

Wednesday, 5 July 2023

1

2 (10.00 am)

3 **LADY HALLETT:** Good morning.

4 **MR KEITH:** Good morning, my Lady. The first witness this  
5 morning is Dr Catherine Calderwood.

6 **DR CATHERINE CALDERWOOD (sworn)**

7 (Evidence via videolink)

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

9 **MR KEITH:** Could you please provide your full name.

10 **A.** Dr Catherine Jane Calderwood.

11 **Q.** Dr Calderwood, thank you very much for your assistance  
12 in this Inquiry so far. As I ask you questions and you  
13 give evidence could you please remember to keep your  
14 voice up so that we may clearly hear you and also so  
15 that your evidence is recorded for the stenographer.

16 You have kindly provided a witness statement,  
17 INQ000182605, to which you have appended your signature,  
18 and a statement of truth. Is that correct?

19 **A.** Yes, that's correct. Just before we begin, Mr Keith,  
20 I would like permission just to say a few words, if  
21 my Lady would allow that.

22 **LADY HALLETT:** Certainly.

23 **A.** Thank you. I just wish to express my sincere  
24 condolences, my Lady, to the bereaved families, both  
25 represented in the rooms and also in wider society. I'd

1

1 Scottish Government as an adviser, which then does not  
2 have the same level of responsibility as my duties as  
3 the responsible officer for -- to the General Medical  
4 Council for Scotland's doctors as their responsible  
5 officer.

6 **Q.** All right.

7 Could you just tell us something of the broad nature  
8 of the duties of the Chief Medical Officer in Scotland,  
9 in terms of the advice that you give to ministers, the  
10 responsibility that you carry, or carried, for public  
11 health and medical issues?

12 **A.** So I always would describe it to people as almost  
13 a translation service. What I felt that I did was took  
14 the science, took the medical advice, took the  
15 up-to-date clinical evidence, and described that in  
16 a way that politicians and ministers could understand,  
17 but that also was able to help them form policy.

18 I also interacted, of course, with many civil  
19 servants from not only Health and Social Care but  
20 throughout Scottish Government, as health touches, as  
21 you know, on all aspects of society.

22 So it was an advisory role, sometimes my advice  
23 wasn't taken, but very often it was, and I was able also  
24 to pull in advice from the other three nations in  
25 the UK, but also from a wider pool of scientific and

3

1 also like to perhaps on this day, the 75th birthday of  
2 the NHS, to pay tribute to my NHS many friends and  
3 colleagues who worked tirelessly during the pandemic and  
4 of course for whom some suffered and have also lost  
5 their lives. Thank you.

6 **MR KEITH:** Dr Calderwood, you were the Chief Medical Officer  
7 for Scotland between April 2015 and 5 April 2020, were  
8 you not?

9 **A.** Correct.

10 **Q.** As the Chief Medical Officer, were you the most senior  
11 medical adviser to the Scottish Government and to  
12 NHS Scotland?

13 **A.** Yes, that's correct.

14 **Q.** In essence, did that mean that you were the responsible  
15 officer for all of Scotland's 15,000 doctors, as well as  
16 an important part of the health and social care  
17 structure in Scotland because you reported to the  
18 Director General for Health and Social Care within the  
19 Scottish Government?

20 **A.** Yes, that's correct.

21 **Q.** So were your duties owed, therefore, to the  
22 Scottish Government, to NHS Scotland, as well as,  
23 of course, to the doctors for whom you were the  
24 responsible officer?

25 **A.** So my duties were quite separate towards

2

1 medical advice across the world.

2 **Q.** You've referred to your advisory role in relation to the  
3 production and promulgation of policy. Did you also  
4 provide clinical advice on medically related matters?

5 **A.** Yes, of course.

6 **Q.** Were you in fact or did you continue to be concerned in  
7 clinical practice right up to the onset of the pandemic  
8 in November 2019, alongside your duties as Chief Medical  
9 Officer?

10 **A.** Yes, that's correct. I continued to do an antenatal  
11 clinic as a consultant obstetrician until that time.

12 **Q.** Does the CMO also play a role in relation to giving  
13 advice on research or for the future development of the  
14 medical structures and the clinical structures in  
15 Scotland?

16 **A.** The close relationship with my Chief Scientist has --  
17 means that the CMO office holds the budget for the  
18 research and development within NHS Scotland. So yes,  
19 there is a responsibility there, and there is scientific  
20 advice that's readily available but also funding for  
21 that research and development in NHS Scotland.

22 **Q.** We've heard evidence that there is in England an Office  
23 of the Chief Medical Officer. Is there an analogous  
24 directorate or entity or body of people around the Chief  
25 Medical Officer in Scotland?

4

1 **A.** So it would be a very small office: myself, at that  
 2 time, one Deputy Chief Medical Officer, who at that time  
 3 was Gregor Smith, and then we had personal assistants  
 4 and perhaps three members of staff, not all of whom were  
 5 full-time. So a very small team -- and a clinical  
 6 leadership fellow who was a doctor in training who came  
 7 to have some experience working with us.

8 **Q.** Is that Professor Sir Gregor Smith, who became acting  
 9 CMO after you, and then full-time or full CMO in  
 10 December 2020?

11 **A.** That's correct.

12 **Q.** In terms of the working relations with other parts or  
 13 other persons in the world of medicine and public  
 14 health, what links did you have and how frequently did  
 15 you discuss relevant matters with the other Chief  
 16 Medical Officers in the United Kingdom?

17 **A.** So we had a very, very good relationship. There  
 18 was a -- formal and informal meetings on a very regular  
 19 basis throughout the year. We tended to have dinner the  
 20 night before and we also then had an informal part to  
 21 that more formal meeting when we discussed matters that  
 22 affected all four countries. But in between those  
 23 meetings I would be very easily able to lift the phone  
 24 to any of the other CMOs to ask advice or because there  
 25 was something that I knew they had already experienced

5

1 influenza preparedness, namely the UK influenza  
 2 preparedness strategy of 2011.

3 To what extent were you aware of that strategy  
 4 document as CMO, and of the doctrinal thinking in the  
 5 approach which underpinned it?

6 **A.** I came into position some years after it was written.  
 7 Had I needed to find it, I would have known who to ask  
 8 and which parts of government were responsible, but  
 9 I myself had no real detailed knowledge or understanding  
 10 of that document while I was CMO.

11 **Q.** Whilst you were CMO, do you recall any debate about the  
 12 need to revise that document, bring it up to date,  
 13 redraft it?

14 **A.** No, I don't recall.

15 **Q.** Could we have on the screen, please,  
 16 document INQ000148759. This is a draft document  
 17 prepared by the Scottish Government for consultation in  
 18 July of 2019, and I just wanted to ask you,  
 19 Dr Calderwood, whether or not you had contributed to  
 20 this draft:

21 "Influenza Pandemic Preparedness.  
 22 "Guidance for Health and Social Care Services in  
 23 Scotland."  
 24 There is evidence that, having been prepared, the  
 25 publication of this document was delayed by the onset of

7

1 in their own country that I wanted to talk to them  
 2 about, and we did that extremely frequently.

3 **Q.** What about directors of public health, to what extent  
 4 does the position of the Chief Medical Officer engage  
 5 with them?

6 **A.** In Scotland I was very keen, as CMO, to have a very good  
 7 relationship with them. There are directors of public  
 8 health in all of our health boards. I met with them  
 9 very regularly but also would have interacted with them  
 10 frequently by telephone or email should there be issues  
 11 within their health boards that arose. So, again, I got  
 12 to know them as individuals and they would have, I hope,  
 13 felt they could have lift the phone to me for advice  
 14 should that be needed.

15 **Q.** What about the local authority levels, so links to local  
 16 resilience partnerships, the important bodies which  
 17 exist at local level to plan for and then respond to  
 18 emergencies?

19 **A.** I didn't have personal relationships with the local  
 20 authorities but would have been able to interact with  
 21 them through those directors of public health, who  
 22 of course worked very closely with the local  
 23 authorities.

24 **Q.** May I then turn to the question of the strategy which  
 25 underpinned the approach from all four nations to

6

1 the pandemic itself, of course, and therefore it never  
 2 reached fruition.

3 Are you aware of that document? Did you contribute  
 4 to it at all?

5 **A.** So I am aware of that document. I didn't contribute  
 6 myself as an individual directly, but there were various  
 7 members of the civil service and others who would have  
 8 been delegated to be part of that. But no, myself I was  
 9 not personally involved.

10 **Q.** Do you recall any debate from the position of the CMO  
 11 about the wisdom of Scotland devising its own influenza  
 12 preparedness strategy and therefore departing from the  
 13 UK strategy, particularly that of 2011?

14 **A.** I was not party to any debate of that nature, no,  
 15 I don't recall being part of that.

16 **Q.** Turning to SAGE, the scientific advisory group about  
 17 which the Inquiry has received a great deal of evidence  
 18 already. There was, at the onset of the pandemic, no  
 19 Scottish SAGE, was there?

20 **A.** No, that's correct.

21 **Q.** The SAGE which convened in London was a body which could  
 22 be convened by the governmental Chief Scientific Adviser  
 23 and it is generally chaired by the governmental Chief  
 24 Scientific Adviser or, if it has been convened to deal  
 25 with a health emergency, jointly by the governmental

8

1 Chief Scientific Adviser and the Chief Medical Officer.  
 2 Is that a body from which the Scottish Government  
 3 and its own advisers may draw intelligence and learning  
 4 and whatever it is that they need to be informed about?  
 5 **A.** Yes, absolutely. I think that was a committee that  
 6 I would have been aware of. There would -- there were  
 7 Scottish representation -- or Scottish invitations to  
 8 that. I think in quieter times the flow of information  
 9 from that committee was very good, but as we got into  
 10 the pandemic with very regular meetings, very regular  
 11 remote calls with Scotland dialling in to those, that  
 12 communication became much more difficult because that  
 13 was based and London and Scotland was not fully part of  
 14 that.  
 15 **Q.** You attended, therefore, some of the SAGE meetings as  
 16 the pandemic struck?  
 17 **A.** Correct.  
 18 **Q.** Did you find that an easy form of communication? Were  
 19 there difficulties in, literally in hearing what was  
 20 being said and in understanding the flow of the  
 21 information which was being fed into that committee and  
 22 then being relayed out of it?  
 23 **A.** Yes, very much so. Unfortunately there were a large  
 24 number of people dialed in to meetings. Of course our  
 25 infrastructure for remote working was nothing like it is

9

1 Chief Scientist for the environment.  
 2 **Q.** Is there a science advice team within the Health and  
 3 Social Care Directorate also?  
 4 **A.** So within the Chief Scientist office there was a small  
 5 team which sat on various committees. A lot of those,  
 6 though, would have been outside Scottish Government and  
 7 actually placed within the NHS.  
 8 **Q.** We have before us an organogram which sets out some of  
 9 the public health and civil contingencies bodies in the  
 10 Scottish set-up. Two such bodies are the Scottish  
 11 Science Advisory Council and, although I'm not sure the  
 12 second one is actually on the screen, the Scottish  
 13 Health Protection Network: Infectious Diseases  
 14 sub-group. Were they bodies with which you were  
 15 familiar and with which you worked as CMO?  
 16 **A.** It's very small on the screen, but listening to what you  
 17 said, I would have worked with them either directly or  
 18 indirectly, yes.  
 19 **Q.** All right. Did there come a point in March of 2020 when  
 20 you appreciated that the source of scientific and  
 21 medical advice from SAGE -- or particularly, I should  
 22 say, scientific advice from SAGE was inadequate for the  
 23 purposes of the Scottish Government, in part for the  
 24 practical reasons which you've identified, and therefore  
 25 you set up, together with a colleague,

11

1 now, and so we would -- I would have attended or my  
 2 deputy attended or -- with several other people from  
 3 Scotland. But very often the quality of the line was  
 4 poor, it dropped out very frequently, and there was  
 5 often not really a fully fluent read-out from some of  
 6 those very important meetings in the early days of the  
 7 pandemic.  
 8 **Q.** What other scientific posts or medical posts are there  
 9 within the Scottish Government which may provide advice  
 10 to the government in the event of a public health  
 11 emergency?  
 12 **A.** We have our Health Protection Scotland colleagues, now  
 13 within Public Health Scotland, and I had my -- the Chief  
 14 Scientific Officer, with whom I've described a very good  
 15 relationship. He, Professor David Crossman, latterly  
 16 followed on from Professor Andrew Morris, had very --  
 17 both of them had very good networks which extended  
 18 across the UK and beyond and were, therefore, very, very  
 19 solid and robust advisers to me, and to the rest of  
 20 government.  
 21 **Q.** Are there also healthcare and scientific advisers within  
 22 the Health and Social Care Directorate within the  
 23 Scottish Government?  
 24 **A.** So there is an overall Chief Scientist in Scotland and  
 25 then there is Chief Scientist, Health, and the second

10

1 Professor Andrew Morris, the Chief Scientific Adviser,  
 2 a new group, the Covid-19 Advisory Group?  
 3 **A.** Yes. So just to be clear, Professor Andrew Morris had  
 4 been my Chief Scientist prior to the current Chief  
 5 Scientist at the time, so I went back to my colleague,  
 6 Andrew Morris, and asked him to set up  
 7 a Covid-19 Advisory Group for Scotland, that's correct,  
 8 in March 2020.  
 9 **Q.** What was the membership of that group?  
 10 **A.** He pulled together a very wide-ranging group of people,  
 11 actually, which in fact, and at my insistence, some of  
 12 those people were people who had been quite openly,  
 13 particularly in social media, critical of some of the  
 14 responses to the pandemic up until that point, and I was  
 15 very keen to have a very broad range of people, not just  
 16 to have people who agreed with the government and the  
 17 current thinking. I think that to be challenged and to  
 18 have the opportunity for lively and -- particularly  
 19 lively scientific debate is very important.  
 20 **Q.** Turning to the risk assessment process in Scotland, the  
 21 evidence shows that whilst at UK level there is, now,  
 22 an NSRA -- a National Security Risk Assessment --  
 23 process, that document and that process is recalibrated  
 24 for Scottish purposes and from that process is drawn  
 25 a Scottish Risk Assessment. Do you recall, as the CMO,

12

1 having a hand in the drawing up, the drafting of that  
 2 Scottish Risk Assessment?  
 3 **A.** I would have been aware of that Scottish Risk Assessment  
 4 but I did not have any hand in drawing that up, no.  
 5 That would have been for civil servants.  
 6 **Q.** Are you surprised that, as the CMO, you weren't  
 7 approached for your views in relation to how risks  
 8 relating to health emergencies should be identified,  
 9 managed and dealt with?  
 10 **A.** I'm tempted to say a number of things in government  
 11 surprised me, Mr Keith, but the -- on reading that risk  
 12 assessment more clearly now, and with the benefit of  
 13 hindsight, yes, I think that the CMO should not just  
 14 have been copied in to documents of that sort of nature.  
 15 **Q.** You would expect now that the CMO is directly invited to  
 16 comment on the substance of that process?  
 17 **A.** Very much so.  
 18 **Q.** All right.  
 19 Exercise Iris in 2018 was an exercise with which you  
 20 were familiar. It was a one-day tabletop exercise  
 21 conducted in Scotland, and you refer to it in your  
 22 witness statement at paragraph 7.  
 23 To what extent were the recommendations which came  
 24 out of Exercise Iris implemented; do you recall?  
 25 **A.** So I have had a chance to look at those, and my

13

1 **Q.** I want to ask you some questions now, please, about your  
 2 understanding generally of the United Kingdom science  
 3 advisory system and the scientific and research base  
 4 from which we benefitted on the onset of the pandemic.  
 5 Is it your view that, in order to be as well  
 6 prepared as we may be for the future, it's vital that  
 7 our research base, our scientific advisory structure, is  
 8 not unravelled in any way, but is maintained in order to  
 9 prepare for the next pandemic?  
 10 **A.** I think that there are many things that we have learned  
 11 already in what was done: our extraordinary vaccine  
 12 production in this country, our incredibly rapid  
 13 assimilation of data, of studies that have continued,  
 14 and our much, much better co-operation and collaboration  
 15 across the UK but also, very importantly, with other  
 16 countries across the world. There is, and there is  
 17 already in my view, a tendency to move back to type, and  
 18 that is happening to some extent within the NHS already,  
 19 so that some of the improvements that were made and  
 20 practical changes are gradually already slipping back to  
 21 the old ways. I think it would be of paramount  
 22 importance that we do not slip backwards in those  
 23 scientific advances that you have discussed, in  
 24 particular those -- the data collection, the digital  
 25 infrastructure, the innovation and the co-ordination

15

1 understanding is that several -- whilst several  
 2 recommendations were implemented, there were several  
 3 that were not, and then, perhaps ironically, some of  
 4 those were in fact not continued with because staff were  
 5 taken away from that implementation process in order to  
 6 move into Covid-19 pandemic work.  
 7 **Q.** There were 13 actions which came out of Exercise Iris.  
 8 Do you recall which of them, in broad terms, were the  
 9 ones that were not ultimately implemented?  
 10 **A.** The most important ones I believe, if I'm remembering  
 11 correctly, were the information to boards about PPE and  
 12 the distribution and also the fitting of FFP3 masks, and  
 13 the encouragement that health boards would ensure that  
 14 staff -- that they had not only had supplies of PPE but  
 15 they also had done FFP mask fitting.  
 16 **Q.** Exercise Iris was designed to test Scotland's readiness  
 17 for a MERS coronavirus outbreak. Do you recall whether  
 18 or not those actions which came out of the exercise  
 19 which were concerned with the drawing up of guidance for  
 20 the HCID that is MERS coronavirus were dealt with? Do  
 21 you recall whether that was an area that was also not  
 22 fully implemented?  
 23 **A.** In my subsequent -- I wouldn't recall at the time, but  
 24 in my reading subsequently, that's correct, that  
 25 those -- that guidance was not fully implemented.

14

1 and, in particular, collaboration with other countries,  
 2 because certainly my feeling is that we didn't learn  
 3 from countries where SARS and MERS had been an issue, we  
 4 were late and slow and there wasn't a co-ordinated or  
 5 formal way in which to communicate with other countries  
 6 where we could have learned more rapidly.  
 7 So to untangle that -- or, sorry, unravel that at  
 8 this stage, I think would make a big difference in  
 9 our -- to our detriment if there was to be another  
 10 pandemic.  
 11 **Q.** Just identifying and looking for a moment at each of  
 12 those broad areas, Dr Calderwood, in relation to data,  
 13 it's apparent that during the course of the pandemic  
 14 a significant number of very sophisticated data  
 15 gathering exercises or processes were put into place,  
 16 from the SIREN study of healthcare workers, the ONS  
 17 COVID-19 Infection Survey, the Vivaldi survey in  
 18 relation to care homes, there was then also the COVID  
 19 Symptom Study, there was the whole process by which the  
 20 RECOVERY Trial process was put in place which led to the  
 21 discovery of the benefits of dexamethasone.  
 22 Are those surveys or at least the structures which  
 23 underpin those surveys and that trial work being started  
 24 to be unravelled or are they all still in place, do you  
 25 know?

16

1 **A.** I would sincerely hope they are all still in place.  
 2 I don't know the detail. I wouldn't be close enough to  
 3 say if there's a concern there about those being  
 4 unravelled.

5 **Q.** All right. You mentioned research and the research base  
 6 in the United Kingdom. What about the clinical advances  
 7 which have been made? Presumably the clinical  
 8 developments which took place during the course of Covid  
 9 are still in place, because that learning and that  
 10 knowledge continues to exist. Is there anything you  
 11 want to say about that aspect of it?

12 **A.** I think that even us here speaking remotely, that has  
 13 been a huge advantage to people being able to be  
 14 consulted. If you look at a country like Scotland, with  
 15 a lot of long distances for people to travel, that's  
 16 made a huge difference. The risk -- risks that we  
 17 believed in not seeing people face to face have probably  
 18 to some extent been mitigated against, and I would like  
 19 to see that our advances that we've done, both in this  
 20 sort of remote working but also in some of the less  
 21 invasive testing that can be done and interpreted  
 22 remotely, that we continue in our NHS to use where we  
 23 were forced, I suppose, into situations by the pandemic,  
 24 that actually some of these have ended up being huge  
 25 improvements in patient care, and that those continue.

17

1 enabled those to be immediately re-instigated and that  
 2 the capabilities could then be spread, mitigating, to  
 3 some extent, against another pathogen which spreads as  
 4 rapidly as Covid-19.

5 **Q.** In your field of clinical medicine, how does one ensure  
 6 that healthcare specialists and the health system  
 7 remains well prepared for a future unknown contingent  
 8 hazard whilst at the same time having to deal with the  
 9 more immediate, the more practical day-to-day demands  
 10 and health emergencies which all clinicians are faced  
 11 with? How can you keep the system at a high state of  
 12 readiness when it has to deal with the day-to-day  
 13 reality of running a healthcare system? How do we deal  
 14 with that?

15 **A.** I think that's extremely, extremely difficult. Our NHS  
 16 is at the moment working at or if not beyond full  
 17 capacity at all times. If you take my own area, the  
 18 labour ward, the babies keep coming, day and night, and  
 19 we don't have the luxury of saying, "There's going to be  
 20 an exercise, we're going to send six of you for mask  
 21 fitting", for example. We haven't got the luxury of  
 22 being able to have six spare midwives who could then go  
 23 off to do that exercise. What we do do is exercises  
 24 that are relevant and pertinent to the emergencies that  
 25 might happen on a labour ward. Very engaged staff,

19

1 **Q.** It is obvious that, along with all your colleagues, one  
 2 of the greatest problems faced by scientists and  
 3 healthcare specialists and administrators during the  
 4 onset of the pandemic was the need to scale up the  
 5 diagnostic testing and the contact tracing systems in  
 6 light of the pandemic. Practically, what capabilities,  
 7 in your view, need to be maintained to ensure that in  
 8 future there can be a much better process by which our  
 9 facilities and our procedures can be scaled up to deal  
 10 with the likely numbers from the next severe pandemic?

11 **A.** I suppose if -- and if I can give you then the example  
 12 I've alluded to, are other countries. So eventually, in  
 13 March of 2020, I had a very, very helpful meeting with  
 14 the Chief Medical Officer of Singapore, who I happen to  
 15 know, so that was through an informal contact. He and  
 16 many of his staff and our staff in the  
 17 Scottish Government met together remotely, and what  
 18 really struck me was that they had had a taskforce which  
 19 had sat dormant following their outbreaks -- outbreak of  
 20 SARS, and that taskforce had within it the capabilities  
 21 similar to what you are discussing here. They were able  
 22 to immediately mobilise that and did so way back in  
 23 November 2019. It is that sort of example and that  
 24 sort of, I suppose, capability that we could easily keep  
 25 dormant, that we could easily have exercises that

18

1 those drills happen extremely frequently because we need  
 2 to be slick, but it's very difficult, without increased  
 3 capacity within the NHS, to think how we could ever have  
 4 exercises that would be -- well, able to free up staff  
 5 for a start, but also that we would be able to run  
 6 exercises where staff could become engaged, because they  
 7 are unable, certainly at the moment, to leave work that  
 8 is prescient and the emergencies that are sitting facing  
 9 them that minute, that day, especially when it's  
 10 something that's, one, an unknown, and, secondarily, the  
 11 timing is unknown. To engage people in something that  
 12 may or may not happen in several years' time is always  
 13 going to be very, very difficult in a hard-pressed  
 14 system.

15 **Q.** As the CMO, Dr Calderwood, you must have given that  
 16 conundrum a great deal of anxious consideration.

17 **A.** Absolutely.

18 **Q.** You are, of course, aware of the need to ensure that  
 19 Scotland was prepared for whatever health emergency  
 20 might eventuate for pandemic outbreak and so on and so  
 21 forth. Where does the answer lie? Is it in having  
 22 an obvious, clear, transparent process by which the  
 23 right people are made to exercise and to train for the  
 24 relevant and correct future risks?

25 **A.** Again, if I take you back to Singapore, they have some

20

1 flex in the system. There's some slack, some flex, so  
2 that the taskforce -- which is run by different people  
3 with different skills, but that there would then be  
4 exercises, who would be able to take, for example,  
5 midwives from the labour ward, because not every midwife  
6 is needed at every second for their own emergencies.

7 So I think the planning there and the potential  
8 needs to be built into our capacity in the NHS in  
9 Scotland.

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

11 My Lady, you have you've granted permission --

12 **LADY HALLETT:** Just before you do, I just have one question.

13 **MR KEITH:** Yes, I'm so sorry.

14 **Questions from THE CHAIR**

15 **LADY HALLETT:** Dr Calderwood, you mentioned that there's  
16 a tendency to slip back into old ways, and I think you  
17 suggested there were examples of it happening in the  
18 NHS. Do you have any examples of where, instead of  
19 learning from the pandemic, we've slipped back into old  
20 ways?

