5/11 6/13	<b>vehicle [1]</b> 187/1	<b>vial [1]</b> 130/17	17/20 32/9 33/20	55/19 56/16 56/17
8/17 10/21 10/21	<b>Veklury [1]</b> 180/12	<b>view [35]</b> 39/25 41/1	40/10 41/6 41/7 42/25	56/18 58/15 61/1
12/21 12/23 13/1	<b>verbally [1]</b> 140/2	41/14 42/7 42/24	44/22 45/19 46/25	62/10 65/1 68/5 70/17
15/19 16/25 17/2 18/1	<b>verse [1]</b> 124/10	46/16 53/6 64/8 64/17	53/21 57/13 69/4 73/6	70/23 73/11 76/10
19/8 23/16 23/20	<b>version [2]</b> 141/17	64/23 66/8 73/3 73/5	74/14 75/14 75/18	76/20 85/9 88/12
26/15 26/21 28/25	154/12	73/15 73/17 79/20	77/3 77/15 77/25 78/8	89/12 99/5 113/20
29/17 30/15 30/24	<b>versus [1]</b> 176/3	81/25 83/9 84/14	78/18 78/20 81/21	115/2 116/3 116/18
32/3 33/17 33/20 34/4	<b>very [179]</b> 2/4 2/8 2/9	91/18 93/25 97/7 97/8	91/1 91/20 92/7 93/23	116/18 117/6 122/7
35/12 37/9 39/21	5/3 7/2 7/3 9/6 9/25	102/19 103/21 103/23	97/19 115/12 126/17	131/18 135/4 139/12
40/20 40/21 40/22	9/25 12/22 14/9 14/10	107/1 109/12 112/22	126/19 136/25 137/14	140/2 140/6 140/22
41/15 42/15 43/3	15/12 17/14 18/1 18/3	138/3 138/18 143/17	146/4 154/5 155/17	145/3 151/13 153/4
46/15 47/13 49/12	20/6 20/17 21/25 22/7	146/10 149/22 182/19	160/7 160/23 162/23	156/20 160/18 163/22
50/20 52/10 52/18	22/8 22/8 22/10 23/12	<b>views [7]</b> 21/21 40/23	180/22 187/17	175/24 187/13
57/2 57/6 69/1 71/24	24/12 24/16 24/18	68/20 75/3 84/3	<b>ways [8]</b> 12/4 77/11	<b>Welsh [1]</b> 120/2
75/4 75/5 75/10 75/13	24/21 25/6 25/21 27/3	156/23 169/18	113/23 128/16 147/15	<b>went [2]</b> 54/18
75/19 76/4 76/7 76/23	27/24 28/3 30/20	<b>viral [2]</b> 68/24 177/5	161/5 163/21 179/18	116/18
76/24 77/24 79/13	30/21 31/19 33/9 33/9	<b>virtually [1]</b> 40/15	<b>we [195]</b>	<b>were [212]</b>
79/14 83/24 84/21	36/22 37/12 37/12	<b>virtue [2]</b> 48/18 126/9	<b>we'd [1]</b> 87/21	<b>weren't [4]</b> 5/12
84/25 85/6 85/6 85/15	39/8 40/11 40/16	<b>virtues [2]</b> 56/20	<b>we'll [20]</b> 1/21 2/12	40/13 72/23 163/8
85/16 86/4 86/7 86/12	41/17 41/22 42/7	61/21	6/6 17/16 22/24 33/3	<b>western [4]</b> 17/21
86/21 87/2 87/7 87/9	42/16 43/8 44/8 44/17	<b>virus [18]</b> 9/15 18/22	42/22 45/16 73/4	40/2 166/17 181/14
87/24 88/1 88/6 90/4	44/19 44/23 46/5	18/25 20/13 20/14	73/14 81/6 99/19	<b>Weston [1]</b> 1/25
90/7 91/2 91/5 91/10	46/20 51/8 52/25	20/16 87/2 87/23 89/9	115/16 115/16 117/12	<b>what [139]</b> 4/6 6/14
92/17 92/18 93/2 93/8	53/10 55/24 57/21	89/13 89/24 91/17	119/3 124/22 127/8	6/15 7/3 7/6 7/10 7/11
94/7 99/7 100/4	58/25 59/25 64/10	94/4 104/19 149/24	135/4 168/13	8/12 9/16 10/2 10/2
100/19 101/18 102/17	65/12 65/15 66/4	155/1 158/20 181/5	<b>we're [18]</b> 2/9 6/8	10/17 10/23 11/22