21 **A.** So, for example, in the pandemic 60% of orthopaedic  
22 outpatients were either not done at all in fact or done  
23 remotely. That suited everybody. It suited the  
24 patients, who didn't want to come to hospital just to be  
25 told they were all right, because they already knew they

21

1 analysis in Scotland.

2 Now, to put those into context for you, the Inquiry  
3 has heard some evidence already about the importance of  
4 data collection, in particular from professors  
5 Sir Chris Whitty and Sir Patrick Vallance. I don't  
6 know, Dr Calderwood, have you had an opportunity to see  
7 or read their evidence?

8 **A.** No, I'm afraid I haven't.

9 **Q.** Well, literally in a few sentences, the important  
10 takeaways for Professor Sir Patrick Vallance were that  
11 data is important for decision-making, ie the planning  
12 phases, and that the paucity of data at the start of the  
13 pandemic led to problems, "you were flying more blind  
14 than [one] would [like] to", and for both of them  
15 an important takeaway was that the gathering of basic  
16 data, such as how many people are in hospital and how  
17 many are in intensive care, assist in order to evaluate  
18 the spread and who is likely to be most at risk, and  
19 that is of fundamental importance during the course of  
20 a pandemic.

21 Would you agree with all of that?

22 **A.** It's absolutely true to say that our data was -- there  
23 was a paucity of data, absolutely, and that very, very  
24 clear -- at the beginning, when we were struggling with  
25 our decision-making, that lack of data really, really

23

1 were all right, and it also suited the hospital  
2 capacity. We're already seeing signs of the, "Well,  
3 we'll just see them this once", or ... so there's  
4 a drift where actually we had -- risks were mitigated  
5 against, people could telephone if they were concerned,  
6 it wasn't that people weren't being seen who needed to  
7 be, and I see that that gradual drift will move into  
8 other areas. But it's already happening.

9 **LADY HALLETT:** Thank you.

10 **MR KEITH:** My Lady, you've granted permission to Covid-19  
11 Bereaved Families for Justice United Kingdom to ask  
12 five minutes' worth of questions, and five minutes also  
13 to Scottish Covid-19 Bereaved Families for Justice.

14 **LADY HALLETT:** Thank you.

15 **MR KEITH:** Two topics.

16 **LADY HALLETT:** Ms Munroe.

17 **Questions from MS MUNROE KC**

18 **MS MUNROE:** Thank you, my Lady.

19 Dr Calderwood, can you hear and see me?

20 **A.** I can hear you, I can't see you at the moment, no.  
21 I can see you now.

22 **Q.** Thank you very much. My name is Allison Munroe and  
23 I ask questions on behalf of Covid-19 Bereaved Families  
24 for Justice UK. Just a few questions, please,  
25 Dr Calderwood, in relation to data collection and

22

1 affected how rapidly and also how effectively we could  
2 make those decisions.

3 **Q.** Thank you.

4 Professor Woolhouse, who will be giving evidence in  
5 fact later today, makes reference to the Early Pandemic  
6 Evaluation and Enhanced Surveillance of Covid-19, better  
7 known as the EAVE study, which was led by  
8 Professor Aziz Sheikh, at Edinburgh University. He  
9 references that, Professor Woolhouse, in his statement,  
10 saying that it was one of the notable success stories  
11 that came out of the pandemic, and that effectively  
12 Professor Aziz and his team linked demographic and near  
13 realtime clinical data from almost the entire population  
14 of Scotland and monitored it on a daily, weekly basis,  
15 looking at the progress of Covid, and evaluated the  
16 effectiveness of therapeutic interventions in  
17 approximately 5.4 million individuals registered in  
18 general practices across Scotland.

19 Professor Woolhouse also says this, though, at  
20 paragraph 21 of his statement, and there is no need to  
21 bring it up:

22 "Issues with data access had been raised repeatedly  
23 by me and others prior to 2020. For example, as part of  
24 a correspondence with the office of the then  
25 CMO Scotland, I wrote in May 2018: 'My personal view is

24

1 that the system for accessing health data in Scotland is  
2 terminally dysfunctional ... This is a hugely  
3 disappointing state of affairs and one that urgently  
4 needs attention. I dread to think of the consequences  
5 if we ever find ourselves facing a health emergency such  
6 as pandemic influenza'."

- 7 Dr Calderwood, do you accept that  
8 Professor Woolhouse repeatedly raised that particular  
9 issue before 2020?
- 10 **A.** I'm interested to hear of that email. I'm afraid at the  
11 moment I don't recall receiving and reading that, but  
12 I would be absolutely very, very happy to have that  
13 email looked at and see what my response to that was at  
14 the time and what actions I took when  
15 Professor Woolhouse wrote to me.
- 16 **Q.** That sort of answers my next question, then, whether it  
17 had been raised personally with you. You don't recall  
18 the email; do you recall any occasions when  
19 Professor Woolhouse raised this issue personally with  
20 you?
- 21 **A.** Professor Woolhouse emailed in, I think, February of  
22 2020 and did visit me personally in my office, I think  
23 in February or March 2020, I do recall those meetings.
- 24 **Q.** Was this issue of data, the paucity of data collection  
25 and analysis, raised with you, and if so what was your

25

1 data access and data collaboration in a small country.  
2 We should be able to use, as you've quite rightly  
3 illustrated with the EAVE study -- and which then  
4 of course was very rapidly mobilised into the EAVE II  
5 study -- and I know that was a frustration not only from  
6 myself and my Chief Scientist at the time but from many  
7 people in research and development in the NHS in  
8 Scotland.

9 **MS MUNROE:** Thank you very much, Dr Calderwood.  
10 My Lady, thank you, those are my questions.

11 **LADY HALLETT:** Thank you very much, Ms Munroe.  
12 Ms Mitchell.

#### 13 Questions from MS MITCHELL KC

- 14 **MS MITCHELL:** My Lady, I hesitate to contradict my learned  
15 friend, but I think we have been given ten minutes.  
16 I don't think we'll take that long, but lest anyone  
17 thinks that I'm overstaying my welcome asking questions.  
18 Dr Calderwood, can you hear me and see me?
- 19 **A.** Yes, I can, thank you, Ms Mitchell.
- 20 **Q.** Dr Calderwood, in your statement, we don't need to bring  
21 it up, but for purposes of the record it's INQ000182605,  
22 page 3, paragraph 8, you say:  
23 "These regular pandemic preparedness exercises are  
24 key policies in this context and formed the roadmap for  
25 dealing with a pandemic. These policies were part of

27

1 response?

- 2 **A.** I don't recall the specifics of the paucity of data  
3 being raised. I do recall that he talked to me about  
4 modelling of the coronavirus and what that -- effects  
5 that might have in the community and how we might need  
6 to react to it.
- 7 **Q.** Thank you.
- 8 Finally, then, another reference,  
9 Professor Crossman, you've mentioned him already today.  
10 My Lady, for reference purposes, we don't need to bring  
11 it up, but his statement is INQ000185342, paragraph 14  
12 of that statement, Professor Crossman says that data  
13 collection and analysis was distributed between Public  
14 Health Scotland, Scottish Government analysts and the  
15 Chief Statistician in Scotland, and he suggests that  
16 "a single unified data source for information, analysis  
17 and research might be a desirable aim".
- 18 My question, Dr Calderwood, is this: to what extent  
19 was this issue of data collection and analysis  
20 considered prior to the formation of Public Health  
21 Scotland?
- 22 **A.** So, again, I wouldn't have been personally involved in  
23 those conversations but I have to say that I agree with  
24 Professor Crossman, and one of the frustrations I think,  
25 as CMO, and in talking to him, was that complexity of

26

1 a four-nation approach to the threat of a pandemic to  
2 ensure that expert knowledge and experience was shared  
3 across the four nations ..."

4 Now, what I want to ask you about really is two  
5 particular areas of the four nations approach. One, the  
6 experience and the sharing of that experience; and, two,  
7 the sharing of expert knowledge.

8 First, I understand from reading the disclosure that  
9 you delegated Professor Sir Gregor Smith, the  
10 Deputy CMO, to attend Exercise Cygnus; is that correct?

- 11 **A.** Yes, that's correct.
- 12 **Q.** Presumably, given the importance of that, after he went  
13 to that he would come back and debrief you, talk about  
14 the issues, that sort of thing?
- 15 **A.** So that's not my recollection, Ms Mitchell. What --  
16 with the CMO, I suppose, the delegation to somebody as  
17 competent as Professor Sir Gregor Smith, had there been  
18 any particular issues or concerns I would have expected  
19 to have a briefing on that, but when I was delegating  
20 him to attend such a meeting, I would not necessarily  
21 have had a detailed read-out, no.
- 22 **Q.** Do you recall any issues being raised with you in that  
23 manner?
- 24 **A.** I don't, no.
- 25 **Q.** I wonder if we can have a look at, on the screen,

28

1 Inquiry statement INQ000006210 and that's a one-page  
2 document.

3 I'm just waiting until it comes up on the screen.

4 **A.** Could I have that zoomed a little larger? I can't see  
5 that. Thank you.

6 **Q.** Yes, certainly.

7 **A.** Thank you.

8 **Q.** What I'm going to ask you to look at is the paragraph  
9 which starts:

10 "Whilst DAs found the discussions on the  
11 escalation ..."

12 Thank you very much, it's been highlighted for you.

13 "Whilst DAs found the discussions on the escalation  
14 of contingency plans useful, there was a feeling that  
15 the issues raised, particularly in population-based  
16 triage, were rushed and not widely shared prior to the  
17 exercise. As a result, DAs felt they were not able to  
18 contribute as much as they would have liked."

19 Now, this is a document which is a Civil  
20 Contingencies Secretariat round table with devolved  
21 administrations post Exercise Cygnus. Do you recognise  
22 any of the views shared there in respect of  
23 Exercise Cygnus?

24 **A.** Not in respect of Exercise Cygnus, no, I don't,  
25 Ms Mitchell.

29

1 "Public Health England and GO-Science to share  
2 modelling on the projected use of antivirals with the  
3 Devolved Administrations."

4 Were you aware of that sharing process going to  
5 happen?

6 **A.** No, I'm not aware of the detail.

7 **Q.** Okay.

8 We've heard that you've given indication of  
9 practical difficulties in communication with SAGE,  
10 literally our wife, which even in this Inquiry doesn't  
11 seem to have necessarily held up so well from Scotland.

12 What I would like to know, Dr Calderwood: was there  
13 a formal system for sharing the knowledge and  
14 information, to share that expertise and knowledge, as  
15 between the UK and devolved administration?

16 I understand you had a good relationship with other  
17 CMOs, but what I'm wondering was: was there a structure  
18 underlying that where we could be sure we were getting  
19 the relevant information?

20 **A.** I do believe so. So I believe that after these sort of  
21 UK exercises that civil servants would have taken that,  
22 the outputs, and those would be shared with civil  
23 servants in the other nations, yes.

24 **Q.** Were you the recipient of that sharing?

25 **A.** I may have been copied in, I may not have been,

31

1 **Q.** Would you have expected that to be shared with you, had  
2 it been the view of those representing Scotland, ie  
3 Professor Sir Gregor Smith?

4 **A.** So if I may answer with a slightly longer ... so  
5 sometimes these large four nation meetings, with a lot  
6 of people attending them, and depending on how many  
7 people are in the room or how much is done remotely,  
8 I think that that sentence about the DAs feeling that  
9 they couldn't contribute or that there was rushed ...  
10 what's the word? That there was rushed -- a shorter  
11 time left for the DAs often at the end of the meeting or  
12 that they didn't feel always that they would have their  
13 voices heard. So that is my experience of some, not  
14 all, very much not all, of some meetings of this nature.

15 I don't, as I've said already, recall this  
16 specifically, reading this or this being alerted to me  
17 about Operation Cygnus, no.

18 **Q.** Thank you.

19 Moving on, we've heard about your close working  
20 relationship with the CMOs for the nations. I want to  
21 ask you about sharing expert knowledge with the devolved  
22 administrations in relation to Exercise Cygnus.

23 I wonder if I could have on the screen INQ000006129,  
24 Inquiry document. This is a COBR meeting notice, and in  
25 that at bullet point 4 it was noted that:

30

1 I'm afraid I don't recall.

2 **MS MITCHELL:** No further questions.

3 **LADY HALLETT:** Thank you very much, Ms Mitchell.

4 Thank you very much, Dr Calderwood, thank you for  
5 joining us.

6 **THE WITNESS:** Thank you.

7 **(The witness withdrew)**

8 **MR KEITH:** My Lady, the next witness is

9 Professor Jim McManus, please.

10 **PROFESSOR JIM McMANUS (sworn)**

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

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

14 **A.** My name is Jim McManus.

15 **Q.** Mr McManus, you have provided a statement, INQ000183419,  
16 to which you have appended your signature and signed the  
17 declaration of truth. Is that correct?

18 **A.** That is correct.

19 **Q.** Professor, thank you for your assistance.

20 You have provided that statement. The Association  
21 of Directors of Public Health of which you are the  
22 president is a core participant in these proceedings,  
23 and you've also very helpfully provided for a survey,  
24 which was requested in the January of this year, to be  
25 sent to Directors of Public Health and the results of

32



1 that survey have been communicated to the Inquiry, and  
2 for that we are very grateful to you.

3 You're giving evidence today because, as I say, you  
4 are the president of the ADPH. Is that body the  
5 representative body for directors of public health in  
6 the United Kingdom?

7 **A.** Yes, that's correct, we represent the professional voice  
8 of directors of public health.

9 **Q.** Does every director of public health have the right to  
10 be a member of your association?

11 **A.** Yes.

12 **Q.** Does that include deputy directors of public health and  
13 consultants or just directors of public health?

14 **A.** Deputy directors and consultants can become associate  
15 members. They don't have quite the full rights of  
16 members but they do have access to training and policy  
17 advice and the other services we provide.

18 **Q.** Roughly how many members are there in the ADPH?

19 **A.** We have about just under 200 full members and not quite  
20 the same level of associate members. The detail is in  
21 our pack, which I can refer to, but that's about that  
22 number.

23 **Q.** That's all right, we only wanted the broad number.

24 The association doesn't, and this is the relevancy  
25 of my question, represent, for example, local authority

33

1 the population, advising the NHS and the local authority  
2 on commissioning functions, they have a series of  
3 commissioning responsibilities for services like sexual  
4 health, drugs and alcohol, and a variety of other  
5 things. There's about 142 individual things that they  
6 do. They also have functions in terms of health  
7 protection planning and assurance, and they have a duty  
8 to be assured and to assure the Secretary of State that  
9 the health protection system is working. They also have  
10 a duty to improve and protect and promote the health of  
11 the population which they serve.

12 **Q.** So just to pause for a moment on some features of those  
13 functions, they are what is known as the statutory chief  
14 officer in a local authority, and you've just referred  
15 to upper tier local authorities; are directors of public  
16 health located in what is known as upper tier local  
17 authorities, and they have been, I think, since around  
18 about 2013, does that mean county councils, unitary  
19 authorities, metropolitan councils and London boroughs?

20 **A.** Yes, correct, and that's in England. In Wales and  
21 Scotland they're in the NHS and Northern Ireland they're  
22 in the Northern Ireland public health service.

23 **Q.** We'll come to them in a moment.

24 **LADY HALLETT:** More slowly, please.

25 **MR KEITH:** In relation to England, that is where they

35

1 officers generally or local resilience forums; you are,  
2 as it says on the tin, concerned with directors of  
3 public health?

4 **A.** Yes, absolutely.

5 **Q.** All right.

6 Directors of public health are individual trained,  
7 accredited, registered specialists in public health, are  
8 they not?

9 **A.** Indeed.

10 **Q.** The first Medical Officer of Health in the  
11 United Kingdom, according to your witness statement, was  
12 appointed in 1847 in Liverpool?

13 **A.** That's right, yes.

14 **Q.** So they have a long and glorious history in these  
15 islands.

16 Could you just tell us, please, today what their  
17 primary functions are, with reference to their statutory  
18 position in a local authority, their responsibility for  
19 the health of the community, and also dealing with  
20 outbreak management, so with those three pillars in  
21 mind.

22 **A.** So in England directors of public health are placed in  
23 upper tier local authorities, that's county councils and  
24 unitary authorities, and they have a set of  
25 responsibilities including assessing the health needs of

34

1 operate?

2 **A.** Yes.

3 **Q.** They are not, so that we may be clear, environmental  
4 health departments, they are statutory directors of  
5 public health, and they're also not public health  
6 consultants within the NHS, the NHS has its own public  
7 health structures?

8 **A.** That's correct. What you may find, because directors of  
9 public health have a duty to advise the NHS, many of us  
10 may have honorary contracts with the NHS where we advise  
11 the NHS.

12 **Q.** Right.

13 **A.** And apologies for speaking too fast.

14 **LADY HALLETT:** Don't worry, lots of us do it.

15 **MR KEITH:** You may speak louder, however, if you wish.

16 Are there around 350 directors of public health in  
17 England?

18 **A.** There's about 151 in England in terms of local authority  
19 chief officers in every local authority. The 350 number  
20 is more like to be environmental health officers.

21 **Q.** Ah.

22 **A.** Because you will find environmental health officers are  
23 in district councils -- chief environmental health  
24 officers are in district councils as well. It can be  
25 confusing, I appreciate that.

36

- 1 **Q.** In Scotland, do the directors of public health sit  
2 within the Scottish Government, local authorities or NHS  
3 boards?  
4 **A.** NHS boards.  
5 **Q.** How many are there of them in Scotland?  
6 **A.** There's one for each NHS board, so that would be eight,  
7 if I remember the number of NHS boards correctly.  
8 **Q.** Then, separately, there are a number of environmental  
9 health functions which are discharged within the local  
10 authorities, but that's not the matter -- the concern of  
11 directors of public health?  
12 **A.** Correct.  
13 **Q.** Then in Wales, where does the director of public health  
14 sit?  
15 **A.** Again, they sit in local health boards, so the seven  
16 local health boards in Wales, rather than the 22 Welsh  
17 unitary authorities.  
18 **Q.** Northern Ireland, how many directors of public health  
19 are there?  
20 **A.** One in the Northern Ireland public health service.  
21 **Q.** So in Northern Ireland, the sole director of public  
22 health is not attached to a local authority but sits  
23 within the public health structure generally?  
24 **A.** Yes.  
25 **Q.** Within the NHS in Northern Ireland or within the

37

- 1 complexities and nuances which can sometimes be  
2 puzzling.  
3 **Q.** So --  
4 **LADY HALLETT:** Nothing new there then, I'm afraid.  
5 **MR KEITH:** We have been looking at, in the last few minutes,  
6 the issue of health improvement. Now turning your  
7 focus, please, to outbreak management plans, the second  
8 pillar of a director of public health's functions  
9 concerns, does it not, the obligation to ensure that  
10 there is proper training for outbreaks, proper processes  
11 in place to monitor outbreaks, and to deal with all the  
12 ancillary obligations which might be engaged, public  
13 health campaigns arising out of a health emergency,  
14 giving advice to emergency response services, and  
15 liaising with the local council and those services as to  
16 how best to respond?  
17 Are these functions provided for by statute?  
18 **A.** Some in statute, some in guidance to the directors of  
19 public health in different nations, some are derived  
20 from good practice sources which are consensus  
21 statements between the various organisations, and some,  
22 frankly, are custom and practice of good health  
23 protection which is put into our training.  
24 So there is a hierarchy, if you like, of  
25 responsibilities, my Lady.

39

- 1 Executive Office, do you know?  
2 **A.** The Northern Ireland public health office is part of  
3 the -- their version of the Department of Health and  
4 Social Care, so it's an executive agency rather than  
5 purely NHS provider.  
6 **Q.** So it's an arm's length body, one might call it,  
7 attached to the Executive Office, the governance, the  
8 governmental system in Northern Ireland?  
9 **A.** Yes.  
10 **Q.** All right.  
11 You've referred rather more prosaically perhaps to  
12 some of the matters with which directors of public  
13 health are concerned: drugs and alcohol-related issues,  
14 obviously mental health-related issues, illicit tobacco,  
15 public health aspects of crime and disorder. Are those  
16 all areas with which directors of public health become  
17 concerned because they all relate, to a greater or  
18 lesser extent, to the need, the statutory requirement to  
19 improve the public health of the populus?  
20 **A.** Yes. If you take mental health, the duties of  
21 commissioning services to provide mental health sit  
22 largely with the NHS and with social services and social  
23 work departments, whereas the director of public health  
24 is more of a public mental health role, which is suicide  
25 prevention -- suicide reduction, my Lady. So there are

38

- 1 **Q.** Is every local authority obliged to have a specialist  
2 director of public health?  
3 **A.** Every local authority in England must have a specialist  
4 director of public health as their chief officer, and  
5 the statutory guidance was issued in 2013, but revised  
6 last week.  
7 **Q.** It's important we don't lose sight of the public health  
8 agencies in the four nations.  
9 Perhaps we could have up your statement, which is  
10 INQ000183419, please, paragraph 94. I'm sorry to say  
11 that it's not paginated, and I therefore can't tell you,  
12 I'm afraid, which page paragraph 94 appears on.  
13 **A.** I have it open here.  
14 **Q.** Do you have a copy of your statement with the page  
15 numbering on it, Professor?  
16 **A.** I don't have the page numbers, unfortunately, no.  
17 **Q.** No, we have the paragraph numbering, we just don't have  
18 the page numbering.  
19 There we are, thank you very much.  
20 So in the United Kingdom, there are, of course,  
21 a number of public health agencies. If we could  
22 commence at paragraph 95, in England, there are two,  
23 of course, the UK Health Security Agency and the Office  
24 for Health Improvement and Disparities. You set out  
25 there their broad functions: OHID's function is to

40

1 improve public health and reduce health inequalities and  
2 the UKHSA's is for health protection.

3 To what extent would an individual director of  
4 public health engage with the national public health  
5 agencies, in this case in England?

6 **A.** On a reasonably regular basis. So engaging with UKHSA  
7 would be for outbreaks because UKHSA bear health  
8 protection responsibilities, they receive the reports,  
9 they will be part of incident management teams, say,  
10 for example, if you have a measles outbreak in your  
11 area. So there will be regular and ongoing liaison.

12 With OHID, the regional directors would be people  
13 who would have direct lines to directors of public  
14 health and back, so most directors of public health come  
15 together in regional groups in England, and UKHSA and  
16 OHID are usually part of those regional groups. So the  
17 liaison is quite frequent.

18 **Q.** That's very clear, thank you.

19 Paragraph 96, Northern Ireland, there is a Public  
20 Health Agency established in 2009. Are you able to say  
21 whether or not the links are analogous to those that  
22 you've described in relation to England?

23 **A.** The Northern Ireland links will be slightly different  
24 and various, so there will be links to the various local  
25 authorities, my Lady, for different functions like

41

1 strategic co-ordinating groups, responses.

2 They obviously have a major role in emergency  
3 preparedness. To what extent can LRFs draw upon the  
4 expertise of directors of public health when planning  
5 and responding to public health emergencies?

6 **A.** So when LRFs are planning for emergencies, the director  
7 of public health is at their disposal. So I, for  
8 example, am often asked by our local resilience forum to  
9 input into the risk register and to plans.

10 I think the important thing perhaps to assist  
11 my Lady is that health protection and civil resilience  
12 have significant overlaps but there are also significant  
13 distinctions. So, for example, if you were taking  
14 a flood, there are obviously significant health issues  
15 that arise because of a flood, not least from  
16 contaminated water, and the advice and the guidance of  
17 the director of public health will be important then.  
18 But, similarly, having a health protection plan or at  
19 least a list of things that need to be done during those  
20 issues will be important. The resources of the LRF such  
21 as the mobilisation of equipment and assets will be  
22 crucial. They're not under the direct control of the  
23 director of public health, but a director of public  
24 health will need them to achieve health protection  
25 outcomes in a flood, for example.

43

1 environmental health and other functions, care homes.

2 There will also be links to the health and social  
3 services boards and general public campaigns. This is  
4 a pattern you will see repeated across the  
5 United Kingdom. Everyone does it slightly differently.

6 **Q.** Scotland, there is the Public Health Scotland agency,  
7 with comparable functions to those of its brother and  
8 sister agencies.

9 **A.** Indeed, and they meet regularly, the directors of public  
10 health in Scotland, with Public Health Scotland on  
11 a reasonably regular basis.

12 **Q.** Then Wales, finally, there is a Public Health Wales body  
13 established in 2009, and therefore we presume there are  
14 links between that public health agency and the NHS  
15 health boards which, in Wales, employ the directors of  
16 public health and their teams?

17 **A.** Indeed, and they meet regularly too.

18 **Q.** All right.

19 Remaining focused on some of the structural links,  
20 please, in your witness statement at paragraph 201 --  
21 you don't need to turn to it -- you say that directors  
22 of public health do not routinely sit on local  
23 resilience forums. Local resilience forums are those  
24 important bodies at local level primarily engaged to  
25 deal with planning and preparedness and also, through

42

1 **Q.** So, Professor, very practically, imagine that there is  
2 a health emergency in a local area, perhaps a modest  
3 pathogenic outbreak or, I don't know, a particularly  
4 serious incidence of food poisoning. Who leads the  
5 emergency response? Is it the local resilience forum  
6 comprising Category 1 and Category 2 responders? Is it  
7 a strategic co-ordinating group comprising Category 1  
8 and 2 responders and led by the police or the emergency  
9 services? Or would it be a director of public health  
10 leading an outbreak control committee or some such body?  
11 Who is in charge?

12 **A.** It will depend entirely on the nature of the incident.

13 So if you have a measles outbreak, it will be  
14 an incident management team with the director of public  
15 health, the relevant national agency, in the case of  
16 England UKHSA, local environment, mental health, and  
17 anybody else we need, for example, such as school  
18 headteachers. If it were a flood, then it would be more  
19 likely to be led by the LRF. If you had a significant  
20 blood-borne virus outbreak, it wouldn't be led by the  
21 SCG or the LRF, for example, because you're not going to  
22 be deploying cordons and fire engines and other pieces  
23 of equipment.

24 So it depends entirely on the nature of the  
25 incident. Health protection incidents will be led by

44

1 the director of public health and local environmental  
 2 health in partnership with UKHSA.

3 **Q.** Who calls who to say, "In the context of this particular  
 4 health emergency, it must be the director of public  
 5 health that takes the lead", or who calls the director  
 6 of public health to say, "In this emergency we would  
 7 like you, please, to attend the local resilience forum  
 8 or the strategic co-ordinating group and take charge"?  
 9 Who has that power?

10 **A.** Essentially any Category 1 responder has the power to  
 11 kind of call an incident, but if it's a health  
 12 protection issue, in practice if I know about it first,  
 13 I will call UKHSA and the environmental health  
 14 department and convene a team. If they know about it  
 15 first, they will convene a health protection team, and  
 16 we will meet together. So an incident management team  
 17 will occur. So if you have an outbreak of measles in  
 18 a school, for example, then usually the call will come  
 19 through the UKHSA and the meeting will convene with the  
 20 director of public health.

21 **Q.** Does it work well in practice, Professor? There is  
 22 obviously a world of difference between flexibility and  
 23 confusion. Is there an argument for having the director  
 24 of public health in a local authority area an ex officio  
 25 member of the local resilience forum, so that he or she

45

1 because some LHRPs, my Lady, span multiple areas, such  
 2 as in London. In other areas the LHRP is coterminous  
 3 with the geographical area of the director of public  
 4 health. So you may find a single LHRP covering the area  
 5 of four, five or more directors of public health in  
 6 England or one director of public health.

7 I would put that down to a need to better understand  
 8 local variation when planning national guidance.

9 **Q.** Are local health resilience partnerships only ever  
 10 regional, so do they sit above geographically local  
 11 resilience forums, or do they both occupy broadly the  
 12 same space?

13 **A.** They are not always coterminous, so if you may take,  
 14 for example, a local resilience forum that covers the  
 15 entire area for one police force, you may find more than  
 16 one police force. You may find there is more than one  
 17 local health resilience partnership in that, because  
 18 currently the local health resilience partnership may  
 19 follow the geographical boundaries of the integrated  
 20 care system.

21 So some of us have a local resilience forum and  
 22 a local resilience partnership that is the same, and  
 23 others find we have more than one local resilience forum  
 24 or one local resilience forum and more than one local  
 25 health resilience partnership. It is something which

47

1 may never be left out of account?

2 **A.** I would say yes. I think many of our members would say  
 3 yes, my Lady. In some places directors of public health  
 4 have exceptionally good relationships with their LRF.  
 5 We are dependent on culture relationships and  
 6 partnership, and in my personal experience those work,  
 7 but it does no harm for that to be underpinned by  
 8 exceptionally clear guidance and rules.

9 One of the difficulties, I think, is that the Civil  
 10 Contingencies Act 2004 and the Public Health Act 1984  
 11 perhaps do not always align in their expectations of  
 12 systems, and people do not always understand the  
 13 complexities and the interrelationships when they create  
 14 national guidance.

15 **Q.** Just to add yet further complexity, Professor, and you  
 16 know what's coming, there is something also called  
 17 a local health resilience partnership, which we believe  
 18 comprises local health organisations, regional  
 19 representatives of public health agencies -- you have  
 20 referred to the regional representatives of the PHE  
 21 a few moments ago, or UKHSA as it now is, and others.

22 Do directors of public health sit on that body, the  
 23 local health resilience partnership?

24 **A.** Yes, and by law they are expected to co-chair the local  
 25 health resilience partnership. The complexity comes in

46

1 could be tidied up.

2 **Q.** It's a recipe for confusion and duplication, is it not?

3 **A.** I think it can be if you don't have the good  
 4 relationships and good understanding, I would agree.

5 **Q.** All right.

6 Turning to another part of the structure, a health  
 7 emergency may well have an impact not just on the  
 8 healthcare services in a locality but on the adult  
 9 social care sector. To what extent do directors of  
 10 public health work with local authorities in their  
 11 provision of social care and with the private, largely  
 12 private, care providers?

13 **A.** There are several ways. The first way of interest to  
 14 this Inquiry, my Lady, might be infection control  
 15 guidance and infection control in care homes, which is  
 16 often shared between directors of public health and the  
 17 local NHS.

18 The second route may be in terms of providing  
 19 training and advice.

20 The third route is that directors of public health  
 21 have a legal responsibility to provide advice and  
 22 guidance to NHS commissioners, and many of us also take  
 23 that duty seriously with social care in terms of  
 24 providing evidence for effective care, prevention  
 25 services in care homes and so on, and a number of us

48

1 provided, during the pandemic, trauma training for care  
2 workers. In fact I went into care homes personally and  
3 did some -- delivered some of that training. So there  
4 are links.

5 I think it would be fair to say that those  
6 responsibilities could be clarified better, particularly  
7 in relation to infection control, because some of those  
8 responsibilities overlap somewhat.

9 **Q.** All right.

10 **LADY HALLETT:** Pause there? 11.15.

11 **MR KEITH:** Ah, thank you. Saved by the bell. Thank you.

12 **LADY HALLETT:** We take a break for everybody's sake but  
13 particularly our wonderful stenographer. Back at 11.30.

14 (11.15 am)

(A short break)

16 (11.30 am)

17 **MR KEITH:** Professor, it is obvious from your witness  
18 statement that the Health and Social Care Act 2012 was  
19 a seminal moment in the life of public health functions,  
20 because it transferred most public health functions to  
21 local government from the NHS in England.

22 Could you just outline for us, please, the major  
23 challenges which that transfer gave rise to in terms of  
24 the cultural organisational differences, the lack of  
25 understanding as to what was expected of directors of

49

1 opportunities. The ability to work with communities in  
2 ways we didn't. And forgive me, I may not have answered  
3 the last two parts of your question.

4 **Q.** The cultural differences, the lack of understanding on  
5 the part of local authorities as to what directors of  
6 public health do, and, secondly, accessibility to data  
7 flow, because of course directors of public health were  
8 receiving data and transmitting data from a different  
9 environment, from within local authorities as opposed to  
10 the NHS.

11 **A.** Yes. So data has always been very challenging and data  
12 flows have been challenging, even with data agreements,  
13 and data agreements eventually have become more  
14 sophisticated, but certainly in the early days some of  
15 us got access to data by things like honorary contracts  
16 with the NHS, or data sharing agreements, which were  
17 very complex, and I think are a subset of the entire  
18 data sharing challenge that we have as a public sector  
19 in terms of sharing data.

20 Culturally, local authorities and the NHS are  
21 exceptionally different. In local authorities, elected  
22 members are essential if you want to be successful in  
23 public health. So there was a significant change  
24 exercise required in most areas. Some authorities did  
25 it exceptionally well, as the King's Fund report, the

51

1 public health, and the problems with data flows?

2 **A.** Certainly. I think there were multiple, so I'll  
3 necessarily summarise.

4 There was the difference in local authority and NHS  
5 structures and cultures. There was the fact that  
6 directors of public health retained some functions in  
7 relation to the NHS after transfer, my Lady, so the LHRP  
8 we've heard, but there was also a duty to advise and  
9 assist the NHS commissioners. There were even issues of  
10 pay structure --

11 **Q.** Would you go a bit slower, please, Professor.

12 **A.** Sorry, I do apologise.

13 **Q.** It's quite all right.

14 **A.** There were also issues of pay structures. There were  
15 issues of budgets and financial transfers and  
16 responsibilities and even down to discussions of who  
17 paid for what. So, for example, if you look at sexual  
18 health, paying for HIV testing is the responsibility of  
19 directors of public health, paying for HIV treatment is  
20 a responsibility of the NHS. But NHS clinicians  
21 delivering HIV services outside London often work in  
22 premises paid for by the director of public health to  
23 deliver sexual health services. So the complexity is  
24 a fact of our life, and those complexities came.

25 There were also, I think, other -- there were huge

50

1 second King's Fund report, in the bundle, concludes,  
2 others found some challenges.

3 My view, looking back on it, is it has brought many  
4 more assets than challenges and is the right place for  
5 us to be, but there are things that could be clearer.

6 The particular point, I think, Mr Keith, is the  
7 guidance. The guidance in 2013 was perhaps somewhat  
8 hastily written, and there were a number of areas which  
9 were unclear -- that had been unclear before 2013,  
10 my Lady. So perhaps the crystallisation of the  
11 functions of directors of public health in England has  
12 happened in some ways, I would say, since transfer  
13 rather than before.

14 **Q.** All right, thank you.

15 Budget. The public health grant is paid to local  
16 authorities by the DHSC, is it not?

17 **A.** Indeed.

18 **Q.** That grant of public money is then used by local  
19 authorities to discharge its public health functions  
20 through, primarily, the role of directors of public  
21 health. Has DHSC spend on NHS England increased or  
22 decreased in real terms since that transfer?

23 **A.** On NHS England it has increased.

24 **Q.** What about in relation to the block payment, the grant  
25 to local authorities?

52

1 **A.** It has decreased. There were a series of cuts starting  
2 in the financial year 2015 to 2016 which has cut  
3 between, depending on which estimate you read, 26% and  
4 33% in real terms out of the public health budget.

5 The Health Foundation estimates that £1 billion is  
6 missing from the public health grant from where it  
7 should be.

8 **Q.** We are not here to debate the merits of public sector  
9 cuts, funding cuts, but has the impact of those  
10 reductions in funding fallen equally across the  
11 four nations and the constituent parts of the  
12 four nations, or have some areas in fact, as it has  
13 transpired, been the subject of greater cuts?

14 **A.** So the public health grant is an England-only grant, and  
15 some areas -- there is analysis which shows that some  
16 areas have fared worse per head of population. So  
17 northern areas and areas of greater deprivation have  
18 seen a greater per capita reduction in spending power on  
19 the public health grant than some areas in the south.

20 **Q.** All right.

21 Now I'd like to turn you, please, to the specific  
22 issue of emergency preparation and preparedness. In  
23 your witness statement at paragraph 100 -- that's  
24 INQ000183419 again, please, thank you very much --  
25 you've set out a number of categories or headings:

53

1 delivery of prescription medicine; paragraph 119, the  
2 assistance that you gave to schools and the advice that  
3 you gave in relation to the closure of schools and the  
4 impact of the closure of schools; and at paragraph 120,  
5 elsewhere in your statement, the assistance that the  
6 directors of public health gave to directors of adult  
7 social care services who were concerned, of course, with  
8 the public health elements of decisions to shut, open or  
9 restrict access to care homes?

10 **A.** I think that is a very fair summary, yes.

11 **Q.** All right.

12 You've just mentioned the difficulty that directors  
13 encountered in dealing with central government.  
14 Obviously directors have to work with a range of  
15 government bodies, and particularly in central  
16 government, so not just the UKHSA and the local -- the  
17 national public health bodies and the OHID, but with  
18 civil servants in central government, with the CMOs, of  
19 course with other devolved administrations, as well as  
20 the NHS and the local authorities.

21 What were the problems that were generally  
22 encountered in dealing with, communicating strategically  
23 with, central government?

24 **A.** I think there were several. The first was that there  
25 was very much a top-down approach taken, which ...

55

1 preparation, prevention, prioritisation, collaboration  
2 and advice.

3 In the context of dealing with outbreaks, so  
4 outbreak management, do and did, in the context of the  
5 Covid-19 pandemic, directors of public health work in  
6 relation to taking a proactive approach to sourcing  
7 personal protective equipment, recalibrating their  
8 services, so that's to say services in relation to  
9 sexual health, drug treatment services and the like,  
10 co-ordinating and dealing with the local systems for  
11 testing and tracing, and, consistent with what you've  
12 said already, providing a primary source of knowledge  
13 and advice and information for all the numerous people  
14 who take part in the emergency response system at local  
15 level?

16 **A.** Indeed, and I think -- it, I think, could have been  
17 better had the cuts and the impact of austerity not  
18 happened, and I think could have been better had we had  
19 some better working with aspects of national government.

20 **Q.** I'll come on to that issue in a moment, but is that  
21 a broad summary of the areas that directors assisted  
22 with? I should add to those, while you think of the  
23 answer to that question, that your statement deals: at  
24 paragraph 117, with the help that was given in relation  
25 to the provision of food banks and parcels and the

54

1 The second was that it was often apparent that the  
2 departments we were dealing with had not read their own  
3 guidance about the role of the department, the director  
4 of public health, and were quite -- not clear about what  
5 we could and should do.

6 The third was setting up parallel systems when we  
7 could have used local capabilities to set up local  
8 capabilities for test and trace, for example.

9 I think the fourth challenge was sometimes we had no  
10 response or communication, and we found out at the same  
11 time as the rest of the population, on the 5 pm  
12 bulletin, about the new guidance.

13 If there was another challenge, I think it would be  
14 perhaps lack of understanding of the fact that directors  
15 of public health have to rely very heavily on their  
16 local communities and the voluntary sector, who have  
17 been amazing and without whom we would not have been  
18 able to do our role, and the same with environmental  
19 health officers.

20 And I think generally communication and lack of  
21 understanding of what our role is, and sometimes,  
22 actually, a lack of understanding of local authority  
23 capabilities, significantly.

24 **Q.** Now, that latter issue particularly, why does that  
25 matter? I mean, it is in the way of central government

56

1 to want to impose things by way of diktat, top-down  
2 communication, as you've described it, and it may well  
3 be that even in the best ordered systems relevant parts  
4 are left out of key communications or guidance. But  
5 insofar as directors of public health are, in their  
6 essence, local directors of public health, why does and  
7 why did it, in the course of the pandemic -- why did  
8 leaving them to some extent out of the loop matter when  
9 it came to the provision of public health  
10 countermeasures locally?

11 **A.** Firstly, because we are trained and expert in some of  
12 these, such as contact tracing. Secondly, we have  
13 a range of services, such as sexual health, which are  
14 equally expert in contact tracing. Third, we know our  
15 local areas and our local communities. So if I may give  
16 an example, my Lady, putting a vaccine centre in a golf  
17 club in a deprived area a mile and a half from the  
18 deprived area with no public transport is something we  
19 could help areas avoid.

20 I think the fourth reason I would give is that we  
21 have capabilities that we could mould and shape rapidly,  
22 such as test and trace, and it was pretty obvious when  
23 local directors of public health and local authorities  
24 took on test and trace additional work, that the  
25 improvement in test and trace was marked nationally in

57

1 through the ADPH with Professor Sir Chris Whitty, of  
2 course the CMO, and were there regular discussions  
3 between the Office of the CMO in England and  
4 counterparts in the four nations and directors of public  
5 health through the ADPH?

6 **A.** Indeed, and I think the communication from Sir Chris to  
7 us was exemplary, at times we were meeting weekly, and  
8 similarly our liaison with the other CMOs was extremely  
9 helpful, my Lady.

10 **Q.** So we've been discussing, Professor, the structural  
11 system and whatever inadequacies there were, as my Lady  
12 find them to be, that pre-existed the pandemic.

13 When it came to the impact of the pandemic itself,  
14 was the public health and the local public health system  
15 ready for or capable of dealing with the sheer scale and  
16 severity of the pandemic that in fact ensued?

17 **A.** I have to say partly yes and partly no, and the reason  
18 for partly no was partly because of funding. I think  
19 the national plan was unclear. We seemed to prepare for  
20 flu when a coronavirus, I would have thought, would have  
21 been a perfectly plausible scenario. A range of  
22 scenarios nationally were not explained. Some of the  
23 communication from national government was lacking.  
24 Participation in national exercises was unclear. And  
25 I don't believe we learned the lessons from the 2009

59

1 multiple reports.

2 **Q.** Was that the position throughout the pandemic, or with  
3 the passage of time did the communications between  
4 central government and local directors improve, and was  
5 there a greater understanding latterly of the huge  
6 significance of local public health advice and reliance  
7 upon local facilities for the purposes of test and  
8 trace, contact tracing and so on?

9 **A.** In part. I think it grew. It certainly became much  
10 better. The support of the Chief Medical Officer in  
11 working very closely with directors of public health  
12 from January onwards was helpful. What I think was  
13 still a problem was some departments still didn't  
14 understand what we did. In around May to June 2020, we  
15 produced, as a group of agencies with ADPH, the first  
16 guidance on local outbreak plans, and I was one of the  
17 people who wrote that guidance, and we identified the  
18 role of local directors of public health.

19 So it grew and it became clearer and communication  
20 improved and mechanisms improved dramatically, but for  
21 the first few months of the pandemic there were parts of  
22 central government that did not have a mailing list to  
23 reach out to directors of public health, they physically  
24 couldn't contact us.

25 **Q.** There was nevertheless good contact arranged in part

58

1 pandemic. I think the lack of resourcing was unhelpful.

2 I think there was also a view that government would  
3 create parallel systems rather than working with the  
4 capabilities we already had.

5 If I might make one final issue, this was seen as  
6 an NHS challenge, which meant -- which in some ways put  
7 a burden on the NHS, my Lady, to be in charge of  
8 something that was a public health challenge, not an NHS  
9 capacity challenge. So the roles about -- from the  
10 beginning, were about the NHS.

11 If I may give one example, we were informed by some  
12 bits of NHS England that they were going to take  
13 workforces that we commissioned and redeploy them on to  
14 wards, and by that I mean health visitors particularly,  
15 among others. Health visitors do vitally important work  
16 to protect very vulnerable children. If you had removed  
17 every health visitor in England and deployed them in  
18 a Covid ward, there would be significant safeguarding  
19 risks and children could be harmed.

20 So the culture of partnership ought to have been  
21 better where each part of the system values the other.

22 **Q.** My question was in fact directed more towards the impact  
23 of the sheer scale and size of the pandemic, but you've  
24 addressed many of the areas where, in your professional  
25 opinion, the system was not adequate and the reasons for

60

1 that. I'd just like to pick up some of the points from  
2 that answer.  
3 Firstly, your witness statement makes plain that  
4 national guidance and planning for emergencies needed to  
5 have done more to address health inequalities. Why, in  
6 the discharge of functions by directors of public  
7 health, is a better understanding of health inequalities  
8 necessary?

9 **A.** I think there are several reasons. Firstly, because  
10 people who are least -- have least access to health  
11 services and are least well are least able to withstand  
12 the multiple impacts of a pandemic on physical and  
13 mental health and economic impacts. They come off  
14 worse, as, for example, many reports have shown.

15 I think the second issue is that they are often most  
16 vulnerable for protective measures. So black men  
17 working in manual roles where they had to have contact  
18 with the public were at far more risk than people in  
19 professional roles who could work from home.

20 From time immemorial, every pandemic has hit those  
21 worst who have been least able to bear the burden. So  
22 health inequalities have to be at the centre, and  
23 I don't think -- and forgive me for perhaps not  
24 answering your question earlier -- that we did not  
25 anticipate the severity of this virus in the early

61

1 overridden by data privacy and data security. We do not  
2 have information and data governance right for  
3 an emergency in any part of the United Kingdom in the  
4 way it needs to be to save lives.

5 **Q.** Next, the King's Fund report, to which you again  
6 referred earlier, stated that not enough public health  
7 consultants had the necessary training, skill sets and  
8 experience. Is there now also a case for a more  
9 regularised and formalised structure of training of  
10 public health consultants along with directors of public  
11 health?

12 **A.** I would agree, very much so. There is health protection  
13 training and experience included in the requirements for  
14 training to become a consultant in public health or  
15 a registered specialist, but training beyond the minimum  
16 is vital in these roles, and should be continuous and  
17 indeed should be continuously assessed.

18 **Q.** In your statement, finally, at paragraph 253, you set  
19 out a number of reflections on the UK's preparedness and  
20 resilience nationally and locally. We've picked up many  
21 of these already in the course of your evidence, but  
22 just to focus on those few that remain.

23 So paragraph 253, it is the pre-penultimate page in  
24 the document, if that assists, electronically. Thank  
25 you very much.

63

1 stage, to which we were largely naive, and therefore  
2 I don't think our plans were sufficient nationally at  
3 any level of the system.

4 **Q.** All right. Exercises. You say that the survey, to  
5 which you have made reference, reported that many  
6 directors of public health stated that they had never  
7 been involved in nationwide exercises. Is there  
8 an overwhelming case for bringing directors of public  
9 health more formally into nationwide exercises for  
10 emergency planning?

11 **A.** Undoubtedly, so that you understand local capabilities  
12 and can use them effectively before the pandemic happens  
13 and can deploy them.

14 **Q.** The survey also reported that many directors of public  
15 health felt that there was insufficient data sharing  
16 arrangements between local NHS facilities and the local  
17 authorities, so in essence two vital parts of healthcare  
18 and social care response at a local level were not  
19 always aware of what each other was doing.

20 Is there now an equally strong case for examining  
21 the data sharing arrangements between the NHS and local  
22 authorities when it comes to emergency responses?

23 **A.** Undoubtedly. You will be aware, my Lady, that the Civil  
24 Contingencies Act has a power for information sharing,  
25 but there is a view among some agencies that that is

62

1 Is this what you suggest and recommend, Professor?  
2 At paragraph 253, in terms of the planning, the risk  
3 assessment process, the planning assumptions which  
4 underpinned the national response, there needs to be  
5 greater flexibility to respond to the different types of  
6 viruses and the ranges of scenarios which might  
7 eventuate. I'm not really asking you to address that in  
8 detail because my Lady has heard a great deal of  
9 evidence about that, but you would concur in the  
10 proposition that there needs to be more imagination and  
11 more flexibility when it comes to planning for future  
12 hazards?

13 **A.** Indeed. Indeed.

14 **Q.** 255 and 256, you believe that the role of the directors  
15 of public health should be clarified and strengthened,  
16 and we've debated this in relation to the links at  
17 a local level to local resilience forums and resilience  
18 partnerships, and that the links between the local  
19 resilience forums and the local health resilience  
20 partnerships structures need to be reviewed and  
21 clarified for the reasons that you've given already.

22 258, there needs to be more thought given to  
23 a better standing and reserve capacity in terms of the  
24 health protection functions or abilities of directors of  
25 public health, and that necessarily brings in the

64



1 question of resources and budgets, to which you've  
2 already made reference.  
3 260, there needs to be a better cross-government  
4 approach to responding to pandemics, with a recognition,  
5 you would say, more formally of the directors of public  
6 health as a local system leader; that is the issue we  
7 debated at the start concerning who is in charge when it  
8 comes to a local health emergency.

9 Then 262, finally, but no less importantly, the need  
10 to tackle inequalities in order to provide a better  
11 foundation for future public health response.

12 **A.** I would agree strongly with all of those points, yes.

13 **MR KEITH:** I am very pleased to hear that, since they are  
14 your recommendations.

15 My Lady, has granted permission to my learned friend  
16 Ms Munroe King's Counsel to ask questions.

17 **LADY HALLETT:** Ms Munroe.

18 **Questions from MS MUNROE KC**

19 **MS MUNROE:** Thank you, my Lady.

20 Good morning, just still, Professor McManus. My  
21 name is Allison Munroe and I ask questions on behalf of  
22 Covid-19 Bereaved Families for Justice UK.