103/4 106/4 106/24	66/16 67/17 68/5	<b>visible [1]</b> 179/14	12/24 14/8 22/19 24/7	11/25 12/6 13/7 14/17
112/11 112/16 113/7	68/12 68/16 68/21	<b>vital [4]</b> 11/18 54/3	40/18 43/7 44/24	15/4 15/7 18/12 18/16
113/10 119/8 120/8	70/16 72/18 75/7 75/8	117/10 153/15	47/22 114/23 115/3	18/19 20/3 21/7 22/13
129/10 129/20 131/13	75/21 79/2 80/24	<b>vitro [2]</b> 6/15 6/22	116/15 116/22 129/21	23/1 23/2 24/11 25/3
131/14 132/7 133/16	81/12 82/11 83/12	<b>voice [4]</b> 41/22 41/23	145/15 147/7 155/5	26/18 27/5 27/16
135/24 137/13 140/20	84/18 86/13 87/8 89/8	138/20 185/10	<b>we've [20]</b> 8/13 23/14	27/17 28/1 28/4 29/4
140/21 143/13 143/18	90/23 90/23 92/7	<b>voluntary [1]</b> 185/17	23/25 33/7 50/16	32/5 33/5 37/12 41/21
143/21 145/12 155/23	92/21 93/3 93/10	<b>volunteer [1]</b> 3/23	62/13 77/10 116/12	43/14 49/2 51/7 51/9
158/5 158/6 162/10	93/11 94/11 95/9	<b>volunteers [1]</b> 8/14	118/6 140/25 143/13	57/8 65/5 65/7 65/7
162/19 162/20 165/24	96/15 96/16 96/22	<b>vulnerable [1]</b> 182/17	149/12 150/25 151/16	65/21 66/25 67/25
166/6 167/14 167/24	97/11 97/15 97/20	<b>W</b>	152/19 159/10 161/9	68/22 70/21 72/15
168/18 177/10 179/22	97/24 98/22 98/25	<b>w-e [1]</b> 51/10	164/4 165/4 180/18	73/17 74/1 77/20
185/5 185/17 185/21	99/1 99/9 100/20	<b>waiting [2]</b> 38/24	<b>weak [1]</b> 66/4	80/18 81/14 81/15
186/4 186/5 188/6	100/22 101/11 103/17	114/10	<b>weakness [2]</b> 98/18	82/10 82/14 82/20
<b>Vallance [1]</b> 123/1	105/18 106/5 107/2	<b>Wales [5]</b> 35/3	99/24	82/23 83/22 84/14
<b>value [4]</b> 67/12 68/14	108/2 109/16 109/17	120/20 164/3 164/12	<b>website [2]</b> 109/11	85/11 86/19 87/1 87/3
112/22 165/9	109/18 113/16 113/17	184/22	154/10	87/25 89/1 90/2 98/14
<b>values [2]</b> 124/17	113/20 113/25 114/8	<b>waning [1]</b> 87/7	<b>websites [1]</b> 77/13	98/20 100/5 103/20
124/18	114/17 114/17 114/23	<b>want [21]</b> 14/24	<b>Wednesday [1]</b> 1/1	106/5 115/15 116/14
<b>variable [1]</b> 29/19	115/11 116/3 116/10	18/19 18/23 18/24	<b>week [3]</b> 19/18 27/4	116/14 116/15 116/17
<b>variants [5]</b> 87/1 87/5	117/5 118/18 118/19	39/3 48/12 68/19 71/2	170/23	116/18 116/19 117/20
90/9 181/4 181/5	120/4 120/4 124/9	71/8 78/16 80/19	<b>weekend [10]</b> 145/24	117/25 122/12 123/22
<b>varicella [1]</b> 104/19	125/9 127/10 132/4	104/7 105/5 107/3	167/12 168/14 168/14	125/4 127/25 128/8
<b>varicella-zoster-virus [1]</b> 104/19	135/22 140/18 142/6	110/12 110/22 124/9	169/16 169/23 170/13	131/1 133/10 135/4
<b>variety [2]</b> 55/5 75/25	144/12 144/23 147/11	151/20 157/23 160/25	170/23 171/2 171/10	136/1 136/12 136/22