23 In your statement, Professor McManus, at  
24 paragraph 46, you talk about the need for discussions  
25 and consultation between relevant bodies, sectors and

65

1 take Sandwell, in the West Midlands, I know that some of  
2 our Welsh and Scottish directors of public health looked  
3 to compare lessons from Sandwell. It's a challenge  
4 because the different four nations each have a different  
5 public health system, but the level of principles, the  
6 level of good practice, the level of the science, the  
7 level of common challenges, those often can be shared  
8 across the four nations.

9 Am I answering your question?

10 **Q.** Yes. Yes, you are. You've mentioned the different  
11 structures that exist between the four nations and the  
12 public health offices. Did that pose any particular  
13 difficulties or problems or was that something that you  
14 felt was adequately addressed in terms of the  
15 communications?

16 **A.** I think one can always do better. The level of  
17 complexity in this system relies on exceptionally good  
18 communication across every player. I think it is  
19 a regret on the part of directors of public health,  
20 my Lady, that communication between national governments  
21 and local directors of public health, certainly in  
22 England, was sometimes less than optimal, and could have  
23 been improved. Which made us look to share  
24 communications amongst ourselves by setting up fora  
25 where we could share information. So, for example,

67

1 professionals early and regularly as being key and one  
2 of the key things to learn from the pandemic. Also,  
3 about 10, 15 minutes ago you talked about the very good  
4 communications between yourselves and  
5 Professor Sir Chris Whitty and other CMOs.

6 My question to you, Professor McManus, bearing that  
7 all in mind, is: could you assist us, please, in terms  
8 of describing, in your view, the adequacy or not, as the  
9 case may be, of the communications between public health  
10 directors across the four nations?

11 **A.** Forgive me, do you mean how directors of public health  
12 communicated with one another?

13 **Q.** Yes.

14 **A.** I think it is fairly complex. So the Association of  
15 Directors of Public Health brought directors of public  
16 health regularly together, usually with government, for  
17 pan-UK webinars or seminars. Some of those would be  
18 England only. We have an ADPH council which includes  
19 representatives of all four nations and the members of  
20 that council then feed back to the directors of public  
21 health in their constituent nations and they advise us  
22 on policy.

23 So, for example, we found ourselves comparing how  
24 test and trace was run in the different nations and  
25 looking to learn from one another, from examples -- I'll

66

1 there was a mental health impact collaborative group set  
2 up by ADPH for directors of public health in  
3 four nations specifically to enable us to share  
4 information when it wasn't flowing from national to  
5 local.

6 Does that help you?

7 **Q.** It does. Finally, Professor McManus, again, in your  
8 statement -- we don't need to go to it, but it's  
9 paragraphs 41, 42 and 43 -- you make reference or you  
10 note that there were no records of any ADPH reps  
11 attending meetings with the United Kingdom Government or  
12 with the devolved nations specifically to discuss  
13 Covid-19 prior to 21 January 2020.

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

15 **Q.** Is that correct?

16 **A.** Yes.

17 **Q.** Do you know why that was, there were no meetings? Or no  
18 records, rather, I should say, of meetings.

19 **A.** I think the top-down culture of communicating. If you  
20 cast your mind back to the somewhat bewilderingly  
21 complex diagram that Mr Keith showed at the start of the  
22 Inquiry for each nation, what becomes very apparent is  
23 that there were missing lines in communication, and  
24 if -- I remember distinctly the England one: the lines  
25 of communication to directors of public health and to

68

1 some local fora were very dependent on one or two lines  
2 only, my Lady, and if they didn't work, we didn't know  
3 what was going on, we found out by looking at the  
4 television or reading the papers.

5 I think it's partly that I would say that the three  
6 nations other than England have a greater -- had  
7 a greater awareness of the role of directors of public  
8 health, and a greater understanding and a greater  
9 willingness to work with them, than was apparent in  
10 England prior to the first wave of Covid on pandemic  
11 preparedness. It felt top-down, and that should be one  
12 of our chief lessons.

13 **MS MUNROE:** Thank you very much, Professor McManus.

14 Thank you, my Lady.

15 **LADY HALLETT:** Thank you, Ms Munroe.

16 Thank you very much indeed, Professor McManus.

17 Thank you very much for your help.

18 **THE WITNESS:** Thank you, my Lady.

19 **(The witness withdrew)**

20 **MR KEITH:** Ms Blackwell will be calling the next witness.

21 **(Pause)**

22 **MS BLACKWELL:** My Lady, please may I call

23 Professor Kevin Fenton.

24 **PROFESSOR KEVIN FENTON (affirmed)**

25 **Questions from COUNSEL TO THE INQUIRY**

69

1 **A.** That's correct.

2 **Q.** You also became the regional director for London in the  
3 Office for Health Improvement and Disparities within the  
4 Department of Health and Social Care in October of 2021,  
5 having previously held the same position within Public  
6 Health England from April of 2020?

7 **A.** That's correct.

8 **Q.** You are the statutory public health adviser to the  
9 Mayor of London and the Greater London Authority and the  
10 Regional Director for Public Health for NHS England?

11 **A.** That's correct.

12 **Q.** But it is in your guise as president of the  
13 United Kingdom faculty of health that you give evidence  
14 to the Inquiry today?

15 **A.** That is correct.

16 **Q.** The faculty is the professional standards body for  
17 public health specialists and practitioners with other  
18 than have around 4,000 members in the four nations of  
19 the United Kingdom and overseas; is that right?

20 **A.** Yes, that's correct.

21 **Q.** Is membership open to any public health specialist and  
22 practitioner?

23 **A.** Those that have completed their postgraduate training in  
24 public health are eligible for membership of the faculty  
25 and fellowship of the Faculty of Public Health. We do

71

1 **MS BLACKWELL:** Is your name Professor Kevin Fenton?

2 **A.** Yes, it is.

3 **Q.** Thank you.

4 Professor Fenton, thank you for coming to give  
5 evidence today and thank you for the assistance you've  
6 already given. You've provided a witness statement  
7 which is at INQ000148405. If we can go to page 15,  
8 please, we can see that you signed it on 13 April of  
9 this year. Is it true to the best of your knowledge and  
10 belief?

11 **A.** It is true.

12 **Q.** Thank you.

13 We can take that down.

14 During your evidence, please speak into the  
15 microphone so that the stenographer can hear you for the  
16 transcript, and if you need a break at any time just let  
17 me know.

18 Professor, you are president of the United Kingdom  
19 faculty of health, you are a senior public health expert  
20 and infectious disease epidemiologist, who has worked in  
21 a variety of public health executive leadership roles  
22 across government and academia in the United Kingdom and  
23 internationally, including taking a leading role in  
24 London's response to the Covid-19 pandemic; is that  
25 right?

70

1 have other accreditations and designations depending on  
2 where you are in your postgraduate training and the  
3 examinations which you've taken on your way to  
4 specialisation.

5 **Q.** All right. It's a registered charity, isn't it, and  
6 a joint faculty of the three royal colleges of  
7 physicians in the United Kingdom?

8 **A.** That's correct, we were established in 1972, so we're  
9 just over 50 years of age.

10 **Q.** What is the aim of the faculty?

11 **A.** Our objects articulate three areas, my Lady, where we  
12 have an essential role in the training and accreditation  
13 of public health practitioners. First, in setting  
14 standards for training, and, as I said, this is  
15 a competency-based postgraduate training programme open  
16 to doctors and other professionals to become public  
17 health specialists. We also look, my Lady, at the  
18 standards for public health practitioners across the  
19 country. This includes the appointment of specialists  
20 and consultants to their senior roles, as well as their  
21 continuing professional development, accreditation and  
22 revalidation as practitioners. And we have a third  
23 critical function which is that of advocacy for the  
24 public's health, looking at the public health system and  
25 its functioning and advocating for, on behalf of our

72

1 members, effective delivery of the public health system  
 2 and public health, and improving the public health of  
 3 the population.  
 4 **Q.** Is addressing health inequalities and the wider  
 5 determinants of health central to the faculty's  
 6 existence and work?  
 7 **A.** It is. Health inequalities are foundational for us to  
 8 both improve and protect the health of populations.  
 9 Health inequalities are essential in understanding  
 10 individual and community resilience to shocks such as  
 11 pandemics. As a result, we have a strong focus on  
 12 health inequalities, my Lady, both in the training and  
 13 capacity development, in the accreditation of our  
 14 practitioners, when we assess them for their competence,  
 15 and we have a strong programme of advocacy on issues and  
 16 matters related to health inequalities.

17 **Q.** Thank you.

18 In your witness statement, you say that prior to  
 19 January of 2020 there was limited communication from the  
 20 government on the state of the United Kingdom's  
 21 preparedness and pandemic planning with the faculty?

22 **A.** That's correct.

23 **Q.** I see you're agreeing with that. But in relation to one  
 24 strategy, the 2011 United Kingdom Influenza Pandemic  
 25 Preparedness Strategy, about which my Lady has heard

73

1 promising practice, sharing data, scientific advances,  
 2 but also understanding what tools are available for  
 3 intervention in the pandemic. So that sharing of  
 4 information is critical.

5 **Q.** Do you know whether or not your comments and concerns in  
 6 that regard were taken on board and fed into the  
 7 strategy at any point?

8 **A.** No, not on this occasion, no.

9 **Q.** Right. You will be aware that, as part of the strategy  
 10 and appended to it is the equality impact assessment  
 11 which was published at the same time. Did you provide  
 12 any comments or did you have any consideration of that  
 13 document at the time that you sent your response to the  
 14 strategy?

15 **A.** So this would have been done under previous  
 16 administration for the Faculty of Public Health and my  
 17 understanding is that there was a reflection on the  
 18 equality impact assessment, but we recognise with  
 19 hindsight that the EIA -- and given our experience with  
 20 the Covid pandemic -- was not perhaps as thorough or as  
 21 detailed as it could be, given the nature of pandemics  
 22 and how they express themselves in terms of inequalities  
 23 in populations. But we did recognise that the EIA was  
 24 undertaken.

25 **Q.** Right. Well, we asked Professors Marmot and Bambra to

75

1 quite a lot already, there was a level of communication,  
 2 wasn't there? You were invited to provide comments on  
 3 that strategy.

4 Was that invitation issued to the faculty before the  
 5 strategy was published or afterwards?

6 **A.** I believe it was done afterwards as part of the general  
 7 consultation on the 2011 strategy, and this highlights,  
 8 I think, a key -- it's a challenge, but both opportunity  
 9 as well. While it is fantastic to be invited to  
 10 participate in consultations on strategies, it is often  
 11 better to be at the table at the time when the  
 12 strategies are being developed, to help shape the  
 13 content and the paradigms within which the strategies  
 14 are developed. So on this occasion we provided input at  
 15 the consultation level.

16 **Q.** Right. You commented on the importance of sharing  
 17 scientific information between countries, didn't you?

18 **A.** (Witness nods)

19 **Q.** Why is that so important?

20 **A.** In the management and response to any pandemic, because  
 21 of the global nature of the infectious disease and  
 22 infectious disease threat, it is absolutely essential  
 23 that we work in partnership both with the WHO and we  
 24 learn from other countries which are also experiencing  
 25 the infectious disease threat, sharing best and

74

1 comment on the EIA, as you refer to it, and their view  
 2 was that the analysis provided the most thorough  
 3 consideration of equality issues across the strategy,  
 4 but that it was fairly limited in terms of identifying  
 5 the multiple issues faced by different social groups,  
 6 and there was little provided on what actions should be  
 7 undertaken to mitigate any differential impacts, and  
 8 that the analysis did not discuss potential inequalities  
 9 in mortality or morbidity from a pandemic point of view.

10 Do you agree with those concerns?

11 **A.** Yes, we do. Again, on reflection and on re-review of  
 12 the equality impact assessment, and again with the  
 13 knowledge and experience of having gone through the  
 14 Covid-19 pandemic, it is clear that there are missed  
 15 opportunities there for us to both understand the impact  
 16 on groups with protected characteristics but, in  
 17 a sense, to go further, to understand those wider  
 18 determinants which are going to have a material impact  
 19 on increasing risk for those groups but also resulting  
 20 in adverse outcomes as well.

21 **Q.** Thank you.

22 You say in your witness statement that throughout  
 23 the planning and response to the pandemic there was, in  
 24 your view, a lack of executive awareness across  
 25 responder organisations around the level of societal

76

1 risk for pandemic events.

2 Can you explain what you meant by that, please?

3 **A.** Yes. So one of the challenges of the pandemic influenza  
4 plan was that it was exactly that, that there was no  
5 space for considering other respiratory infections or  
6 a Disease X, another kind of pandemic that would have  
7 occurred, and the frame or the mental model in which the  
8 pandemic plan was being developed would have suggested  
9 that we would build upon the lessons of how we responded  
10 to seasonal influenza epidemics, which would largely be  
11 related to the health service response, mitigating the  
12 impact especially on older people and young adults and  
13 children, and ensuring that there is capacity to  
14 deliver, for example, antivirals and vaccines.

15 Now, that --

16 **LADY HALLETT:** Just pause. Slower, please. We're doing  
17 this a lot, but you speak very quickly.

18 **A.** Okay, thank you, my Lady.

19 So that provided a frame where the locus and the  
20 focus of the response would be largely around the NHS  
21 and protecting the NHS, but also looking at other  
22 government departments which would be important in that  
23 frame.

24 That does mean that the wider range of executive  
25 engagement at different levels of government would be

77

1 Contingencies Act that was brought into force in 2004;  
2 yes?

3 **A.** That's correct. Second, we had had a significant number  
4 of reorganisations of the health and care system with  
5 new organisations, new players, with new  
6 responsibilities for health protection and pandemic  
7 response, and there had to be clarification of the  
8 roles, responsibilities, the governance for responding  
9 to pandemics in that -- in the new environment that we  
10 were operating in.

11 So the legislation also had to be updated to reflect  
12 that.

13 Thirdly, armed with the knowledge that we now have,  
14 and that we had at that time in terms of the range of  
15 interventions that would be required to manage potential  
16 infectious disease threats, we needed to ensure that we  
17 were -- the legislation would have allowed for the use  
18 of a wider range of tools for intervention, and again we  
19 saw, my Lady, the importance of this with the Covid-19  
20 pandemic, where we had to move beyond the sort of  
21 interventions which were planned for pandemic flu to  
22 include a wider range of strategies to control the  
23 infection.

24 **Q.** All right.

25 The Inquiry has heard evidence about the huge

79

1 limited because we're not thinking of the range of  
2 pandemic possibilities or the range of interventions  
3 which may be beyond the health service which would be  
4 required to control or manage those other eventualities.

5 So if we take an example such as the Covid pandemic,  
6 we realised very quickly that we needed to move beyond  
7 clinical interventions to look at social interventions,  
8 and that then required a wider range of executive  
9 leaders at different levels, at national, regional and  
10 local, to be engaged in responding, and it was that  
11 engagement that we felt was lacking.

12 **MS BLACKWELL:** Right.

13 You also say that that difficulty that you perceived  
14 in the level of executive awareness was exacerbated by  
15 a legislative framework for health protection which you  
16 describe in your witness statement as "complex, archaic,  
17 and not fit for purpose to address current and future  
18 hazards and threats". Why do you describe the  
19 legislative framework in those terms?

20 **A.** For a number of reasons. First, since the Civil  
21 Contingencies Act was developed, there have been  
22 a number of threats that we had to respond to as  
23 a nation, and learning from those responses that needed  
24 to be updated and reflected in the legislation.

25 **Q.** Just to remind ourselves, that was the Civil

78

1 changes brought about when the Health and Social Care  
2 Act of 2012 became brought into force.

3 What do you say were the concerns from your  
4 organisation in terms of the assurance role that was  
5 taken forwards without specific funding being ringfenced  
6 and whether or not the changes that the Health and  
7 Social Care Act implemented led to a lack of clarity in  
8 terms of an understanding of roles from one public  
9 health worker to another.

10 **A.** So the 2012 Act has been described as one of the most  
11 significant changes and reorganisations of the health  
12 service since its creation 75 years ago. For public  
13 health practitioners, it meant that we had public health  
14 practitioners now operating in many different  
15 organisations, in Public Health England, in local  
16 government, in the NHS, and elsewhere. So the need post  
17 reorganisation to bring that public health family  
18 together, to clarify roles, responsibilities, the  
19 governance, ways of working, for example, for pandemic  
20 response, was critical, and Public Health England played  
21 a very important role, in its inception, in helping to  
22 knit the system together and ensure that there was  
23 an understanding of how different parts of the system  
24 work.

25 Now, the challenge there is that the assurance

80

1 functions and the capacity to do assurance also changed  
2 as a result of the reorganisation. So because we had  
3 staff moving to different -- in different directions to  
4 different organisations, we know that health protection  
5 capacity, for example in local government, was perhaps  
6 not as well invested in as it needed to be to do some of  
7 the assurance functions, although it existed.

8 Similarly, infection prevention and control  
9 responsibilities and assurance, that was a core function  
10 and competence that we knew that we had challenges with  
11 capacity across the system, in part because of the  
12 reorganisation and different functions.

13 **Q.** One of the problems that you identify in your report is  
14 the professional exposure of NHS staff to community  
15 settings and the reduction of that once the Health and  
16 Social Care Act had really taken force. Why was that  
17 a problem, and does it still persist?

18 **A.** So prior to the 2012 change, public health staff were  
19 embedded within the PCTs within the NHS. That provided  
20 both NHS staff to be exposed in a much more hands-on and  
21 much more comprehensive way to their public health roles  
22 and responsibilities.

23 Post 2012, as staff moved to different  
24 organisations, the NHS lost to some extent that close  
25 relationship with public health expertise and public

81

1 in public health, and I operate at the level of  
2 a consultant for public health medicine. I'm  
3 a generalist because I have been trained and  
4 demonstrated my competences in all of the key pillars of  
5 public health practice, which include health protection,  
6 health improvement, healthcare public health, with  
7 a strong focus on data knowledge and intelligence. So  
8 I'm a generalist because I have competencies in all of  
9 those areas and I'm a specialist because I have been  
10 accredited.

11 **Q.** Right. When you say that public health specialist  
12 generalist workforce had a reduced exposure to health  
13 protection duties, is that what you've just explained to  
14 the Inquiry?

15 **A.** Yes, and a really good example of this is if you have  
16 a specialist organisation which is focused, for example,  
17 on health protection and you have other public health  
18 practitioners in other organisations which do not have  
19 that as their core function, then the ability of those  
20 practitioners to get exposure to and experience in  
21 health protection diminishes.

22 **Q.** Right.

23 **A.** That can only be overcome by creating strong links in  
24 place at local levels where you share and you continue  
25 to build and train together in your public health

83

1 health functions, and that over time had to be rebuilt.  
2 In fact we often speak about public health coming back  
3 to the NHS, over the subsequent years, by virtue of  
4 regional public health directors holding joint  
5 appointments with the NHS, the regional teams of Public  
6 Health England and UKHSA now working more closely with  
7 the NHS, but that had to be rebuilt.

8 So the reorganisation and the shifting of public  
9 health capacity to different organisations meant that  
10 that exposure, that ongoing learning, but also some of  
11 the partnerships which were key prior to 2012 were  
12 ruptured initially and then had to be rebuilt.

13 **Q.** Right.

14 You describe that the public health specialist  
15 generalist workforce had reduced exposure to health  
16 protection duties. Now, can you help us, please,  
17 Professor Fenton, with that phrase, "specialist  
18 generalist"? The Inquiry has already heard of it,  
19 I think when we quoted a passage from your witness  
20 statement to another witness, but we were not able to  
21 find a clear definition of it. So can you help us with  
22 that first of all, please?

23 **A.** Absolutely. So, my Lady, if I may use myself as  
24 an example, I'm a public health specialist because  
25 I have completed my five years of postgraduate training

82

1 practice.

2 **LADY HALLETT:** Professor Fenton, I'm afraid I'm still not  
3 getting this generalist specialist, specialist  
4 generalist.

5 What is wrong with just being a specialist in public  
6 health?

7 **A.** Because you can be a specialist, the term can be used as  
8 a specialist, if you do not have your competencies in  
9 all of the domains. So, for example, there are  
10 colleagues who may have done many years of training in  
11 health improvement or health protection and have become  
12 specialists in those areas, but they're not generalist  
13 specialists because they don't have the competencies in  
14 other areas of practice. We therefore call them defined  
15 specialists because that shows that they have --

16 **LADY HALLETT:** I shouldn't have asked.

17 **MS BLACKWELL:** I was going to say.

18 **A.** Well, defined specialists have expertise in one domain  
19 or one area of public health practice, and they're  
20 specialists in that domain only.

21 **Q.** So can I attempt to use a slightly different way of  
22 describing it: so a specialist only has a specialism in  
23 one area of public health, a specialist generalist or  
24 a generalist specialist has that specialism but also  
25 a much wider experience of other aspects of general

84

1 health?  
 2 **A.** If I may quickly add to that.  
 3 **Q.** I'm sorry, I think I made it even worse. I'm sorry.  
 4 **A.** You're a specialist by virtue of having trained and  
 5 developed a certain level of competency in a domain in  
 6 public health. Okay? And the specialist would be the  
 7 equivalent of a consultant practising in cardiology or  
 8 nephrology. So that's a specialist.

9 Now, you can be a generalist specialist if, like me,  
 10 you've trained in all of the domains in public health  
 11 practice and you have been accredited to practice in  
 12 those domains. That's a generalist specialist.

13 You can be a defined specialist if you have only  
 14 worked in and trained in one area, and that means that  
 15 you're not generalist, you're just defined, so you're  
 16 a defined health protection specialist. You may be  
 17 a defined specialist in health improvement where you're  
 18 doing work on health promotion and tackling  
 19 inequalities.

20 **Q.** All right. My Lady, I hope that's clearer?

21 **LADY HALLETT:** I think we'll leave it there.

22 **MS BLACKWELL:** Good.

23 What was the effect on public health of the  
 24 abolition of the government offices of the regions in  
 25 2010?

85

1 **A.** Not necessarily problems, but because of the nature and  
 2 scale of change that occurred in 2012/13 there was a lot  
 3 of forming and developing new relationships, ensuring  
 4 that the capacity to do that co-ordination was in place,  
 5 and ensuring that we had the mandate as well as the  
 6 authority to do some of the pulling together in  
 7 different areas of public health practice, bearing in  
 8 mind that at local level, at regional level and at  
 9 national level, there are defined authorities in the  
 10 legislation and in what organisations had to do. So it  
 11 was important for Public Health England to create that  
 12 space where it was able to operate effectively at the  
 13 regional tier.

14 **Q.** Has that been done successfully, in your view?

15 **A.** Well, as you know, Public Health England doesn't exist  
 16 anymore, but I believe that over time that regional role  
 17 demonstrated itself to be a very effective tier in  
 18 supporting the work and leadership of local government,  
 19 and we've seen it replicated with both OHID, in the  
 20 Department of Health and Social Care, as well as UKHSA  
 21 having regional tiers as well.

22 **Q.** All right, so that regional level that you describe  
 23 hasn't been completely lost, it's just been subsumed or  
 24 taken over by other organisations?

25 **A.** Yes.

87

1 **A.** So the regional tier in any health system, especially  
 2 one as complex as what we have in England, is really  
 3 important, because it provides the connection between  
 4 place, which is where you do a lot of the delivery of  
 5 your prevention programmes, your clinical services and  
 6 services to the population.

7 **Q.** The locality?

8 **A.** The locality.

9 **Q.** Yes.

10 **A.** And, of course, national government, where policies  
 11 develop, where programmes are funded and where you may  
 12 have that drive for particular programmes. So the  
 13 regional tier is important to connect, it's important to  
 14 assure, it's important to train and it's important to  
 15 share best and promising practices.

16 So the government regional offices had that really  
 17 important function before they were abolished.

18 With their abolition and with the creation of Public  
 19 Health England, then the regional tier of Public Health  
 20 England took on and had some of those responsibilities  
 21 to ensure that for public health practice there was that  
 22 connectivity between national to local.

23 **Q.** Right, and was there any problem with Public Health  
 24 England taking over that regional level of  
 25 responsibility and assistance?

86

1 **Q.** Yes. All right.

2 Inequalities and community resilience. You say in  
 3 your witness statement that in terms of the role of  
 4 inequalities in pandemic planning:

5 "... interventions were largely universal and there  
 6 is a lack of evidence that health inequalities in impact  
 7 and outcome were key considerations."

8 What is problem with an intervention being  
 9 universal?

10 **A.** So while universal interventions are able to give you  
 11 the reach and coverage that you seek in order to have  
 12 an effective public health approach, it often does so at  
 13 the expense of those who are hard to reach, hard to  
 14 engage, or those who may not trust health services and  
 15 therefore will not take up the universal offer.

16 So in general in public health practice, my Lady, we  
 17 try to ensure that we have a combination of universal  
 18 approaches to delivery and what we call targeted  
 19 approaches, where we're able to both fund and invest in  
 20 specific programmes that are able to engage those who  
 21 are hard to reach, hard to engage or furthest from  
 22 clinical services, preventative services.