<b>various [4]</b> 68/20	151/3 151/5 151/10	186/6	<b>weekly [6]</b> 153/13	137/21 138/13 139/1
	151/13 153/12 156/16	<b>wanted [1]</b> 110/25	161/9 170/24 171/2	139/6 139/19 140/7
	163/3 163/24 164/4		173/10 179/10	140/9 141/4 141/11



<b>W</b>			
<b>what...</b> [31] 141/13 149/6 152/3 152/4 152/9 152/11 155/5 156/15 156/21 156/23 157/4 158/3 158/16 164/1 167/1 167/2 167/25 170/16 171/11 171/17 173/10 175/5 175/5 175/18 175/21 179/3 181/3 181/14 181/24 184/4 186/13	41/15 42/8 46/7 46/8 48/17 49/25 55/18 55/19 64/14 65/12 66/2 66/17 71/21 72/4 75/4 75/5 75/16 75/18 78/3 81/22 82/6 82/16 83/9 84/13 88/1 91/18 93/4 99/17 103/21 109/20 112/5 124/12 134/3 135/12 135/13 136/4 136/10 136/23 138/25 139/6 140/7 145/11 149/22 155/11 156/22 158/20 162/18 162/22 167/12 167/14 167/24 169/17 169/21 169/22 172/5 174/13 175/4 176/25 177/8 178/22 180/23 181/21 186/16	132/7 132/13 135/12 137/13 139/2 140/4 140/6 142/12 145/2 146/1 146/3 147/9 147/18 148/7 148/11 149/12 151/10 151/22 153/2 155/7 155/20 156/5 157/18 159/9 160/4 161/1 161/5 161/12 162/9 162/25 165/2 166/3 174/9 176/6 176/7 176/15 176/15 177/2 178/6 179/8 180/15 181/19 182/9 187/3	<b>wide</b> [4] 4/11 9/6 66/12 121/7 <b>widely</b> [1] 181/4 <b>wildly</b> [1] 71/16 <b>will</b> [85] 1/16 1/17 7/17 8/6 8/15 9/1 9/5 10/4 10/10 10/19 11/8 11/9 12/12 13/11 13/12 13/13 13/14 13/14 14/10 14/12 14/19 14/20 15/3 15/11 15/19 16/6 19/2 19/2 19/3 20/1 21/1 21/4 22/4 22/5 22/6 22/6 22/7 22/23 24/22 24/24 24/25 26/3 26/16 26/18 27/8 27/25 29/12 29/21 33/20 42/1 44/14 44/16 44/21 45/9 45/25 46/5 46/14 46/21 46/23 46/24 47/7 49/3 49/4 49/7 51/17 62/19 70/7 71/17 71/19 71/20 94/18 116/5 118/3 124/22 129/24 131/22 132/3 134/10 135/21 141/20 171/6 178/17 184/10 187/22 188/23
<b>what's</b> [5] 35/13 77/5 79/15 85/19 128/6	16/14 16/19 17/20 19/15 20/22 21/9 25/1 25/23 26/7 26/9 27/20 29/3 30/11 30/17 32/17 33/6 35/1 35/6 35/16 35/18 35/18 39/22 40/19 40/21 41/6 41/7 41/13 42/6 43/1 43/11 43/11 43/21 45/12 48/1 48/24 50/12 51/14 52/11 53/2 53/8 53/13 53/17 56/3 57/4 58/15 58/23 59/14 59/19 59/21 60/16 61/25 62/11 62/12 63/3 63/14 64/3 69/10 69/11 70/15 71/15 71/22 73/2 73/6 73/7 73/16 74/14 74/16 75/2 75/24 77/3 77/4 77/12 78/7 79/7 82/4 82/14 83/8 83/9 84/24 88/20 89/14 90/3 90/23 91/2 91/13 92/11 93/17 93/24 94/2 95/8 97/9 99/16 99/19 100/25 101/17 102/2 103/8 103/18 104/1 104/5 105/3 106/6 106/14 107/6 107/19 107/20 109/10 110/21 114/19 115/16 115/16 116/7 116/8 116/16 116/23 118/24 119/14 119/14 120/6 120/22 121/6 123/7 125/11 125/17 126/12 128/4 128/17 128/22 129/20 130/2 131/5 131/7 131/16 131/23	<b>while</b> [3] 81/5 115/5 121/18 <b>whilst</b> [8] 28/8 57/16 79/21 89/23 93/13 123/6 149/17 159/12 <b>white</b> [6] 49/20 49/21 144/20 144/25 149/3 188/4 <b>Whitty</b> [1] 15/16 <b>who</b> [77] 3/11 5/5 8/15 11/19 11/21 12/11 12/12 12/14 14/18 15/3 15/12 15/13 15/15 15/20 16/10 19/1 19/21 19/22 43/24 44/10 44/15 46/10 54/19 54/24 54/25 57/5 64/12 70/5 71/7 71/17 71/18 71/19 78/4 82/11 86/1 86/2 88/10 91/4 110/3 110/11 113/5 122/11 122/21 125/4 125/4 125/4 125/4 126/20 129/24 132/1 136/24 137/7 141/24 142/3 142/20 142/22 142/25 143/9 144/11 147/23 153/15 156/10 160/7 160/15 160/17 160/18 160/21 163/5 163/8 169/4 171/16 175/19 176/21 183/10 183/21 185/16 187/14	<b>woman</b> [1] 49/6 <b>women</b> [8] 46/12 50/16 86/1 86/1 86/9 113/6 176/24 182/17 <b>won't</b> [8] 8/19 24/6 33/17 33/18 44/24 45/16 182/9 185/10 <b>wonder</b> [1] 109/24 <b>word</b> [5] 61/6 61/12 80/12 138/5 180/4 <b>word I</b> [1] 61/6 <b>words</b> [4] 24/13 70/23 130/24 146/8 <b>work</b> [30] 2/9 2/12 5/6 5/25 7/9 40/13 61/14 61/18 62/5 64/21 80/6 87/9 98/3 102/24 113/23 117/11 122/18 122/23 123/18 126/15 136/16 151/23 152/2 171/15 175/23 179/3 183/24 184/4 184/16 188/17 <b>worked</b> [8] 40/8 65/1 86/7 89/12 134/24 160/6 162/5 184/21 <b>working</b> [16] 2/23 3/20 33/19 97/21 102/8 122/11 123/10 132/3 134/22 147/10 159/2 167/4 167/6 172/16 177/25 184/23 <b>workings</b> [1] 33/13 <b>works</b> [6] 7/5 10/9 10/10 39/5 123/9 129/25 <b>world</b> [20] 13/25 23/8 29/7 31/1 32/11 32/19 32/23 40/2 44/1 44/7 53/23 53/25 57/1 58/13 85/13 86/20 106/10 133/25 151/21 165/6 <b>world's</b> [2] 32/15 133/22 <b>worst</b> [1] 87/12 <b>worth</b> [1] 169/7 <b>worthy</b> [1] 179/18 <b>would</b> [103] 10/15 13/18 14/6 18/11 19/21 21/16 25/6 29/20 29/25 30/20 30/24 31/13 31/14 31/14 32/16 34/18 38/12 41/25 45/14 47/18 47/19 47/21 47/25 49/3 51/4 53/17 57/15 60/8 61/6 68/16 74/21 79/22 81/24 83/6 83/19 84/20 92/2 92/20 93/20 95/1 95/8 98/3 98/23 102/1 105/3 107/17 110/2 111/7 111/12 111/17
<b>whatever</b> [2] 77/15 126/21		<b>who'd</b> [1] 160/20 <b>WHO's</b> [1] 115/24 <b>whole</b> [10] 17/24 31/8 37/1 38/24 44/13 46/19 90/22 120/10 122/8 149/7 <b>whom</b> [2] 5/19 119/10 <b>why</b> [17] 13/9 23/1 23/10 25/22 28/13 30/15 45/12 48/4 59/21 98/5 118/9 122/6 168/3 169/11 180/19 180/20 184/19	<b>willingness</b> [1] 188/17 <b>Windsor</b> [1] 121/4 <b>Winton</b> [2] 175/24 176/6 <b>wish</b> [4] 78/11 92/6 110/3 144/14 <b>wished</b> [1] 160/19 <b>wishing</b> [1] 163/14 <b>withdrawn</b> [1] 122/21 <b>withdrew</b> [3] 114/3 122/24 189/2 <b>within</b> [24] 5/5 9/1 11/5 17/15 23/14 26/11 28/17 33/13 44/5 65/20 72/2 89/8 115/5 116/8 117/16 119/21 121/3 123/21 129/3 130/2 154/1 154/2 177/25 187/18 <b>without</b> [9] 6/21 41/14 42/24 61/22 65/25 94/23 171/23 175/23 188/16 <b>witness</b> [14] 17/5 64/22 82/19 82/22 86/5 88/19 103/16 114/7 114/19 130/10 140/12 146/8 153/23 189/2 <b>witnesses</b> [6] 1/4 114/3 116/13 117/25 151/1 185/22