23 **Q.** Is that an important aspect of pandemic planning, or  
 24 should it be?

25 **A.** It's an important part of all public health practice

88

1 which also includes pandemic planning and preparedness  
2 and response.

3 **Q.** Right.

4 The Inquiry has heard evidence from  
5 Sir Chris Wormald, who is the permanent secretary of the  
6 Department of Health and Social Care, and when asked  
7 about whether pandemic planning should include  
8 consideration of inequalities and vulnerabilities, he  
9 expressed a view that such planning would only take  
10 matters so far until the precise nature of the emergency  
11 became known, and that that level of uncertainty, of  
12 what might be coming down the line as the next pandemic,  
13 necessarily carries a degree of imprecision.

14 That evidence was echoed by Roger Hargreaves,  
15 currently the director of the COBR unit, and indeed  
16 yesterday by the First Minister of Wales.

17 Do you agree that there is only so much that can be  
18 anticipated in terms of pandemic planning of those who  
19 are likely to be affected in a certain way by dint of  
20 their inequalities or vulnerabilities?

21 **A.** You won't be able to do everything in planning to  
22 mitigate the impact of inequalities, but there is still  
23 a lot that can be done.

24 **Q.** Tell us what that might be, please.

25 **A.** For example, co-production with -- in the plans, and

89

1 **Q.** All right.

2 The Inquiry has received a witness statement from  
3 Ade Adeyemi, who is from the Federation of Ethnic  
4 Minority Healthcare Organisations, and he has told  
5 the Inquiry that addressing health inequality has thus  
6 far suffered from an unsustainably hodgepodge approach.  
7 A pattern of infrequent and short-term funding for  
8 healthcare strategies targeted at supporting those from  
9 ethnic minority backgrounds may have harmed emergency  
10 planning for the pandemic.

11 Do you agree with his concern?

12 **A.** I do.

13 **Q.** How do you think that the rather scattergun approach  
14 that's been adopted thus far can be more streamlined and  
15 focused in order to achieve what you've just set out as  
16 being necessary for the planning of pandemics and taking  
17 into account inequalities and vulnerabilities?

18 **A.** Well, I must, first of all, my Lady, reflect that things  
19 have significantly improved as we have exited the  
20 pandemic, given our experience with seeing these  
21 inequalities emerge and the detrimental impact that the  
22 inequalities have had on communities across the country.  
23 But there are a few things which must be in place if  
24 we're going to do this better.

25 First, there has to be leadership commitment from

91

1 ensuring that in the development of the plans you have  
2 due regard to tackling inequalities, which go beyond the  
3 equality impact assessment, but co-producing,  
4 for example, with local partners who are in contact with  
5 local communities or vulnerable communities to ensure  
6 those perspectives are included in your plans and your  
7 plans are tested against those perspectives.

8 Second, you can ensure that you have the mechanisms  
9 in place to engage with and to access those communities  
10 which are at greatest risk, either through --  
11 understanding your communication channels, for example.  
12 How do you reach out to and engage with vulnerable  
13 communities? How are you working with the voluntary and  
14 community sector, and what mechanisms are in place  
15 either in local government to assure ourselves that we  
16 have the routes of communication and outreach to engage  
17 with vulnerable communities? Then, finally, ensuring  
18 that data and the infrastructure for data and data  
19 sharing are available and are designed before the  
20 pandemic or before the shock, so that you're able to  
21 capture the information that you need to characterise  
22 and to understand the impact on vulnerable populations.

23 So those are things that can be done prior to  
24 an event which then set a stronger foundation for your  
25 response for equity in the event.

90

1 highest levels of government and at all levels of  
2 government to address these inequalities, recognising  
3 the detrimental impact it has on overall population  
4 health.

5 Second, we need to ensure that we're investing in  
6 programmes which are culturally competent, co-produced  
7 with our communities, and ensuring that we're using the  
8 assets that we have to deliver those programmes  
9 effectively.

10 Third, I've already mentioned the importance of  
11 having good data that enables us to both understand  
12 where inequalities occur and to be able to evaluate the  
13 impact of our interventions. Right? So the data's  
14 really important to understand are we making the right  
15 difference.

16 Fourth, ensuring that we have ways in which we are  
17 communicating and engaging with communities. What are  
18 those channels and how do we access them and leverage  
19 them so that we're both bringing communities in,  
20 co-producing and developing with our communities.

21 Then, finally, we know that for a number of the  
22 inequalities that we observed, the experience of our  
23 communities on poor trust, stigma, discrimination,  
24 including structural racism, has repeatedly come up as  
25 a huge issue that our communities need us to confront

92

1 and address, and I think that, and I believe that  
2 organisations working in health and care have  
3 a responsibility to visibly state and to visibly act on  
4 these inequalities in a much more comprehensive way.

5 **Q.** How do those who are charged with the responsibility of  
6 creating guidance and documentation that is designed to  
7 assist going forwards in terms of pandemic planning  
8 harness that sort of information which you've just set  
9 out, Professor Fenton?

10 **A.** So this is really an opportunity for us, as we emerge  
11 from the pandemic, not just to learn lessons but to  
12 create enduring legacies that enable us to act  
13 differently to achieve different outcomes.

14 I've already mentioned the importance of ensuring  
15 that at the planning stage that we're doing our planning  
16 of all of our responses through an equity lens.

17 **Q.** What does that mean?

18 **A.** Asking the question: who are the ones who are most  
19 likely to be negatively impacted by this incident or  
20 pandemic or event, and what are the ways in which we  
21 both need to engage and help to mitigate those impacts  
22 from upfront? So start with that planning for equality.

23 We often say in public health, my Lady, if you plan  
24 for those that are furthest and hardest to engage, then  
25 automatically you have been able to design a system or

93

1 must be that there needs to be a widening of the tent,  
2 a diversity of thought, experience, and perspectives  
3 that is brought to bear in designing plans and policies  
4 which are geared towards pandemic planning and pandemic  
5 response, but to use that discipline of engagement and  
6 partnership in everything that we're doing in our public  
7 health programmes.

8 Now, I should say that this is part of the  
9 **modus operandi** for local government. Right? So the  
10 closer you are to the community is the more this is  
11 being done. The challenge is for national government  
12 partners to say: can we go further and can we do more in  
13 this space?

14 **Q.** Finally, Professor Fenton, I just want to ask you about  
15 the strength of the public health workforce and that  
16 being a necessity for an ability to react to the next  
17 pandemic as it may be coming down the line.

18 How do we ensure that the public health workforce is  
19 strong enough and has sufficient capacity in order to be  
20 able to react in an appropriately resilient way?

21 **A.** Well, I think first it's recognising the -- and valuing  
22 the importance of the public health workforce and the  
23 public health system as a key part of our national  
24 infrastructure for resilience. We would not have been  
25 able to get through the pandemic had it not been for the

95

1 programme that will engage everybody.

2 So the first is ensuring that we have that strong  
3 focus on equity and redesigning through an equity lens.

4 Second, there needs to be training and capacity  
5 building around this issue, because we have to leverage  
6 the experience of the pandemic to ensure that our  
7 leaders as well as those delivering programmes have the  
8 tools and the training they need to do this.

9 Then third, recognising the importance of the  
10 communities' voice in this space is critical, and using  
11 ways in which we're bringing communities to help to  
12 design, or research programmes, or prevention  
13 programmes, or policies, by co-production and engagement  
14 we will end up with much richer programmes and richer  
15 strategies. So those are three ways in which we could  
16 do things differently.

17 **Q.** Having a clear line of contact and communication between  
18 those who are involved in making the decisions about the  
19 creation of these strategy and guidance documents, with  
20 your organisation and with voluntary organisations who  
21 exist to promote the better understanding of those who  
22 suffer from health inequalities, other inequalities and  
23 vulnerabilities is vital, in your view, in taking this  
24 forwards?

25 **A.** That's correct. One of the learnings of our experience

94

1 phenomenal work of public health practitioners working  
2 at national, regional and local level, in academia, in  
3 lots of other sectors. So recognising that asset and  
4 valuing that asset and investing in that asset now and  
5 for the future will be critical.

6 Second, ensuring that you have the voice of  
7 practitioners, generalist specialists, engaged in  
8 planning and policy development at every level of  
9 government; and that ensures that the key skills which  
10 are required for effective pandemic planning and  
11 response are integrating that experience of public  
12 health practitioners.

13 Then thirdly, in addition to investing in a strong  
14 workforce and ensuring that we continue to invest in the  
15 numbers required to deliver, to think about  
16 opportunities for continued partnership both with public  
17 health practitioners and those developing policies,  
18 again at every level of government.

19 So there are things that we have to do, but it  
20 really does begin with understanding the public health  
21 system, valuing the assets that we have in our public  
22 health workforce, and ensuring that it's fully  
23 integrated into our planning and response at every  
24 level.

25 **MS BLACKWELL:** Thank you.

96



1 My Lady, you have provisionally provided permission  
2 for five minutes of questions to Covid-19 Bereaved  
3 Families for Justice UK, so I will hand over, if  
4 my Lady agrees, to Ms Munroe.

5 **LADY HALLETT:** I think you may have deprived Ms Munroe of  
6 five minutes too, I think it was ten.

7 **MS BLACKWELL:** Oh, was it? I'm so sorry.

8 **MS MUNROE:** I was about to say, my Lady. Thank you.

9 **Questions from MS MUNROE KC**

10 **MS MUNROE:** Good afternoon, Professor Fenton. My name is  
11 Allison Munroe, and I ask questions on behalf of  
12 Covid-19 Bereaved Families for Justice UK.

13 The first question, you have already touched upon  
14 this in answer to questions from Ms Blackwell  
15 King's Counsel, it's about data gathering. I preface it  
16 by, if I may, reading just a short passage from  
17 a statement from Ade Adeyemi -- you're nodding at  
18 somebody that you've heard of, obviously -- he is  
19 a healthcare professional from FEMHO, which is the  
20 Federation of Ethnic Minority Healthcare Organisations,  
21 a coalition of over, I think, 50,000 healthcare  
22 professionals.

23 We don't need to bring up his statement, but,  
24 my Lady, for reference, it's INQ000174832.

25 Mr Adeyemi in his statement on behalf of FEMHO has  
97

1 utilise data better, especially data that can allow us  
2 to understand these differences across groups,  
3 population sub-groups, and that allow us to evaluate the  
4 impact of the interventions that we're putting in place.  
5 So that has to be a core lesson from this.

6 In many parts of health and understanding health  
7 disparities in the UK, we have been calling for greater  
8 disaggregation, separation of the data, to help us to  
9 understand these racial and ethnic disparities, but also  
10 disparities by other protected characteristics. So it  
11 is vitally important that as we emerge from the Covid  
12 pandemic we do learn the lessons and invest in systems,  
13 data systems, that allow us to understand these effects  
14 much better.

15 **Q.** Thank you, Professor Fenton. You have in large part  
16 answered my next question, but if I may just ask sort of  
17 supplementary to that: presumably different parts of the  
18 NHS and other health authorities and government and  
19 local authorities have different systems, some are more  
20 effective and some are more efficient than others in  
21 terms of data capturing. How does one sort of bring  
22 that all together so that in fact you've got  
23 a consistent system of data capturing? Because it's no  
24 good if some people are doing it well and others are not  
25 doing it well. It's going to lead to inaccuracies.  
99

1 expressed their deep concern as to how socio-economic  
2 factors exposed essentially the existing fault lines  
3 that were there in terms of disparities for poorer  
4 communities in the country generally but particularly  
5 for those ethnic minority communities from the Indian,  
6 Pakistani, Bangladeshi, black African and black  
7 Caribbean diaspora.

8 He says in paragraph 15 of his statement:

9 "FEMHO believes that that planning, forecasting and  
10 preparatory work for a high-consequence infectious  
11 disease such as Covid-19 did not properly consider the  
12 context of a multicultural UK and a global diverse  
13 health and care workforce. UK laboratory, field  
14 modelling and case studies prior to Covid-19 did not  
15 include references to race and/or ethnicity. The  
16 absence of a national system of data capture regarding  
17 race and ethnicity may well be one of the biggest system  
18 failures in emergency planning from the Covid-19  
19 pandemic."

20 Now, Professor Fenton, do you share Mr Adeyemi's  
21 view that that absence of a national system of data  
22 capture was a huge system failure?

23 **A.** Well, I do agree, and as I mentioned earlier that one of  
24 the lessons and, I hope, legacies which emerges from our  
25 experience of the pandemic will be to understand and to  
98

1 **A.** That's right. You know, and with the most recent  
2 organisation of the health and care systems, where we  
3 now have the creation of integrated care systems, ICBs,  
4 and stronger working between local government and the  
5 NHS, I believe we have an amazing opportunity to look at  
6 data differently, how we share data, to understand and  
7 improve population health, and how we use those data to  
8 tackle inequalities.

9 So I believe the building blocks are there for us to  
10 do things better, but it does require additional  
11 resources, capacity, training and those data sharing  
12 agreements that allow organisations to share their  
13 information more effectively.

14 Now, at the national level, organisations such as  
15 the UKHSA and OHID, in the Department of Health, also  
16 have a role to play to ensure that the data that they're  
17 routinely collecting from health and care systems are  
18 not only reported showing overall trends but that the  
19 discipline in ensuring that we're unpacking those data  
20 and describing the characteristics of epidemics or  
21 health challenges by a range of characteristics, that  
22 also has to be part and parcel of what's done at the  
23 national level as well.

24 So wherever you are in the system, the discipline of  
25 using data differently and better must be a lesson from  
100

1 the pandemic.

2 **Q.** Presumably, Professor Fenton, part of that training that  
3 you've described is a realisation, perhaps, that data  
4 capture is important, and culturally to understand why  
5 it's important?

6 **A.** Well, you know, as a public health practitioner I would  
7 definitely agree with you, and my Lady, this is the core  
8 currency of what we have to do to improve the health of  
9 populations. Because if you don't have data and if  
10 you're not able to describe the health needs of your  
11 population, then you will forever be limited in meeting  
12 the needs of those populations or in being able to  
13 evaluate the impact of your efforts on whether or not  
14 you're making a difference in the lives of those  
15 communities. So data are important.

16 **Q.** Thank you, Professor Fenton.

17 The next question doesn't arise explicitly from your  
18 statement but more perhaps from a Public Health England  
19 report entitled *Beyond the data: Understanding the*  
20 *impact of COVID-19 on BAME groups*, of which you're the  
21 first name in the foreword of that report.

22 Again for reference, my Lady, it's INQ000120838.

23 Professor Fenton, do you think that the lack of data  
24 has been an impediment or a block, perhaps, to  
25 challenging and combating structural and/or

101

1 addition to the quantitative data, ensure that we have  
2 the stories and the qualitative data of the impacts that  
3 were being seen at that time.

4 **Q.** Thank you.

5 Professor Fenton, is a lack of any such sort of  
6 national or a really structured organisational way of  
7 gathering data in a data gathering system itself  
8 indicative or evidence of structural and institutional  
9 racism?

10 **A.** I can't comment to that, I know that it is very  
11 difficult in general to move beyond the sort of routine  
12 elements in data collection for a variety of reasons,  
13 and yes, as an epidemiologist, I'd love to have not only  
14 data on race ethnicity but certainly sexual orientation,  
15 disability status, I'd love to know the neighbourhood  
16 that you're living in, to understand the sort of social  
17 and economic challenges that you may experience. But in  
18 health data you may be extremely limited to be able to  
19 collect that on a routine basis.

20 So what national organisations can do is to provide  
21 the frameworks that allow for data sharing, so that you  
22 can combine different datasets to get a better  
23 understanding of the patterns that you're observing and  
24 that we can -- national organisations can facilitate  
25 that data sharing and that collaboration which is

103

1 institutional racism and, if so, how?

2 **A.** So in the report -- and I'd like to just acknowledge, we  
3 engaged 4,000 people over a six to seven-week period to  
4 develop this report in the first wave of the pandemic,  
5 and I want to acknowledge both my colleagues in Public  
6 Health England and of course the CMO and the then  
7 Secretary of State for Health for commissioning this  
8 report, because we needed to understand the patterns of  
9 disease and its impacts that we were observing.

10 Having data by race ethnicity is critical both to  
11 understand how the disease is manifesting itself across  
12 different groups but it is important to recognise that  
13 data by race ethnicity only tell you a part of the  
14 story. Many of the differences that we observe when we  
15 describe these racial disparities are a function of  
16 other things, for example the social and economic  
17 background and status of the individuals and the  
18 communities. It may also reflect, as we now know, those  
19 communities' experience of structural racism.

20 So it's important that not only we have  
21 comprehensive data that enables us to describe the  
22 differences but we need to look beyond the data, which  
23 is why in this report we also engaged and heard the  
24 stories, my Lady, of communities across the country, of  
25 networks of professionals, so that we're able to, in

102

1 necessary for a richer understanding of the patterns of  
2 the disease that we observe.

3 So it's really important that -- this is a very  
4 difficult area of practice to get the sort of data that  
5 we need, but there are ways in which you can partner  
6 differently, work differently, to tell that story as  
7 well.

8 **Q.** You've mentioned other protected characteristics and  
9 other groups such as disabled people, LGBTQ+ community;  
10 the issues that we're talking about in relation to  
11 ethnic minority communities equally apply?

12 **A.** They do, and that's why we say if you're able to set the  
13 systems up that allow you to collect that sort of  
14 information, then you're able to have a richer dataset  
15 to allow you to understand inequalities in different  
16 domains as well.

17 **Q.** Thank you.

18 Finally, Professor Fenton, again returning where we  
19 began with Mr Adeyemi's statement, paragraph 17 of his  
20 statement, at page 5, he makes reference to one of his  
21 members, a Dr Ananta Dave, who is a chief medical  
22 officer for NHS Black Country Integrated Care Board and  
23 president of the British Indian Psychiatric Association,  
24 and she states:  
25 "There was a lack of planning around risks to

104

1 vulnerable groups such as BAME and older adults in  
2 care homes. It was a combination of ignorance and  
3 apathy. The government should have been gathering this  
4 data because the awareness would have been there about  
5 the impact on the vulnerable and the planning about the  
6 early stages."

7 Do you share that view, Professor Fenton?

8 **A.** So earlier I spoke about the mental model or the  
9 paradigm within which the pandemic -- pandemic influenza  
10 planning was taking place, and I think that mental  
11 model, given our experience with seasonal influenza,  
12 meant that there may have been less of a concern with  
13 inequalities because of the patterns that we see on  
14 a seasonal basis, and our prior experience with the H1N1  
15 pandemic.

16 So there's a -- we can understand why this occurred,  
17 but I do think that actually moving forward, especially  
18 armed with our experience with Covid-19, we now have  
19 both the rationale and the opportunity to do things  
20 differently, to ensure we understand those populations  
21 which are going to be at greater risk, that we have data  
22 systems, my Lady, that enable us to characterise and  
23 understand where those communities are, and we have the  
24 ability to both deliver programmes and evaluate the  
25 impact of those programmes on those communities. So

105

**PROFESSOR MARK WOOLHOUSE (affirmed)**

**Questions from LEAD COUNSEL TO THE INQUIRY**

3 **MR KEITH:** Could you give the Inquiry, please, your full  
4 name.

5 **A.** Mark Edward John Woolhouse.

6 **Q.** Professor, thank you for your assistance to the Inquiry.  
7 You've provided a 15-page statement dated 27 April 2023.  
8 Have you appended your signature to that statement and  
9 the statement of truth at its conclusion?

10 **A.** Yes.

11 **Q.** Thank you very much.

12 Professor, you are by profession a professor of  
13 infectious disease epidemiology, you have a multitude of  
14 qualifications, you have worked as an academic  
15 researcher, you have worked in the field of infectious  
16 diseases and global health for many years, and you are  
17 an expert on the particular topic of emerging pathogens,  
18 which is of great interest to this Inquiry, of course.  
19 You're currently the principal investigator at the  
20 Epigroup, the Epidemiological Research Group, which  
21 enquires into novel emerging pathogens; is that correct?

22 **A.** Yes.

23 **Q.** You have published more than 400 scientific papers on  
24 the issues of emerging infectious diseases and  
25 antimicrobial resistance. You've advised governments

107

1 that has to be a legacy moving forward from our  
2 experience.

3 **MS MUNROE:** Thank you very much, Professor Fenton, you have  
4 answered again in anticipation the next part of the  
5 question. So thank you very much.

6 Thank you, my Lady.

7 **LADY HALLETT:** Thank you, Ms Munroe.

8 **MS BLACKWELL:** That concludes Professor Fenton's evidence.

9 **LADY HALLETT:** Professor Fenton, thank you very much.

10 **THE WITNESS:** Thank you, my Lady.

11 **LADY HALLETT:** Thank you very much for your help, it's been  
12 extremely interesting.

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

14 **(The witness withdrew)**

15 **MS BLACKWELL:** Is that a convenient moment for the break?

16 **LADY HALLETT:** It is. 1.55.

17 **MS BLACKWELL:** Thank you very much.

18 **(12.55 pm)**

19 **(The short adjournment)**

20 **(1.55 pm)**

21 **(Proceedings delayed)**

22 **(2.00 pm)**

23 **MR KEITH:** My Lady, this afternoon's witness is  
24 Professor Mark Woolhouse, please.

25

106

1 and national and international agencies over the years.

2 Of even more central importance, during the  
3 United Kingdom response to Covid, were you a member for  
4 a time of SPI-M, that's the Scientific Pandemic  
5 Influenza Group on Modelling?

6 **A.** I was.

7 **Q.** Did you attend a meeting of NERVTAG in December 2021?

8 **A.** I did.

9 **Q.** We've heard evidence from Dr Calderwood that there was,  
10 in April 2020, set up in Scotland the Scottish Covid-19  
11 Advisory Group; were you a member of that also?

12 **A.** I was.

13 **Q.** You're a fellow of the Royal Society of Edinburgh and  
14 a number of other renowned institutions. You're also  
15 a published author because you wrote a book on the  
16 pandemic entitled *The Year the World Went Mad*.

17 **A.** I did.

18 **Q.** I'd like to start, please, with the issue of the  
19 United Kingdom's ranking in the Global Health Security  
20 Index. My Lady has heard evidence that in 2019 the  
21 United Kingdom was ranked with an overall score of  
22 second in the Global Health Security Index, which is  
23 a joint endeavour between a number of US and UK bodies.

24 Did that overall score reflect different or varying  
25 marks or outcomes in a range of areas such as prevention

108

1 of the emergence of release of disease or rapid response  
 2 and mitigation, various different aspects to how  
 3 a country might respond to a pandemic?  
 4 **A.** It did, and the category "rapid response and mitigation  
 5 of the spread of an epidemic" in that report was  
 6 a separate category, obviously very relevant to the work  
 7 of this Inquiry, and the UK scored highest in that  
 8 category, by a considerable margin.  
 9 **Q.** So it was first in that category, "rapid response to and  
 10 mitigation of the spread of an epidemic"?  
 11 **A.** Yes.  
 12 **Q.** I think I may be permitted to suggest without much  
 13 chance of contradiction that things didn't quite turn  
 14 out in that regard as well as might be thought from that  
 15 ranking.  
 16 Was that a failure in the ranking, or was -- is  
 17 there or was there a danger that countries which do well  
 18 in such international rankings may fall into the  
 19 perennial trap of complacency, or failing to notice that  
 20 doing well in rankings and in terms of preparedness  
 21 doesn't necessarily mean that that particular country  
 22 may not remain very vulnerable in certain areas of  
 23 response to pandemic outbreaks?  
 24 **A.** So I think that's a reasonable interpretation. The  
 25 global health community, compares health responses

109

1 very exercised at the moment.  
 2 **Q.** Since Covid-19, have any comparable international  
 3 indices been published in which the United Kingdom has  
 4 appeared?  
 5 **A.** I'm not sure if there was actually rankings done,  
 6 I mean, there have been a number of studies of the  
 7 pandemic response, but whether they've ranked them -- if  
 8 you're thinking of a particular example, please ...  
 9 **Q.** No, I was just wondering whether or not post-Covid that  
 10 such rankings may have had introduced into them  
 11 a greater degree of reality?  
 12 **A.** No. Well, if they had I would say at the moment that is  
 13 premature. I think we have to deconstruct what these  
 14 rankings were and weren't telling us and understand that  
 15 much better.  
 16 You put your finger on it, I think, when you asked  
 17 me: is there some mix-up between preparedness or having  
 18 the capacity, the health system capacity, to respond,  
 19 and also actual vulnerability to any particular pandemic  
 20 agent? And a very good example of this is one of the  
 21 biggest risk factors for a severe Covid-19 pandemic  
 22 around the world is having a more urbanised population.  
 23 This virus spreads particularly well in cities. Well,  
 24 that wasn't part of the pandemic preparedness indices.  
 25 That's a marker of vulnerability.

111

1 across the world, is clearly very exercised about this  
 2 lack of predictive power, not only actually of the  
 3 Global Health Security Index but a number of other  
 4 indices that relate, health systems, resilience and so  
 5 on, and there has been a number of scientific papers  
 6 published on exactly what you say, that -- the very poor  
 7 relationship between the two. We've done work of our  
 8 own on that in Africa, where a particular index was,  
 9 again, an extremely poor predictor of actual outcomes  
 10 during the Covid-19 pandemic.  
 11 The designers of those indices, which is on the face  
 12 of it are pretty sensible, they have very sensible  
 13 criteria, I think they were defended on the grounds they  
 14 weren't intended to be predictive, in that very clear  
 15 sense. But if they weren't, what are they for?  
 16 **Q.** I'm just going to pause you there, Professor, just  
 17 because you're speaking quite fast and our excellent  
 18 stenographer is obliged to keep up with you, as are we  
 19 all. Could you just go a little bit slower, please.  
 20 So the question then arises: for what purpose are  
 21 they produced if they are both, by turn, not  
 22 particularly predictive and possibly causative of  
 23 complacency or the taking of one's eye off the ball?  
 24 **A.** I agree, and, as I said, this is a question with which  
 25 the global health community -- research community is

110

1 Another marker of vulnerability would be having  
 2 an ageing population. For Covid-19 that had enormous  
 3 effects on the vulnerability of countries. So the UK  
 4 was very vulnerable in that particular criteria. But  
 5 that wasn't included in the pandemic preparedness  
 6 indices.  
 7 So -- and I believe the ex CMO, Sally Davies, has  
 8 already given evidence about the possible role of poor  
 9 population health. So in the UK we have a number of  
 10 population health problems, including obesity, and they  
 11 have an impact.  
 12 So those are all about vulnerability, and the  
 13 preparedness indices are trying to get some indicator of  
 14 what our level of preparedness is, and clearly those two  
 15 are not the same thing and when they combine, they  
 16 combine in the unpredictable way that we saw in 2020.  
 17 **LADY HALLETT:** Forgive me for interrupting, Mr Keith. Are  
 18 there any examples of a country that gets a low ranking  
 19 and then performed well?  
 20 **A.** Yes, there are. A number of countries in Africa -- so  
 21 we went over my qualifications. I'm actually director  
 22 of a global health partnership that works in Africa,  
 23 worked on pre-pandemic planning in Africa and also then,  
 24 of course, during the pandemic as well. The point  
 25 I just made to you there was about urbanisation, so by

112

1 far the worst affected country in Africa was  
2 South Africa, which has by far the strongest health  
3 system. So countries with more outdoor lifestyles, more  
4 rural populations were actually much less affected.

5 That's, I think -- I believe that's true globally as  
6 well.

7 **MR KEITH:** So would it be fair to say that there are two  
8 core weaknesses or dangers associated with placing too  
9 great a reliance on any system of international  
10 reliability? Firstly, we are dealing here, are we not,  
11 with the field of pathogenic outbreaks, and certainly  
12 respiratory viruses but perhaps all pathogenic outbreaks  
13 are inherently unpredictable and, therefore, there is  
14 a degree -- a very distinct limit on how well one can  
15 predict outcomes.

16 Secondly, systems that focus about governmental and  
17 structural preparedness may fail to pay sufficient  
18 account to the vulnerability that any particular country  
19 may have within its system because of comorbidities and  
20 the like, and so on.

21 Are those two propositions fair?

22 **A.** Yes, I think that's fair, and perhaps there wasn't  
23 enough awareness of just how important those  
24 vulnerabilities were, but with the very important caveat  
25 that the ones I listed just then were, because they were

113

1 Could we have INQ000149116, please.

2 This is a draft of a high level summary of  
3 a paper -- well, a paper called *High Level Summary of*  
4 *Emerging Viral Threats to Human Health*, prepared by  
5 yourself and colleagues and referenced to the University  
6 of Edinburgh in March 2015.

7 In this summary, Professor, you address the sources,  
8 the genesis of particular types of threats facing the  
9 United Kingdom, and you divide them up into threats from  
10 viruses which present either a clear and present danger,  
11 or are matters of concern, or where you felt there were  
12 gaps presumably in the systems in place in order to be  
13 able to identify those viruses and to respond to them.

14 On page 2, in the first category, "Clear and present  
15 danger", you said this:

16 "This category covers taxa containing viruses that  
17 are well-recognised public health threats and where  
18 (better) vaccines are needed."

19 Was it the purpose of this paper to identify the  
20 greatest threats and therefore also what may need to be  
21 done in order to better prepare ourselves for meeting  
22 those threats?

23 **A.** The paper was prepared as part of the background  
24 documents for a meeting chaired by the then CMO,  
25 Sally Davies, for something called the UK -- what

115

1 relevant to Covid-19, and of course if we did have  
2 a pandemic of a very different infectious nature --  
3 infectious agent with a very different nature, very  
4 different problem that it presented, the vulnerabilities  
5 may be different vulnerabilities.

6 **Q.** Indeed.

7 **A.** For example, the UK is not thought of as particularly  
8 vulnerable to a vector-borne disease outbreak.

9 **Q.** Just pause there, vector-borne, please?

10 **A.** Carried by biting insects or arthropods, so  
11 a mosquito-borne one like dengue --

12 **Q.** Or a flea or --

13 **A.** -- good example. Could be, a flea or a tick. Ticks are  
14 also common. But -- sorry, I've lost my train of  
15 thought.

16 **LADY HALLETT:** UK not vulnerable --

17 **A.** Yes, so we're not thought to be vulnerable to something  
18 like Zika virus because we don't have enough of the  
19 right kind of mosquitoes to transmit that particular  
20 disease. So vulnerability is very, very context  
21 dependent, and what makes us vulnerable to Covid-19 may  
22 not make us vulnerable to other kinds of pandemic.

23 **Q.** On that theme, I now want to ask you about the degree to  
24 which the risk of non-influenza new and emerging  
25 pathogenic outbreaks was recognised pre-Covid.

114

1 became, I think, out of that meeting, the UK Vaccine  
2 Network, so the aim was to identify what kind of threat  
3 the UK should be concerned with in terms of building the  
4 capacity to produce a vaccine. Work that's been carried  
5 on since in other forum as well. So that's the  
6 context --

7 **Q.** That was the reason why.

8 You identify three broad categories of virus:  
9 Filoviridae, which includes Ebola and the Marburg virus,  
10 they cause haemorrhagic fever; and then this second  
11 category, Coronaviridae, including the severe  
12 respiratory infections Severe Acute Respiratory Syndrome  
13 coronavirus -- we know it as 1, I suppose -- and MERS,  
14 the Middle East Respiratory Syndrome coronavirus.

15 "We note that although there are not currently any  
16 vaccines available against human coronaviruses there are  
17 vaccines for animal coronaviruses ..."

18 Then a third category, which we needn't concern  
19 ourselves with for present purposes.

20 Were you, in essence, identifying that the broad  
21 genus of coronavirus viruses presented a clear and  
22 present danger and that, by implication, this was  
23 something that needed to be addressed in terms of  
24 response, vaccine response of course, but presumably  
25 generally?

116

1 **A.** That was our view then, yes.

2 **Q.** To what extent was the risk or the danger presented by  
3 coronaviruses recognised at the international level,  
4 for example by the WHO and its prioritisation of  
5 diseases?

6 **A.** I didn't become involved in the WHO prioritisation  
7 exercises until two years later, in 2017.

8 **Q.** Is that the WHO Research and Development Blueprint  
9 exercise?

10 **A.** Correct.

11 **Q.** We'll have a look at that, then, straightaway.  
12 INQ000149108.

13 Did the WHO, for our purposes in 2017 and 2018,  
14 produce an annual review of diseases which, in its  
15 opinion, were required to be prioritised because of the  
16 risk that they posed?

17 **A.** That's correct. Specifically, the aim of this exercise,  
18 as I understood it, was to identify gaps in R&D, in  
19 research and development, and so clearly recognised  
20 threats such as influenza were not included in this  
21 exercise. They were felt by the WHO that this was  
22 already covered. So the exercise was quite deliberately  
23 to look beyond influenza and other established threats,  
24 such as HIV/AIDS, to those where there hadn't been  
25 enough attention from the research and development

117

1 the Prioritization Committee. You will see your name  
2 towards the bottom of that list, alphabetically.

3 If we go to page 2, we can see the aims of the  
4 annual review set out.

5 So in essence, I think this process had started  
6 around May 2015, a research and development blueprint  
7 was drawn up to try to reduce the time lag between the  
8 identification of nascent pathogenic outbreaks and the  
9 approval that might be given to an antiviral or vaccine  
10 or some countermeasure.

11 An interim list was drawn up, and then in 2017 that  
12 original list was triaged or reduced so that you could  
13 produce a list of those viruses which really did present  
14 the greatest concern in this way.

15 Is that a correct summary?

16 **A.** It is, yes.

17 **Q.** So we can see that in the middle of the page, this  
18 summary:

19 "The 2017 annual review determined there was  
20 an urgent need for research and development for:

21 "- ...haemorrhagic fevers ...

22 "- Crimean-Congo Haemorrhagic Fever ...

23 "- Filoviral diseases ...

24 "- Middle East Respiratory Syndrome Coronavirus ..."

25 There is our old friend MERS.

119

1 communities.

2 **Q.** Influenza or at least in the form in which it might  
3 strike the United Kingdom, can be met with antivirals.  
4 There is a well known brand, Tamiflu, antiviral, there  
5 are vaccines in place, are there not, for influenza and  
6 if a seasonal influenza comes around that an existing  
7 vaccine cannot address, it's not overly difficult to  
8 modify the vaccine in order to ensure that it's  
9 an appropriate vaccine for that new seasonal variety; is  
10 that all correct?

11 **A.** That's all correct. I wouldn't want to leave you or the  
12 room with the impression that that doesn't mean  
13 influenza is not a danger.

14 **Q.** No, no, no. I think there has been plenty of evidence  
15 on that, Professor.

16 **A.** Okay.

17 **Q.** The point is, though, that influenza is a pathogenic --  
18 well, it's a pathogen for which there is already in  
19 existence a well known and quite well travelled  
20 countermeasure in the form of antivirals and vaccines.

21 But for coronavirus, there was none; is that  
22 correct?

23 **A.** Well, too little would be the WHO's view, yes.

24 **Q.** All right.

25 If we look at page 16, we can see that you were on

118

1 "- Other highly pathogenic coronaviral diseases  
2 (such as Severe Acute Respiratory Syndrome, (SARS) ..."  
3 Then references to the well known diseases of Nipah,  
4 Rift, SFTS and Zika.

5 Is this the position, then, that this senior and  
6 august body and its committee, of which you were  
7 a member, was identifying that because of the risk posed  
8 by coronaviral diseases generally, so not just MERS and  
9 SARS, there was an urgent need for research and  
10 development?

11 **A.** Yep, that was the conclusion of the committee, yes.

12 **Q.** If we go to page 13, we can see then the final report,  
13 if you like, or the determination of the committee, the  
14 list of diseases is then set out, and in addition some  
15 of the thinking and some of the discussion about why  
16 some diseases have made it on to that list and why  
17 others had not.

18 May we take it, then, Professor, from the fact that  
19 this prioritisation committee had identified coronaviral  
20 diseases as presenting the threat that it does, that  
21 there was a general acknowledgement in the scientific  
22 world, perhaps not yet politically but certainly in the  
23 scientific world, of the threat posed by coronaviral  
24 diseases?

25 **A.** Yes, that's right, and you made the point of the

120

1 contrast with influenza at the beginning.

2 **Q.** Was the position the same the following year in 2018, do  
3 you recall? Were MERS and SARS and, by then, something  
4 called Disease X on the list?

5 **A.** So I wasn't a member of the same committee in 2018.  
6 I only sat on it in January 2017. Yes, they still had  
7 MERS and SARS, as I recall. They'd actually combined  
8 them into one category of the severe coronaviruses.  
9 They had at that stage added the category Disease X,  
10 although it also emerged from this 2017 meeting, and  
11 I remember it very well. It's there at the bottom of  
12 the piece of paper we have in front of us now:

13 "In addition to any disease identified by the  
14 Blueprint's decision instrument for new diseases."  
15 That was taken by the WHO and developed into  
16 Disease X concept, and that actually, I believe,  
17 appeared on their website as early as March 2017 as  
18 Disease X, and we had a lot of discussions in the room  
19 in 2017 about the concept of Disease X without actually  
20 attaching that label to it.

21 **Q.** What is the concept of Disease X? My Lady heard  
22 evidence from Professor Whitworth and Dr Hammer on why  
23 this concept, Disease X, has utility and why it has come  
24 to light and why it's being pursued.

25 Is it in essence emblematic or reflective of the

121

1 could take that from new strains of seasonal influenza  
2 which we get every year, so those are new, but generally  
3 we're able to handle those, to something completely out  
4 of the blue. The example I give on that is variant CJD,  
5 which is the causative agent of Mad Cow Disease, which  
6 was a very worrying pandemic -- or epidemic in the UK,  
7 fortunately a small one, in the mid-1990s. That was  
8 completely unanticipated, that -- well, not completely,  
9 there were one or two scientists who had been working on  
10 those sorts of agents, but it was very surprising to the  
11 majority of us.

12 Whereas something like, for example, a new strain of  
13 coronavirus would not be a complete surprise but it  
14 would be new. Again, the point of this exercise is it  
15 might need significant R&D attention as to how you would  
16 deal with something like that if it did arise.

17 **Q.** It is self-evident that the prioritisation committee  
18 were thinking about the possibility of a novel  
19 pathogenic outbreak, a new disease, and by implication  
20 expressing concern about that possibility in a way that  
21 governments perhaps were not. The structural, the  
22 preparedness, the governmental paperwork which has been  
23 adduced before my Lady shows that at that same time  
24 there was not the same degree of attention being paid to  
25 non-influenza pandemics. Why was that, do you think?

123

1 need to make sure that we never take our eye off the  
2 existence or the possible existence of a hypothetical  
3 disease that will take us all by surprise? It may not  
4 necessarily be zoonotic, it could be a different type of  
5 disease, but we need always to be aware of the need to  
6 focus upon that possibility?

7 **A.** Yes, I think the wording in the report of the 2018  
8 committee is slightly different from the one you used  
9 just now, but it is there as a marker to acknowledge  
10 that the next pandemic might be caused by a pathogenic  
11 agent that we are not currently aware of, in other words  
12 something new.

13 It's a very simple concept, obviously, but we felt  
14 it was important that it was explicitly recognised, so  
15 that the -- and remember, this is targeted at the  
16 research and development community, so it's a marker  
17 that the research and development community did not  
18 forget to think about: what do we do if it's an unknown  
19 pathogen? What if it's something we haven't encountered  
20 before? What are the R&D requirements in that scenario?

21 **Q.** May Disease X be either a wholly unknown pathogen or may  
22 it be an existing pathogen but with variant  
23 characteristics, so a known disease but with  
24 significantly different characteristics?

25 **A.** Yes, that's a little bit of a nuanced point. So you

122

1 **A.** That's a very big question.

2 So there was -- undoubtedly you're correct, there  
3 was a focus on influenza in terms of thinking about  
4 pandemic threats and preparedness for them, but also  
5 again, as highlighted in this, the research being done  
6 on infectious agents, you could argue that was also very  
7 focused on influenza.

8 I can give you an analogy, possibly, if you would  
9 like a horseracing analogy, but the situation is this:  
10 if you're deciding whether to invest your budget and bet  
11 on a single horse running in the Grand National and you  
12 brought a committee of horseracing experts together to  
13 decide which one you should put your money on, they  
14 would pretty likely end up with the favourite, they  
15 would say put your money on the favourite, and there is  
16 no question at the time that pandemic influenza was the  
17 favourite.

18 The problem with that, it sounds a very rational  
19 strategy, but the problem is there's an awful lot of  
20 horses in the Grand National, and the chance of the  
21 favourite winning is actually quite small. 4 to 1 would  
22 be very, very short odds for the favourite for  
23 a Grand National. But the chance of the horse winning  
24 with the 4 to 1 odds is only 20%. If you bet on the  
25 favourite, you are very likely to lose your money.

124

1 I think that's a fair analogy to how we were viewing  
 2 threats, pandemic threats at the time.

3 **Q.** The sheer number of riders and racers in the  
 4 Grand National is reflective of the inherent  
 5 unpredictability of pathogenic outcomes and viruses, and  
 6 it is folly to assume a given outcome?

7 **A.** Yes. But if you'd asked me at that time, at that stage,  
 8 which was the favourite in the race, I would have said  
 9 pandemic influenza, but I would not and did not at the  
 10 time favour putting all my money on that one bet. The  
 11 correct strategy, in my view, is to hedge your bets.

12 **Q.** An each way bet on other possible finishers.  
 13 At the same time as this thinking was going on, the  
 14 MERS and SARS epidemics had taken place --

15 **A.** Yes.

16 **Q.** -- and particularly so in the Far East.  
 17 At INQ00018793 there is an article entitled *Lessons*  
 18 *learned from SARS: The experience of the Health*  
 19 *Protection Agency, England*, dated -- if we go forward  
 20 one page -- 16 November 2005.  
 21 If we could go to page 5, I should say that  
 22 this report reports on the experiences of what was then  
 23 the Health Protection Agency in England on how the  
 24 United Kingdom had coped with the limited way in which  
 25 SARS had impacted, relatively speaking, upon the

125

1 and the "potential emergence of a strain of the ...  
 2 virus with pandemic potential".

3 Then there is another reference the following page  
 4 to the need to respond to any large outbreak by way of  
 5 substantial surge capacity.

6 So it is obvious that in the scientific world and  
 7 the academic world, and perhaps to some extent in the  
 8 political world, there was a recognition by the years  
 9 after SARS, so 2005, that a future pathogenic outbreak  
 10 with severe potential, a pandemic, would require surge  
 11 capacity to deal with the sheer numbers and also to deal  
 12 with the fact that the inherent unpredictability of the  
 13 characteristics of a pandemic or the virus meant that  
 14 having a surge capacity in place was part of the  
 15 necessary -- would be part of the necessary  
 16 countermeasures.

17 Why do you think that national governments did not  
 18 expand their surge capacity to deal with the possibility  
 19 of a novel or a new emerging pathogen? Would it have  
 20 been for budgetary reasons only or do you think there  
 21 wasn't a sufficient understanding of the risk?

22 **A.** I can't answer that question for government and say what  
 23 their thinking on it was. I can give you a little bit  
 24 more context.

25 **Q.** Please.

127

1 United Kingdom.

2 If you could scroll back out, please, the last  
 3 paragraph in the section headed "Surge capacity within  
 4 the HPA", so the right-hand side, the right-hand column,  
 5 thank you:

6 "There is currently limited surge capacity to  
 7 respond to an incident such as SARS that requires  
 8 a large team over a prolonged period of time to prevent  
 9 fatigue and potential burn-out of key staff involved in  
 10 the response."

11 Then if we could go to page 6 the last paragraph  
 12 refers to:

13 "Data from countries with substantial outbreaks ..."  
 14 So the bottom right-hand corner, thank you.  
 15 "... demonstrated that basic public health and  
 16 infection control measures such as contact tracing,  
 17 infection control procedures, quarantine and voluntary  
 18 home isolation were effective in controlling the  
 19 outbreaks in the absence of a rapid diagnostic test,  
 20 a vaccine or effective treatment. The outbreak  
 21 highlighted that all levels of the healthcare system in  
 22 the UK need to be prepared to respond; especially as the  
 23 level of threat remains ever present ..."

24 Then, of course, there is the reference to the  
 25 possibility of there being further influenza outbreaks

126

1 **A.** So SARS was a very worrying incipient pandemic, but  
 2 through what was essentially outbreak control in the  
 3 affected countries, it was brought under control, and in  
 4 the end the virus was actually eradicated, it was not  
 5 continued. So it didn't actually develop into what we  
 6 would now call a pandemic.

7 Scientists at the time were very clear that it had  
 8 a good potential to do that, so it was an extraordinary  
 9 success story, led particularly by the World Health  
 10 Organisation, to bring that potential pandemic not only  
 11 under control but actually to eliminate the virus, but  
 12 it never actually developed into a wide-scale population  
 13 problem of the sort that we would see, say, we'd expect  
 14 to see with influenza.

15 And MERS was the same, MERS was never -- it has  
 16 produced lots of outbreaks and very concerning ones, but  
 17 it's not gone into community transmission, it's not  
 18 spread through whole populations.

19 So I think even despite experience of SARS, there  
 20 was probably a little bit of thinking that this was  
 21 still a theoretical possibility. In the event, SARS  
 22 didn't start major epidemics.

23 **Q.** Was that because of the lower rates of transmission as  
 24 opposed to the fact that certain countries had been well  
 25 placed to bring it under control and did so?

128



1 **A.** So I'm not sure how well placed other countries were to  
 2 respond to SARS. So the SARS outbreak was 2003, and it  
 3 was new, it was the first severe coronavirus. We knew  
 4 of other human coronaviruses, they have been around  
 5 a long time, but they cause colds, basically. So SARS  
 6 was the first severe one, so I can't say how countries  
 7 such as China, who are at the epicentre of the outbreak,  
 8 how well prepared they felt they were for it, but they  
 9 responded well, and the way they responded to SARS was  
 10 by this rapid detection of cases and the isolation of  
 11 cases and in some cases their -- in some instances their  
 12 contacts, and this was sufficient to bring that  
 13 particular -- those particular set of outbreaks under  
 14 control. Coupled -- I should, because this is  
 15 important -- with very rigorous infection control in  
 16 healthcare settings, because both SARS and MERS have  
 17 a propensity to spread within healthcare settings. So  
 18 they were able to bring it under control and did so, as  
 19 I say, remarkably effectively.

20 **Q.** There were in the United Kingdom a number of exercises  
 21 between 2015 and 2018 concerned with testing our  
 22 capabilities to deal with high-consequence infectious  
 23 diseases. So there was an Ebola surge capacity  
 24 exercise, a coronavirus-related exercise,  
 25 Exercise Valverde, the MERS exercise which you'll

129

1 very clear that they do have a scenario there, they have  
 2 the scenario you described, where there's a major  
 3 outbreak but it is containable, the exercise is about  
 4 containing it, but they do also allow the possibility of  
 5 a community-wide outbreak. So that is recognised within  
 6 the risk assessment, but whether it was explored as  
 7 an exercise I have no knowledge of that myself.

8 **Q.** But at the same time the risk assessment process divided  
 9 up, by way of pigeon-holing these pathogenic outbreaks,  
 10 the diseases into two categories. You had influenza  
 11 pandemic, which is of course regarded as a mass event,  
 12 and then, by contrast, new emerging disease, which was  
 13 assumed to be confined to healthcare settings, to have  
 14 a small number of casualties, in the tens or hundreds,  
 15 and then casualties, those who are falling sick, in the  
 16 thousands.

17 But there was no middle ground, it was either  
 18 influenza pandemic with massive widespread transmission  
 19 and pandemic potential, with hundreds of thousands of  
 20 deaths, or very limited low number of deaths, HCID.  
 21 There was no consideration given as a separate category  
 22 to an HCID or a pathogen, a novel pathogen, with  
 23 widespread potential, pandemic potential.

24 **A.** So I agree, that is how it looks.

25 **Q.** Were you aware, was the scientific community aware of

131

1 recall, Exercise Alice, and then, more recently, an HCID  
 2 related exercise called Exercise Broad Street.

3 All those exercises, though, focused, did they not,  
 4 upon HCIDs? Were HCIDs generally regarded, as perhaps  
 5 the name identifies, as being high consequence, so very  
 6 high levels of fatality, high-consequence diseases, but  
 7 diseases which would be associated with limited spread,  
 8 perhaps confined to healthcare settings, close contacts,  
 9 patients and the like, and not susceptible to widespread  
 10 transmission such as influenza or, as we now know,  
 11 Covid?

12 **A.** So I'm not familiar with all the exercises you listed  
 13 there, but I'm familiar with some, and I would  
 14 absolutely support the strategy of conducting exercises  
 15 that look at high-consequence infectious disease  
 16 outbreaks, so ones that don't generate into full-blown  
 17 epidemics. I mean, that's clearly something that  
 18 government should be doing and was doing.

19 The question then is whether or not people should  
 20 have been looking also at the possibility that these  
 21 would move beyond outbreaks into major epidemics that  
 22 would affect the community.