<b>whatsoever</b> [2] 35/10 186/10	<b>which</b> [187] 1/15 5/1 6/2 11/12 12/13 13/24 14/14 15/22 16/3 16/14 16/19 17/20 19/15 20/22 21/9 25/1 25/23 26/7 26/9 27/20 29/3 30/11 30/17 32/17 33/6 35/1 35/6 35/16 35/18 35/18 39/22 40/19 40/21 41/6 41/7 41/13 42/6 43/1 43/11 43/11 43/21 45/12 48/1 48/24 50/12 51/14 52/11 53/2 53/8 53/13 53/17 56/3 57/4 58/15 58/23 59/14 59/19 59/21 60/16 61/25 62/11 62/12 63/3 63/14 64/3 69/10 69/11 70/15 71/15 71/22 73/2 73/6 73/7 73/16 74/14 74/16 75/2 75/24 77/3 77/4 77/12 78/7 79/7 82/4 82/14 83/8 83/9 84/24 88/20 89/14 90/3 90/23 91/2 91/13 92/11 93/17 93/24 94/2 95/8 97/9 99/16 99/19 100/25 101/17 102/2 103/8 103/18 104/1 104/5 105/3 106/6 106/14 107/6 107/19 107/20 109/10 110/21 114/19 115/16 115/16 116/7 116/8 116/16 116/23 118/24 119/14 119/14 120/6 120/22 121/6 123/7 125/11 125/17 126/12 128/4 128/17 128/22 129/20 130/2 131/5 131/7 131/16 131/23		<b>when</b> [60] 11/21 13/16 13/19 13/24 14/5 16/9 20/24 21/15 22/3 22/5 25/23 27/9 33/23 34/20 37/8 39/2 41/23 47/10 49/25 59/5 72/23 73/22 73/25 77/21 79/14 81/7 86/13 89/4 91/20 91/22 94/24 95/16 96/6 99/15 109/15 112/19 113/10 115/17 120/16 120/23 121/4 121/8 122/4 122/23 125/22 131/20 132/6 132/21 132/25 138/12 139/5 146/10 149/15 155/18 158/15 166/7 166/24 171/8 185/4 187/2
<b>Whenever</b> [1] 173/22			
<b>where</b> [30] 1/15 4/9 12/8 18/25 32/10 40/18 48/15 52/1 60/23 65/11 71/9 71/11 72/1 76/16 85/3 86/24 89/3 97/12 104/3 105/24 110/5 112/16 113/3 136/23 144/24 154/2 157/2 157/7 164/4 169/1			
<b>whereas</b> [4] 7/19 26/4 109/14 136/20			
<b>whereby</b> [4] 39/8 44/18 119/9 182/1			
<b>wherever</b> [1] 156/2			
<b>whether</b> [94] 6/20 7/5 7/6 8/13 8/18 8/24 9/3 10/5 10/7 10/8 10/9 10/10 11/6 11/19 12/5 12/11 12/16 13/7 14/3 14/9 19/20 19/23 19/24 25/13 26/20 27/12 27/14 28/21 33/24 34/15 35/7			



<p><b>W</b></p> <p><b>would...