23 Now, this isn't a report of one of the exercises,  
 24 but I think it comes out of it, so some of the risk  
 25 assessments on SARS, one of the papers you gave me, is

130

1 that approach being adopted in the risk assessment  
 2 process at the time and also in what is now known to be  
 3 the 2011 UK strategy on pandemic influenza?

4 **A.** Were we aware, sorry?

5 **Q.** Were you aware of that approach being adopted and  
 6 applied in the government's strategic approach, its  
 7 pandemic planning, or in the risk assessment procedures  
 8 which the government applied?

9 **A.** So, yes, but there are different phases here. So in the  
 10 immediate aftermath of 2003/4, when the SARS epidemic,  
 11 let's describe it as, happened there was a lot of  
 12 thinking about SARS-like events. But then there was the  
 13 swine flu pandemic of 2009/2010, and that reignited  
 14 interest in influenza pandemic. So we tend to be rather  
 15 reactive, I think, in our thinking.

16 **Q.** Does it follow from the fact that that 2011 strategy was  
 17 concerned only with pandemic influenza that aspects of  
 18 that strategic approach were going to be inappropriate  
 19 and ineffective for a coronavirus?

20 **A.** Well, we all know that to be the case now, and I would  
 21 say yes, it was visible at the time, if anyone was  
 22 looking at it through that particular lens, but it was,  
 23 and it says so at the top of the document, a pandemic  
 24 influenza preparedness plan and not a pandemic  
 25 preparedness plan, and I would regard those as different

132

1 things. The pandemic -- the influenza pandemic  
2 preparedness plan has not been fully tested yet, thank  
3 goodness, so we wouldn't know. But we weren't -- what's  
4 the phrase? We'd done our homework but it turned out  
5 we'd prepared for the wrong exam.

6 **Q.** Was it generally understood or was the scientific  
7 community conscious that there was, relatively speaking,  
8 very little debate in governmental terms of, flowing  
9 from the risk of differences in incubation period,  
10 differences in levels of transmission, differences in  
11 the R0 number, differences in the type of infection,  
12 whether it might be asymptomatic or symptomatic, that  
13 there was no widespread debate about what possible  
14 countermeasures could be devised, thought of, debated  
15 and analysed to meet a different type of pandemic  
16 outbreak, so no debate of the countermeasures of mass  
17 contact tracing, mass diagnostic testing, the impact  
18 upon schools of long-term closures, the impact upon  
19 marginalised sectors of society, the impact of mandatory  
20 quarantining? That debate in a general sense doesn't  
21 appear ever to have taken place pre-Covid.

22 **A.** Again, those two phases, the post SARS phase and the  
23 post swine flu phase, are relevant. In the academic and  
24 the research communities there was always a tremendous  
25 amount of interest and work on the best ways that we

133

1 therefore there was a tendency to say, "We have  
2 correctly identified the greatest threat as pandemic  
3 influenza, we can focus on that", and because other  
4 threats are lesser in form they just tended to slip out  
5 of the side?

6 **A.** I think that's exactly right, and I have experience  
7 going back over 20 years working as an adviser to  
8 various government departments and agencies, and yes,  
9 I would say that was fair. Once the main threat had  
10 been identified, that became the priority.

11 Again, this is maybe a job for the Inquiry, but we  
12 had a pandemic influenza preparedness plan, and even if  
13 it was, by the time the pandemic arrived, nine years  
14 old, but we had it, but it would have been an awful lot  
15 of work by an awful lot of people to prepare pandemic  
16 preparedness plans for a SARS-like pandemic, that we're  
17 just describing, or a haemorrhagic fever threat, or  
18 a vector-borne, that is the mosquito-transmitted threat,  
19 or a food-borne threat like Mad Cow Disease. It would  
20 have been an awful lot of effort for the relevant  
21 government departments to prepare for all those  
22 separately.

23 **Q.** But a lot of lives potentially saved, of course?

24 **A.** As you say, an important exercise.

25 **Q.** Are you aware that following the pandemic the Royal

135

1 might come up with to control those particular  
2 challenges, but scientists are like everyone else, we  
3 also follow what happens, so we were focusing a lot on  
4 SARS-like ones in the early 2000s and then shifted more  
5 to pandemic influenza later. But not exclusively so,  
6 there was still work on that. So there's a lot of  
7 research going on about what the right ways are to  
8 respond to these different types of threat, and, as you  
9 explored with me at the beginning of this, there was  
10 also some talk about the diversity of threats, what  
11 those other types of threats might look like. But it  
12 was always apparent to me, and I'm sure to many other  
13 colleagues at the time, that by the time it got into  
14 government and Department of Health and ... influenza  
15 had somehow risen to the top again, and a lot of this  
16 other work, sort of supporting work for other types of  
17 threat, got less attention and didn't appear, as you  
18 quite rightly say, in the plans that were written in  
19 that period.

20 **Q.** I think my Lady heard from a witness a couple of weeks  
21 ago who observed that it's a necessary part -- or it's  
22 an unintended consequence, perhaps, from governance and  
23 from systems of government that officials and  
24 politicians like to be able to have a piece of paper  
25 that identifies the problem and the answer, and

134

1 Academy of Engineering reported upon the risk assessment  
2 process operated by the United Kingdom Government and  
3 identified that there had been too great a focus on  
4 pandemic influenza and reported that there had to be  
5 a wider consideration of the range of possible scenarios  
6 which might ensue?

7 **A.** Yes, I am, and my understanding is that is now being  
8 built into current cross-government risk assessments,  
9 but I haven't seen a final draft of that assessment yet.

10 **Q.** One separate but related point, in the scientific world  
11 there was therefore, we can see from your evidence,  
12 extensive debate about possible countermeasures that  
13 could be relied upon to meet the particular range of  
14 scenarios which might emerge. Was there extensive  
15 debate at academic and scientific level of the benefits  
16 of wearing masks? Putting aside whether or not they did  
17 prove to have significant benefit, was there  
18 nevertheless a debate taking place about the degree of  
19 benefit pre-Covid?

20 **A.** I am aware of that issue being discussed. It wasn't one  
21 that I had personally got particularly involved in, but  
22 it has long been an issue as to whether masks are  
23 effective or not effective and that has been discussed  
24 in scientific and health circles for many years now.

25 **Q.** A separate topic, please, Professor, data collection.

136

1 In March of 2017 you started engaging in a course of  
2 correspondence with the then Chief Medical Officer of  
3 Scotland, Dr Catherine Calderwood, from whom my Lady  
4 heard this morning, about the problems that you had  
5 encountered in getting access to data to allow you to  
6 carry out a study that you were then engaged in.

7 With your vast experience, is there anything that  
8 you would like to say about the inherent or strategic  
9 difficulties placed in the way of efficient data  
10 gathering across nations, in your case Scotland?  
11 Pre-Covid, was the system of data gathering for the  
12 purposes of research and healthcare an efficient one?

13 **A.** It was not, but again, just to slightly correct the  
14 context, we're not talking about the actual gathering of  
15 data here -- although there may be issues connected with  
16 that too --

17 **Q.** It was the access?

18 **A.** -- we're talking about the access to that, in this  
19 particular context that you raised, for health research  
20 purposes, and the procedures for accessing data in  
21 Scotland had become so extraordinarily onerous that in  
22 what I would have thought was a fairly standard,  
23 routine, non-demanding research project that used  
24 anonymised data, so there was no risk of patient  
25 confidentiality or anything, the process of accessing

137

1 correspondence shows that she responded to you offering  
2 to lend her support and inviting you to contact I think  
3 some particular officials who she thought might break  
4 the logjam.

5 Was this the position, that it appeared to you that  
6 there was too great a weight placed upon privacy rights  
7 and, in the balance between proper medical research and  
8 data protection, the balance was out of kilter?

9 **A.** Completely out of kilter. The hurdles put before us in  
10 the interests of data protection were, in my view,  
11 entirely disproportionate and were a serious impediment  
12 to getting potentially life-saving research done.

13 **Q.** Are you able to say whether or not post-Covid there has  
14 been an improvement in that balance and whether or not  
15 access to proper data for the purposes of serious  
16 research is now easier?

17 **A.** It became easier during Covid. I realise that's not the  
18 phase you're talking about. I think it remains to be  
19 seen what the legacy of that is. I have in the past  
20 experienced this exact problem. I advised the then  
21 chief scientist, Sir David King, on the foot-and-mouth  
22 disease outbreak of 2001, advising him directly, and we  
23 had exactly the same issues there, that he wanted --  
24 you know, this particular problem, he wanted  
25 mathematical models of how that epidemic might develop.

139

1 those data took over a year, hundreds of person hours,  
2 and was the main job that one of my graduate students  
3 assigned to this particular project did for the whole  
4 year.

5 We got access to the data finally, but only because  
6 our colleagues in the various aspects of the process  
7 that were required to deliver the data were  
8 extraordinarily helpful and were working with us. But  
9 it was extremely onerous, and I have made the decision  
10 now, and I stick by it, that I will not put graduate  
11 students on that kind of research again in Scotland  
12 until this is fixed. It's just far, far too onerous.

13 Presumably one of the things you're referring to in  
14 that email correspondence is I wrote that I was very  
15 concerned about the implications of having such  
16 an onerous data access system in the event of  
17 an emergency like an influenza pandemic.

18 **Q.** You said:

19 "There is a compelling case that Scottish lives are  
20 being put at risk because research that needs to be done  
21 is not being done ... I dread to think of the  
22 consequences if we ever find ourselves facing a health  
23 emergency such as pandemic influenza."

24 **A.** That's correct.

25 **Q.** You called upon Dr Calderwood to assist and the email

138

1 We couldn't provide them at the time because we didn't  
2 have key data we needed from what was then the Ministry  
3 of Agriculture, Food and Fisheries, because of alleged  
4 data confidentiality issues. During the pandemic --  
5 epidemic, foot-and-mouth epidemic, once it had started,  
6 data we had been seeking for several years suddenly  
7 arrived on my desk.

8 So during an emergency, things change. And what  
9 became -- what were barriers there -- but it would have  
10 been much more useful then to have had the data in  
11 advance, we would have been months ahead, and it would  
12 have been much more useful in the Covid pandemic to have  
13 all these arrangements sorted out in advance because we  
14 would have been months ahead.

15 So we were left in the position of having to deal  
16 with these data access issues in the face of a pandemic.

17 **LADY HALLETT:** And are the issues the same for data access  
18 around the United Kingdom? You're talking about what  
19 happened to you in Scotland.

20 **A.** No, I think they're not exactly the same, the procedures  
21 are not exactly the same, but I suspect many of my  
22 colleagues in England would share my views that this is  
23 not an easy logjam to break, as Mr Keith put it.

24 **LADY HALLETT:** All right.

25 **MR KEITH:** I think the Data Protection Act and the GDPR

140

1 apply across the United Kingdom, but --

2 **A.** Yes, but the processes --

3 **Q.** -- the processes for accessing data in Scotland ...

4 During the pandemic in fact -- well, my Lady's heard

5 evidence that there were a number of remarkable surveys

6 and data-driven projects put into place, from the

7 ZOE project, Vivaldi, the Covid-19 survey and so on.

8 There was one in Edinburgh, the EAVE data analysis

9 project, which I think was able to secure access to data

10 from general practitioners in healthcare settings

11 relating, obviously anonymously, to over 5 million

12 people in the population for the purposes of carrying

13 out modelling and research and the like.

14 So is the lesson, if there is a lesson to be drawn

15 from this, Professor, that we cannot allow ourselves to

16 slip back? Having, under the exigencies of the

17 emergency, been able to access such data to save lives,

18 we must make sure that for research purposes data access

19 is allowed to continue?

20 **A.** So I think there were actually two lessons --

21 **Q.** Please.

22 **A.** -- one might draw from that. So first of all the EAVE

23 project was led by my colleague Sir Aziz Sheikh at the

24 University of Edinburgh, and a very dedicated team that

25 worked extraordinarily hard on it. It produced some

141

1 had to be set up, and the set-up included all these data

2 access protocols that had to be -- that took months to

3 work our way through. But it wasn't set up, nor were

4 some of the other ones you mentioned, nor was Zoe, nor

5 was QCovid, nor was COG-UK, the genome wide ... all of

6 these things, and there's many other initiatives --

7 CoMix, you mentioned CoMix -- all of these had

8 a tremendous impact, positive impact, on how we managed

9 the pandemic. None of them were set up in advance. We

10 would have been so much further forward if they had

11 been.

12 If I may add one further level to this story, we, in

13 the Royal Society of Edinburgh, which you mentioned I'm

14 a fellow of, we produced a report saying how important

15 it was to have this sort of data collection systems, the

16 data pipelines, the information flows, the permissions

17 set up in advance, but we put this in a report that was

18 published in the wake of the swine flu pandemic, and

19 these things weren't done, and so it was a cause of

20 great frustration to me and many other colleagues,

21 including in EAVE, that we were reliving, in a way, the

22 frustrations we'd had ten years before, almost ten years

23 before, and we were going through this again. They

24 hadn't been set up in advance.

25 **Q.** During that time you had been lone voices in the

143

1 tremendously important information very quickly, for the

2 reason you suggested, because we were able to access

3 health records and link health records, which is

4 crucial. The linkage of health data is particularly

5 difficult, particularly onerous in terms of data

6 protection.

7 But we were able to do it, and that provided

8 invaluable information very quickly on the efficacy of

9 vaccines shortly after the mass vaccination programme

10 began and also on the severity of the different variants

11 of Covid. So this was extraordinarily important

12 information, and the team did remarkable work on this.

13 But they didn't produce their first outputs until

14 June 2020. If we'd had that in place in January,

15 February and March 2020, we could well have produced

16 extremely valuable data that would have informed the

17 early response. But we didn't have it in place, and one

18 of the reasons we didn't have it in place is we didn't

19 have the permissions set up.

20 There are other reasons too, I wouldn't say that was

21 the only one. So that's absolutely one lesson: you need

22 all this -- sorry, I beg your pardon -- we need all this

23 in place in advance.

24 The second lesson is, as I've just explained, EAVE

25 wasn't in place ready to go in place in January 2020, it

142

1 wilderness, I expect?

2 **A.** In terms of the need for data during pandemics, I would

3 say not, but -- I would say there was a small chorus of

4 voices, but they weren't heard. Data protection had

5 complete sway over this. That was the priority at the

6 time and not access to researchers or to research

7 programmes that might turn out to be useful if there was

8 a pandemic. That was very, very low, I think, on the

9 list of priorities people had. But as you say, I did

10 object to that prioritisation in writing to the then

11 Chief Medical Officer of Scotland.

12 **Q.** Three final topics, please, briefly, Professor.

13 Firstly, you are now a member of the Standing

14 Committee on Pandemic Preparedness, the body in Scotland

15 set up by the Scottish Government, about which my Lady

16 heard evidence from Caroline Lamb, the Director

17 General for Health and Social Care in Scotland, and from

18 Dr Calderwood, the former Chief Medical Officer.

19 Does the existence of such a body on -- a Standing

20 Committee on Pandemic Preparedness mean that, at least

21 insofar as Scotland is concerned, there is less risk of

22 a loss in institutional memory? That is to say if there

23 is a body with political clout able to keep the pot

24 boiling, then the learning, the incredibly valuable

25 understanding and knowledge which has been gained as

144

1 a result of having to deal with a pandemic is less  
 2 likely to be lost; would you agree?  
 3 **A.** I think that's exactly right, and my understanding is  
 4 that's one of the primary purposes of the committee.  
 5 **Q.** Secondly, you call in your witness statement for further  
 6 focus to be paid on the less notable or perhaps the less  
 7 well known disciplines of epidemiology, clinical  
 8 medicine, diagnostic medicine and public health  
 9 research, as opposed to other perhaps more famous areas,  
 10 genomic testing perhaps. What did you mean by that?  
 11 Why is there a need for greater focus on those areas of  
 12 medicine?  
 13 **A.** I think this is a tremendously important point for the  
 14 scientific community, the health research community, to  
 15 bear in mind. During the pandemic and since the  
 16 pandemic, there has been quite rightly tremendous focus  
 17 on the technological innovations, particularly,  
 18 for example, the development of vaccines, and greater  
 19 claim to the underpinning science, the science of --  
 20 decades of science that underpin that, and that is, as  
 21 you well know, an extraordinary success story that we  
 22 should all celebrate, so I'm in no way putting that to  
 23 one side. But for the first year of the pandemic,  
 24 slightly less -- mass vaccination in the UK started on,  
 25 I think it was, December 8, 2020, remarkably fast, quite

145

1 need two doses or more, it takes more time and, while  
 2 that is happening and the vaccine has yet to do its  
 3 work, we're going to need all those inputs, and I really  
 4 hope that is not lost in -- not just by this Inquiry but  
 5 by the scientific and health communities as a whole;  
 6 that we recognise we are going to need them next time.  
 7 **Q.** And the government?  
 8 **A.** And the government.  
 9 **Q.** Finally this: a number of your colleagues in the  
 10 scientific world and professional world of medicine and  
 11 epidemiology have said, have observed: don't be fooled  
 12 into thinking that the next pandemic will be like the  
 13 last one. What could the next pandemic be? Will it  
 14 necessarily be a coronaviral pandemic, or something  
 15 else?  
 16 **A.** There are many different candidates. In the document  
 17 you referred to early on we identified 22 categories of  
 18 virus that we -- 22 -- were concerned about that were  
 19 potential threats. The ones we've talked about in the  
 20 hearing today include not only SARS-like ones but Ebola,  
 21 Zika, BSE or Mad Cow Disease, these are very, very, very  
 22 different threats. And a preparedness plan that  
 23 prepares you for another SARS-like event will not  
 24 prepare you for another Mad Cow Disease-like event or  
 25 any stretch of the imagination. There may be some

147

1 extraordinary. But up to that point, other than trials,  
 2 the vaccines had not saved a single life. They weren't  
 3 there, we didn't have them. So what saved lives were  
 4 those disciplines you just listed, the much less  
 5 glamorous and well funded and well regarded disciplines  
 6 of patient care, epidemiology, working out what public  
 7 health interventions work. They haven't, I think,  
 8 received the same attention, they haven't been put on  
 9 a pedestal to the level that -- quite rightly -- the  
 10 vaccine development has been, and we will need them next  
 11 time.

12 There is, as you're well aware, a very ambitious --  
 13 but ambition is good -- but a very ambitious plan from  
 14 the G7 to deliver a vaccine within 100 days of a public  
 15 health emergency being declared, and that's fine, but  
 16 while we're waiting for the vaccine, we will need to  
 17 control the next pandemic in other ways, and that will  
 18 require knowledge from the disciplines that I've just  
 19 mentioned; and it's not just 100 days, because after the  
 20 roll-out started in the UK of the vaccine, that was not  
 21 the end of the UK's pandemic. More than half the people  
 22 who died in the UK died of Covid after the vaccination  
 23 programme began.

24 It takes time to roll out a vaccination programme,  
 25 and when you learn during that process that you actually

146

1 commonalities, but they are very, very different. So  
 2 one obvious lesson is: don't just prepare for the  
 3 pandemic you've just had.

4 And the other point I would make, and I hope this  
 5 doesn't sound too shocking, but it's: on the scale of  
 6 potential pandemics, Covid-19 was not at the top and it  
 7 was possibly quite far from the top. It may be that  
 8 next time -- and there will be a next time, I don't know  
 9 when, it may be quite some time in the future, but  
 10 I don't know when -- but there will be a next time, and  
 11 it's possible that next time we are dealing with a virus  
 12 that is much more deadly and is also much more  
 13 transmissible, in which case actually the things we did  
 14 to control Covid-19 wouldn't have worked anyway, at  
 15 least not without society completely falling apart.

16 Now, I'm not sitting here as a doom-monger saying  
 17 "This is going to happen" or "This is going to happen  
 18 soon", but I am confident enough to tell government that  
 19 this is something you should be concerned about, you  
 20 should be prepared for. The next pandemic could be far  
 21 more difficult to handle than Covid-19 was, and we all  
 22 saw the damage that that pandemic caused us.

23 **MR KEITH:** Thank you, Professor.

24 My Lady, you have granted permission to Covid-19  
 25 Bereaved Families for Justice United Kingdom to ask some

148

1 questions on the Scottish Government's Standing  
2 Committee on Pandemic Preparedness, the body to which  
3 the professor has already referred.

4 **LADY HALLETT:** Mr Weatherby.

5 **Questions from MR WEATHERBY KC**

6 **MR WEATHERBY:** Thank you very much.

7 Just a very few questions from me, Professor, and as  
8 Mr Keith has said I'm asking questions on behalf of  
9 Covid Bereaved Families for Justice United Kingdom.

10 I just want to ask you a small number of questions  
11 about the SCoPP, the Standing Committee on Pandemic  
12 Preparedness in Scotland, of which you're a member.

13 **A.** Yes.

14 **Q.** Am I right that the standing committee, the nature of  
15 a standing committee is that it sits regularly?

16 **A.** Yes, we met a number of times.

17 **Q.** Yes.

18 **A.** I mean, it's not just every month or something, we have  
19 met many --

20 **Q.** But it's meant to be there permanently and going on into  
21 the future; is that right?

22 **A.** Yes, that's my understanding.

23 **Q.** Its purpose is to maintain an overview of pandemic  
24 preparedness from the view of the scientist or from  
25 a technical point of view, and to co-ordinate the

149

1 data gathering and analysis to be considered as part of  
2 national infrastructure, and you've spoken a lot about  
3 that; the need to strengthen scientific advice and  
4 structures and engagement with citizens; and the fourth  
5 one, the need for collaboration within the UK and  
6 collaboration between the UK and global institutions for  
7 innovation and preparedness?

8 **A.** Yes, those four priority areas were arrived at after  
9 a number of consultations within the committee, and  
10 actually some beyond as well, but that's where we've  
11 arrived at.

12 **Q.** That's very helpful.

13 Finally this: in the committee's terms of reference,  
14 the committee is asked to respond to commissions from  
15 the Scottish Government, questions essentially from the  
16 Scottish Government, and to address things that have  
17 arisen there. But the terms of reference expressly  
18 indicate that SCoPP should address other issues of its  
19 own initiative where it feels necessary, so scientific  
20 autonomy. Yes?

21 **A.** Yes.

22 **Q.** Is that a very important feature for a body like SCoPP?

23 **A.** Thank you very much for that question. Yes, I think it  
24 is. The advisory groups that I have been on over many  
25 years for many different government departments, and

151

1 scientific advice on relevant issues and identify gaps  
2 in advice to government; is that right?

3 **A.** Yes.

4 **Q.** And it's primarily positioned to advise the  
5 Scottish Government --

6 **A.** Yes.

7 **Q.** -- on pandemic preparedness?

8 This is an approach that is post pandemic, isn't it,  
9 or brought in during the pandemic?

10 **A.** It's post pandemic, yes.

11 **Q.** Yes, and is this a new approach to address the gap that  
12 I think you've identified in relation to the fact that

13 scientists have been for some years, particularly  
14 yourself, talking about the hedging of bets, whereas  
15 governments have been focused -- or the United Kingdom  
16 Government has been focused on the backing the favourite  
17 model? Is a primary role of the SCoPP to try to bridge  
18 that gap?

19 **A.** I don't know if I can accurately describe it as  
20 a primary role, but certainly, yes --

21 **Q.** Yes.

22 **A.** -- pandemic intelligence is one of our roles, yes.

23 **Q.** Yes, okay.

24 I think that SCoPP has already identified four key  
25 themes: the need for a centre of pandemic preparedness;

150

1 also working with some in Scotland, have tended to be  
2 reactive. We haven't had that autonomy --

3 **Q.** Yes.

4 **A.** -- to bring topics of concern to the table. I mean,  
5 informally, of course, they were a vehicle for doing so,  
6 but it's not been in the terms of reference of other  
7 advisory committees --

8 **Q.** Yes.

9 **A.** -- I've sat on, and I'm very happy that it is in the  
10 terms of reference.

11 **Q.** Yes, and perhaps a lesson for others?

12 **A.** Yes.

13 **Q.** And this autonomy brings a diversity of input, it guards  
14 against groupthink, and it involves a challenge to  
15 orthodoxy and innovation of scientific advice; is that  
16 right?

17 **A.** Yes. I mean, one way I like to put it, you know, when  
18 you're a scientist or adviser in that role, is you can't  
19 trust government to ask the right questions.

20 **Q.** Yes.

21 **A.** So that's hopefully going to enable the right questions  
22 to be asked in the future.

23 **MR WEATHERBY:** Professor, thank you very much.

24 **LADY HALLETT:** Thank you, Mr Weatherby.

25 Thank you very much, Professor Woolhouse. You've

152

1 finished my professorial day. Thank you very much for  
 2 your help, it's been extremely interesting and helpful.  
 3 Thank you.