</b> [53] 112/15 112/16 112/22 117/9 118/13 118/23 119/22 121/9 122/12 122/13 122/18 126/4 126/14 130/25 131/2 131/19 132/11 132/25 133/10 133/11 135/1 136/19 138/2 141/9 142/23 142/25 143/22 144/14 147/22 150/2 151/4 157/13 158/12 158/19 159/6 159/14 162/7 162/23 163/1 163/7 163/11 163/18 168/24 169/3 175/19 175/22 179/18 181/4 182/12 182/14 182/18 186/24 187/9</p> <p><b>wouldn't</b> [10] 25/6 38/13 39/3 51/10 55/20 130/13 142/23 162/15 174/20 188/16</p> <p><b>written</b> [1] 173/12</p> <p><b>wrong</b> [1] 173/15</p> <p><b>wrongly</b> [1] 91/4</p> <p><b>wrote</b> [1] 156/11</p>	<p><b>you</b> [487]</p> <p><b>you'd</b> [7] 40/14 66/24 108/19 154/9 173/12 177/24 181/6</p> <p><b>you'll</b> [2] 150/14 155/13</p> <p><b>you're</b> [27] 4/13 4/15 4/16 8/16 8/22 8/22 8/23 9/11 9/13 10/6 18/21 41/23 49/1 49/6 49/6 81/7 89/15 95/2 97/10 109/15 110/20 126/1 136/22 137/7 138/16 158/3 185/4</p> <p><b>you've</b> [46] 2/13 4/24 14/16 18/9 21/2 32/9 40/23 66/7 69/22 72/10 79/18 79/19 82/10 82/12 84/6 84/24 88/20 90/12 90/12 91/15 91/17 91/18 92/10 97/9 104/18 107/1 110/21 111/6 113/22 115/10 116/3 123/7 125/11 127/10 133/23 134/7 137/1 145/7 148/17 150/16 159/8 161/8 170/7 175/12 177/2 186/9</p> <p><b>young</b> [7] 46/23 46/23 46/24 168/21 169/1 169/9 169/10</p> <p><b>younger</b> [6] 73/25 95/20 98/2 98/11 168/22 169/4</p> <p><b>your</b> [128] 1/11 1/21 1/24 2/1 2/4 2/5 2/6 2/12 2/16 2/17 3/15 5/1 5/18 5/24 5/25 6/9 8/17 10/23 12/2 13/17 14/13 16/23 18/7 19/7 28/8 35/1 38/6 38/6 39/13 40/18 40/25 41/24 42/24 50/8 51/23 53/6 56/19 58/6 59/12 61/14 62/5 64/17 66/8 68/6 68/11 68/20 68/21 72/19 73/13 73/15 73/16 73/17 74/9 75/23 76/9 77/8 78/3 78/19 79/20 79/22 80/12 81/2 81/11 81/14 81/15 83/7 84/3 84/14 90/11 90/14 90/15 92/4 92/11 95/4 97/7 97/7 102/19 103/19 103/23 107/1 107/24 108/18 111/8 112/22 113/22 114/1 114/1 114/12 114/14 114/15 114/18 115/1 116/4 116/17 117/14 120/1 124/16</p>	<p>126/19 126/21 127/7 127/8 131/3 133/18 134/21 137/19 139/16 140/4 142/16 146/5 147/15 148/11 156/1 156/4 157/10 159/15 169/22 172/23 173/10 177/10 179/20 182/8 182/10 183/14 183/15 183/19 185/9 188/18 188/25</p> <p><b>yourself</b> [2] 106/15 128/4</p> <p><b>yourselves</b> [1] 1/21</p>	<p><b>Z</b></p> <p><b>zoster</b> [1] 104/19</p>	
<p><b>X</b></p> <p><b>Xevudy</b> [1] 180/13</p> <p><b>Xie</b> [1] 5/22</p>				
<p><b>Y</b></p> <p><b>Yeah</b> [3] 4/8 74/13 100/5</p> <p><b>year</b> [2] 27/13 124/2</p> <p><b>years</b> [6] 4/21 7/20 27/7 28/6 163/19 163/20</p> <p><b>years'</b> [1] 115/10</p> <p><b>Yellow</b> [51] 61/23 63/3 63/10 63/17 64/9 64/15 64/18 64/25 69/22 70/21 78/4 96/10 111/10 111/13 111/15 115/15 151/16 152/18 152/24 153/12 154/6 154/16 155/7 155/9 155/18 156/1 156/11 157/13 158/6 159/8 159/15 160/5 160/7 160/16 160/20 161/9 163/9 163/15 163/24 164/13 165/20 166/7 167/20 170/25 179/10 183/9 183/11 184/15 186/15 186/17 186/19</p> <p><b>yes</b> [226]</p> <p><b>yesterday</b> [1] 188/14</p> <p><b>yet</b> [3] 145/17 168/15 168/25</p>				