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

5 **(The witness withdrew)**

6 **MR KEITH:** My Lady, that concludes the evidence for today.

7 **LADY HALLETT:** 10 o'clock tomorrow, please.

8 **(3.12 pm)**

9 **(The hearing adjourned until 10 am**  
 10 **on Thursday, 6 July 2023)**

11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25

1	<b>INDEX</b>	
2	DR CATHERINE CALDERWOOD (sworn)	
3	Questions from LEAD COUNSEL TO .....	1
4	THE INQUIRY	
5	Questions from THE CHAIR .....	21
6	Questions from MS MUNROE KC .....	22
7	Questions from MS MITCHELL KC .....	27
8		
9	PROFESSOR JIM McMANUS (sworn) .....	32
10	Questions from LEAD COUNSEL TO .....	32
11	THE INQUIRY	
12	Questions from MS MUNROE KC .....	65
13		
14	PROFESSOR KEVIN FENTON (affirmed) .....	69
15	Questions from COUNSEL TO THE .....	69
16	INQUIRY	
17	Questions from MS MUNROE KC .....	97
18		
19	PROFESSOR MARK WOOLHOUSE (affirmed) .....	107
20	Questions from LEAD COUNSEL TO .....	107
21	THE INQUIRY	
22	Questions from MR WEATHERBY KC .....	149
23		
24		
25		

	<b>11.30 am [1]</b> 49/16 <b>117 [1]</b> 54/24 <b>119 [1]</b> 55/1 <b>12.55 pm [1]</b> 106/18 <b>120 [1]</b> 55/4 <b>13 [3]</b> 14/7 87/2 120/12 <b>13 April [1]</b> 70/8 <b>14 [1]</b> 26/11 <b>142 [1]</b> 35/5 <b>15 [1]</b> 70/7 <b>15 minutes [1]</b> 66/3 <b>15 of [1]</b> 98/8 <b>15,000 [1]</b> 2/15 <b>151 [1]</b> 36/18 <b>16 [1]</b> 118/25 <b>16 November 2005 [1]</b> 125/20 <b>17 [1]</b> 104/19 <b>1847 [1]</b> 34/12 <b>19 [33]</b> 12/2 14/6 16/17 19/4 22/10 22/13 22/23 24/6 54/5 65/22 68/13 70/24 76/14 79/19 97/2 97/12 98/11 98/14 98/18 101/20 105/18 108/10 110/10 111/2 111/21 112/2 114/1 114/21 141/7 148/6 148/14 148/21 148/24 <b>1972 [1]</b> 72/8 <b>1984 [1]</b> 46/10 <b>1990s [1]</b> 123/7	<b>2016 [1]</b> 53/2 <b>2017 [9]</b> 117/7 117/13 119/11 119/19 121/6 121/10 121/17 121/19 137/1 <b>2018 [7]</b> 13/19 24/25 117/13 121/2 121/5 122/7 129/21 <b>2019 [4]</b> 4/8 7/18 18/23 108/20 <b>2020 [19]</b> 2/7 5/10 11/19 12/8 18/13 24/23 25/9 25/22 25/23 58/14 68/13 71/6 73/19 108/10 112/16 142/14 142/15 142/25 145/25 <b>2021 [2]</b> 71/4 108/7 <b>2023 [3]</b> 1/1 107/7 153/10 <b>21 [1]</b> 24/20 <b>21 January 2020 [1]</b> 68/13 <b>22 [2]</b> 147/17 147/18 <b>22 Welsh [1]</b> 37/16 <b>253 [3]</b> 63/18 63/23 64/2 <b>255 [1]</b> 64/14 <b>256 [1]</b> 64/14 <b>258 [1]</b> 64/22 <b>26 [1]</b> 53/3 <b>260 [1]</b> 65/3 <b>262 [1]</b> 65/9 <b>27 April 2023 [1]</b> 107/7	<b>7</b> <b>75 years [1]</b> 80/12 <b>75th [1]</b> 2/1 <b>9</b> <b>94 [2]</b> 40/10 40/12 <b>95 [1]</b> 40/22 <b>96 [1]</b> 41/19 <b>A</b> <b>abilities [1]</b> 64/24 <b>ability [4]</b> 51/1 83/19 95/16 105/24 <b>able [43]</b> 3/17 3/23 5/23 6/20 17/13 18/21 19/22 20/4 20/5 21/4 27/2 29/17 41/20 56/18 61/11 61/21 82/20 87/12 88/10 88/19 88/20 89/21 90/20 92/12 93/25 95/20 95/25 101/10 101/12 102/25 103/18 104/12 104/14 115/13 123/3 129/18 134/24 139/13 141/9 141/17 142/2 142/7 144/23 <b>abolished [1]</b> 86/17 <b>abolition [2]</b> 85/24 86/18 <b>about [84]</b> 6/2 6/3 6/15 7/11 8/11 8/16 9/4 14/11 15/1 17/3 17/6 17/11 23/3 26/3 28/4 28/13 30/8 30/17 30/19 30/21 33/19 33/21 35/5 35/18 36/18 45/12 45/14 52/24 56/3 56/4 56/12 60/9 60/10 64/9 65/24 66/3 66/3 73/25 79/25 80/1 82/2 89/7 94/18 95/14 96/15 97/8 97/15 104/10 105/4 105/5 105/8 110/1 112/8 112/12 112/25 113/16 114/23 120/15 121/19 122/18 123/18 123/20 124/3 131/3 132/12 133/13 134/7 134/10 136/12 136/18 137/4 137/8 137/14 137/18 138/15 139/18 140/18 144/15 147/18 147/19 148/19 149/11 150/14 151/2 <b>above [1]</b> 47/10 <b>absence [3]</b> 98/16 98/21 126/19 <b>absolutely [10]</b> 9/5 20/17 23/22 23/23 25/12 34/4 74/22 82/23 130/14 142/21	<b>academia [2]</b> 70/22 96/2 <b>academic [4]</b> 107/14 127/7 133/23 136/15 <b>Academy [1]</b> 136/1 <b>accept [1]</b> 25/7 <b>access [22]</b> 24/22 27/1 33/16 51/15 55/9 61/10 90/9 92/18 137/5 137/17 137/18 138/5 138/16 139/15 140/16 140/17 141/9 141/17 141/18 142/2 143/2 144/6 <b>accessibility [1]</b> 51/6 <b>accessing [4]</b> 25/1 137/20 137/25 141/3 <b>according [1]</b> 34/11 <b>account [3]</b> 46/1 91/17 113/18 <b>accreditation [3]</b> 72/12 72/21 73/13 <b>accreditations [1]</b> 72/1 <b>accredited [3]</b> 34/7 83/10 85/11 <b>accurately [1]</b> 150/19 <b>achieve [3]</b> 43/24 91/15 93/13 <b>acknowledge [3]</b> 102/2 102/5 122/9 <b>acknowledgement [1]</b> 120/21 <b>across [23]</b> 4/1 10/18 15/15 15/16 24/18 28/3 42/4 53/10 66/10 67/8 67/18 70/22 72/18 76/3 76/24 81/11 91/22 99/2 102/11 102/24 110/1 137/10 141/1 <b>act [13]</b> 46/10 46/10 49/18 62/24 78/21 79/1 80/2 80/7 80/10 81/16 93/3 93/12 140/25 <b>acting [1]</b> 5/8 <b>actions [4]</b> 14/7 14/18 25/14 76/6 <b>actual [3]</b> 110/9 111/19 137/14 <b>actually [23]</b> 11/7 11/12 12/11 17/24 22/4 56/22 105/17 110/2 111/5 112/21 113/4 121/7 121/16 121/19 124/21 128/4 128/5 128/11 128/12 141/20 146/25 148/13 151/10 <b>Acute [2]</b> 116/12 120/2 <b>add [4]</b> 46/15 54/22 85/2 143/12
<b>LADY HALLETT:</b> <b>[32]</b> 1/3 1/22 21/12 21/15 22/9 22/14 22/16 27/11 32/3 35/24 36/14 39/4 49/10 49/12 65/17 69/15 77/16 84/2 84/16 85/21 97/5 106/7 106/9 106/11 106/16 112/17 114/16 140/17 140/24 149/4 152/24 153/7 <b>MR KEITH: [22]</b> 1/4 1/9 2/6 21/10 21/13 22/10 22/15 32/8 32/12 35/25 36/15 39/5 49/11 49/17 65/13 69/20 106/23 107/3 113/7 140/25 148/23 153/6 <b>MR WEATHERBY:</b> <b>[2]</b> 149/6 152/23 <b>MS BLACKWELL:</b> <b>[10]</b> 69/22 70/1 78/12 84/17 85/22 96/25 97/7 106/8 106/15 106/17 <b>MS MITCHELL: [2]</b> 27/14 32/2 <b>MS MUNROE: [7]</b> 22/18 27/9 65/19 69/13 97/8 97/10 106/3 <b>THE WITNESS: [5]</b> 32/6 69/18 106/10 106/13 153/4	<b>2</b> <b>2.00 pm [1]</b> 106/22 <b>20 [1]</b> 124/24 <b>20 years [1]</b> 135/7 <b>200 [1]</b> 33/19 <b>2000s [1]</b> 134/4 <b>2001 [1]</b> 139/22 <b>2003 [1]</b> 129/2 <b>2003/4 [1]</b> 132/10 <b>2004 [2]</b> 46/10 79/1 <b>2005 [2]</b> 125/20 127/9 <b>2009 [3]</b> 41/20 42/13 59/25 <b>2009/2010 [1]</b> 132/13 <b>201 [1]</b> 42/20 <b>2010 [2]</b> 85/25 132/13 <b>2011 [6]</b> 7/2 8/13 73/24 74/7 132/3 132/16 <b>2012 [5]</b> 49/18 80/2 81/18 81/23 82/11 <b>2012 Act [1]</b> 80/10 <b>2012/13 [1]</b> 87/2 <b>2013 [4]</b> 35/18 40/5 52/7 52/9 <b>2015 [5]</b> 2/7 53/2 115/6 119/6 129/21	<b>3</b> <b>3.12 pm [1]</b> 153/8 <b>33 [1]</b> 53/4 <b>350 [2]</b> 36/16 36/19 <b>4</b> <b>4,000 [2]</b> 71/18 102/3 <b>400 [1]</b> 107/23 <b>41 [1]</b> 68/9 <b>42 [1]</b> 68/9 <b>43 [1]</b> 68/9 <b>46 [1]</b> 65/24 <b>5</b> <b>5 April 2020 [1]</b> 2/7 <b>5 July 2023 [1]</b> 1/1 <b>5 million [1]</b> 141/11 <b>5 pm [1]</b> 56/11 <b>5.4 million [1]</b> 24/17 <b>50 years [1]</b> 72/9 <b>50,000 [1]</b> 97/21 <b>6</b> <b>6 July 2023 [1]</b> 153/10 <b>60 [1]</b> 21/21	<b>1</b> <b>1 billion [1]</b> 53/5 <b>1.55 [1]</b> 106/16 <b>1.55 pm [1]</b> 106/20 <b>10 [1]</b> 66/3 <b>10 am [1]</b> 153/9 <b>10 o'clock [1]</b> 153/7 <b>10.00 am [1]</b> 1/2 <b>100 [1]</b> 53/23 <b>100 days [2]</b> 146/14 146/19 <b>11.15 [1]</b> 49/10 <b>11.15 am [1]</b> 49/14 <b>11.30 [1]</b> 49/13	
<b>'</b> <b>'My [1]</b> 24/25 <b>-</b> <b>- ...haemorrhagic [1]</b> 119/21 <b>.</b> <b>...haemorrhagic [1]</b> 119/21				



<b>A</b>	8/22 8/24 9/1 12/1 71/8 135/7 152/18 <b>advisers [3]</b> 9/3 10/19 10/21 <b>advising [2]</b> 35/1 139/22 <b>advisory [11]</b> 3/22 4/2 8/16 11/11 12/2 12/7 15/3 15/7 108/11 151/24 152/7 <b>advocacy [2]</b> 72/23 73/15 <b>advocating [1]</b> 72/25 <b>affairs [1]</b> 25/3 <b>affect [1]</b> 130/22 <b>affected [6]</b> 5/22 24/1 89/19 113/1 113/4 128/3 <b>affirmed [4]</b> 69/24 107/1 154/14 154/19 <b>afraid [6]</b> 23/8 25/10 32/1 39/4 40/12 84/2 <b>Africa [6]</b> 110/8 112/20 112/22 112/23 113/1 113/2 <b>African [1]</b> 98/6 <b>after [10]</b> 5/9 7/6 28/12 31/20 50/7 127/9 142/9 146/19 146/22 151/8 <b>aftermath [1]</b> 132/10 <b>afternoon [1]</b> 97/10 <b>afternoon's [1]</b> 106/23 <b>afterwards [2]</b> 74/5 74/6 <b>again [23]</b> 6/11 20/25 26/22 37/15 53/24 63/5 68/7 76/11 76/12 79/18 96/18 101/22 104/18 106/4 110/9 123/14 124/5 133/22 134/15 135/11 137/13 138/11 143/23 <b>against [6]</b> 17/18 19/3 22/5 90/7 116/16 152/14 <b>age [1]</b> 72/9 <b>ageing [1]</b> 112/2 <b>agencies [9]</b> 40/8 40/21 41/5 42/8 46/19 58/15 62/25 108/1 135/8 <b>agency [8]</b> 38/4 40/23 41/20 42/6 42/14 44/15 125/19 125/23 <b>agent [4]</b> 111/20 114/3 122/11 123/5 <b>agents [2]</b> 123/10 124/6 <b>ago [4]</b> 46/21 66/3 80/12 134/21 <b>agree [13]</b> 23/21	26/23 48/4 63/12 65/12 76/10 89/17 91/11 98/23 101/7 110/24 131/24 145/2 <b>agreed [1]</b> 12/16 <b>agreeing [1]</b> 73/23 <b>agreements [4]</b> 51/12 51/13 51/16 100/12 <b>agrees [1]</b> 97/4 <b>Agriculture [1]</b> 140/3 <b>Ah [2]</b> 36/21 49/11 <b>ahead [2]</b> 140/11 140/14 <b>AIDS [1]</b> 117/24 <b>aim [4]</b> 26/17 72/10 116/2 117/17 <b>aims [1]</b> 119/3 <b>alcohol [2]</b> 35/4 38/13 <b>alcohol-related [1]</b> 38/13 <b>alerted [1]</b> 30/16 <b>Alice [1]</b> 130/1 <b>align [1]</b> 46/11 <b>all [80]</b> 2/15 3/6 3/21 5/4 5/22 6/8 6/25 8/4 11/19 13/18 16/24 17/1 17/5 18/1 19/10 19/17 21/22 21/25 22/1 23/21 30/14 30/14 33/23 34/5 38/10 38/16 38/17 39/11 42/18 48/5 49/9 50/13 52/14 53/20 54/13 55/11 62/4 65/12 66/7 66/19 72/5 79/24 82/22 83/4 83/8 84/9 85/10 85/20 87/22 88/1 88/25 91/1 91/18 92/1 93/16 99/22 110/19 112/12 113/12 118/10 118/11 118/24 122/3 125/10 126/21 130/3 130/12 132/20 135/21 140/13 140/24 141/22 142/22 142/22 143/1 143/5 143/7 145/22 147/3 148/21 <b>all right [24]</b> 3/6 11/19 13/18 17/5 21/25 22/1 33/23 34/5 38/10 42/18 48/5 49/9 50/13 52/14 53/20 55/11 62/4 72/5 79/24 85/20 87/22 88/1 91/1 118/24 <b>alleged [1]</b> 140/3 <b>Allison [3]</b> 22/22 65/21 97/11 <b>Allison Munroe [3]</b> 22/22 65/21 97/11 <b>allow [11]</b> 1/21 99/1	99/3 99/13 100/12 103/21 104/13 104/15 131/4 137/5 141/15 <b>allowed [2]</b> 79/17 141/19 <b>alluded [1]</b> 18/12 <b>almost [3]</b> 3/12 24/13 143/22 <b>along [2]</b> 18/1 63/10 <b>alongside [1]</b> 4/8 <b>alphabetically [1]</b> 119/2 <b>already [28]</b> 5/25 8/18 15/11 15/17 15/18 15/20 21/25 22/2 22/8 23/3 26/9 30/15 54/12 60/4 63/21 64/21 65/2 70/6 74/1 82/18 92/10 93/14 97/13 112/8 117/22 118/18 149/3 150/24 <b>also [78]</b> 1/14 1/25 2/1 2/4 3/17 3/18 3/23 3/25 4/3 4/12 4/20 5/20 6/9 10/21 11/3 14/12 14/15 14/21 15/15 16/18 17/20 20/5 22/1 22/12 24/1 24/19 32/23 34/19 35/6 35/9 36/5 42/2 42/25 43/12 46/16 48/22 50/8 50/14 50/25 60/2 62/14 63/8 66/2 71/2 72/17 74/24 75/2 76/19 77/21 78/13 79/11 81/1 82/10 84/24 89/1 99/9 100/15 100/22 102/18 102/23 108/11 108/14 111/19 112/23 114/14 115/20 121/10 124/4 124/6 127/11 130/20 131/4 132/2 134/3 134/10 142/10 148/12 152/1 <b>although [5]</b> 11/11 81/7 116/15 121/10 137/15 <b>always [12]</b> 3/12 20/12 30/12 46/11 46/12 47/13 51/11 62/19 67/16 122/5 133/24 134/12 <b>am [12]</b> 1/2 8/5 43/8 49/14 49/16 65/13 67/9 136/7 136/20 148/18 149/14 153/9 <b>amazing [2]</b> 56/17 100/5 <b>ambition [1]</b> 146/13 <b>ambitious [2]</b> 146/12 146/13 <b>among [2]</b> 60/15	62/25 <b>amongst [1]</b> 67/24 <b>amount [1]</b> 133/25 <b>analogous [2]</b> 4/23 41/21 <b>analogy [3]</b> 124/8 124/9 125/1 <b>analysed [1]</b> 133/15 <b>analysis [10]</b> 23/1 25/25 26/13 26/16 26/19 53/15 76/2 76/8 141/8 151/1 <b>analysts [1]</b> 26/14 <b>Ananta [1]</b> 104/21 <b>ancillary [1]</b> 39/12 <b>Andrew [4]</b> 10/16 12/1 12/3 12/6 <b>Andrew Morris [1]</b> 12/6 <b>animal [1]</b> 116/17 <b>annual [3]</b> 117/14 119/4 119/19 <b>anonymised [1]</b> 137/24 <b>anonymously [1]</b> 141/11 <b>another [14]</b> 16/9 19/3 26/8 48/6 56/13 66/12 66/25 77/6 80/9 82/20 112/1 127/3 147/23 147/24 <b>answer [7]</b> 20/21 30/4 54/23 61/2 97/14 127/22 134/25 <b>answered [3]</b> 51/2 99/16 106/4 <b>answering [2]</b> 61/24 67/9 <b>answers [1]</b> 25/16 <b>antenatal [1]</b> 4/10 <b>anticipate [1]</b> 61/25 <b>anticipated [1]</b> 89/18 <b>anticipation [1]</b> 106/4 <b>antimicrobial [1]</b> 107/25 <b>antiviral [2]</b> 118/4 119/9 <b>antivirals [4]</b> 31/2 77/14 118/3 118/20 <b>anxious [1]</b> 20/16 <b>any [35]</b> 5/24 7/11 8/10 8/14 13/4 15/8 21/18 25/18 28/18 28/22 29/22 45/10 62/3 63/3 67/12 68/10 70/16 71/21 74/20 75/7 75/12 75/12 76/7 86/1 86/23 103/5 111/2 111/19 112/18 113/9 113/18 116/15 121/13 127/4 147/25 <b>anybody [1]</b> 44/17 <b>anymore [1]</b> 87/16
----------	--	--	--	---

<b>A</b>	57/15 57/19 60/24 72/11 83/9 84/12 84/14 87/7 108/25 109/22 145/9 145/11 151/8 <b>argue [1]</b> 124/6 <b>argument [1]</b> 45/23 <b>arise [3]</b> 43/15 101/17 123/16 <b>arisen [1]</b> 151/17 <b>arises [1]</b> 110/20 <b>arising [1]</b> 39/13 <b>arm's [1]</b> 38/6 <b>armed [2]</b> 79/13 105/18 <b>arose [1]</b> 6/11 <b>around [14]</b> 4/24 35/17 36/16 58/14 71/18 76/25 77/20 94/5 104/25 111/22 118/6 119/6 129/4 140/18 <b>arranged [1]</b> 58/25 <b>arrangements [3]</b> 62/16 62/21 140/13 <b>arrived [4]</b> 135/13 140/7 151/8 151/11 <b>arthropods [1]</b> 114/10 <b>article [1]</b> 125/17 <b>articulate [1]</b> 72/11 <b>as [191]</b> <b>as pandemic [1]</b> 25/6 <b>aside [1]</b> 136/16 <b>ask [19]</b> 1/12 5/24 7/7 7/18 15/1 22/11 22/23 28/4 29/8 30/21 65/16 65/21 95/14 97/11 99/16 114/23 148/25 149/10 152/19 <b>asked [9]</b> 12/6 43/8 75/25 84/16 89/6 111/16 125/7 151/14 152/22 <b>asking [4]</b> 27/17 64/7 93/18 149/8 <b>aspect [2]</b> 17/11 88/23 <b>aspects [7]</b> 3/21 38/15 54/19 84/25 109/2 132/17 138/6 <b>assess [1]</b> 73/14 <b>assessed [1]</b> 63/17 <b>assessing [1]</b> 34/25 <b>assessment [17]</b> 12/20 12/22 12/25 13/2 13/3 13/12 64/3 75/10 75/18 76/12 90/3 131/6 131/8 132/1 132/7 136/1 136/9 <b>assessments [2]</b> 130/25 136/8 <b>asset [3]</b> 96/3 96/4	96/4 <b>assets [4]</b> 43/21 52/4 92/8 96/21 <b>assigned [1]</b> 138/3 <b>assimilation [1]</b> 15/13 <b>assist [6]</b> 23/17 43/10 50/9 66/7 93/7 138/25 <b>assistance [7]</b> 1/11 32/19 55/2 55/5 70/5 86/25 107/6 <b>assistants [1]</b> 5/3 <b>assisted [1]</b> 54/21 <b>assists [1]</b> 63/24 <b>associate [2]</b> 33/14 33/20 <b>associated [2]</b> 113/8 130/7 <b>association [5]</b> 32/20 33/10 33/24 66/14 104/23 <b>assume [1]</b> 125/6 <b>assumed [1]</b> 131/13 <b>assumptions [1]</b> 64/3 <b>assurance [6]</b> 35/7 80/4 80/25 81/1 81/7 81/9 <b>assure [3]</b> 35/8 86/14 90/15 <b>assured [1]</b> 35/8 <b>asymptomatic [1]</b> 133/12 <b>at [142]</b> 5/1 5/2 6/17 8/4 8/18 12/5 12/11 12/21 13/22 13/25 14/23 16/7 16/11 16/22 17/14 19/8 19/11 19/16 19/16 19/17 20/7 21/6 21/22 22/20 23/12 23/18 23/24 24/8 24/15 24/19 25/10 25/13 25/13 27/6 28/25 29/8 30/11 30/25 39/5 40/22 42/20 42/24 43/7 43/18 49/13 50/17 53/23 54/14 54/23 55/4 56/10 59/7 61/18 61/22 62/2 62/18 63/18 64/2 64/16 65/7 65/23 68/21 69/3 70/7 70/16 72/17 72/24 74/11 74/11 74/14 75/7 75/11 75/13 77/21 77/25 78/7 78/9 78/9 79/14 83/1 83/24 87/8 87/8 87/8 87/12 88/12 90/10 91/8 92/1 93/15 96/2 96/8 96/18 96/23 97/17 100/5 100/14 100/22 103/3 104/20	105/21 107/9 107/19 111/1 111/12 117/3 117/11 118/2 118/25 121/1 121/9 121/11 122/15 123/23 124/16 125/2 125/7 125/7 125/9 125/13 125/17 128/7 129/7 130/15 130/20 131/8 132/2 132/21 132/22 132/23 134/9 134/13 136/15 138/20 140/1 141/23 144/5 144/20 148/6 148/14 151/8 151/11 <b>attached [2]</b> 37/22 38/7 <b>attaching [1]</b> 121/20 <b>attempt [1]</b> 84/21 <b>attend [4]</b> 28/10 28/20 45/7 108/7 <b>attended [3]</b> 9/15 10/1 10/2 <b>attending [2]</b> 30/6 68/11 <b>attention [6]</b> 25/4 117/25 123/15 123/24 134/17 146/8 <b>august [1]</b> 120/6 <b>austerity [1]</b> 54/17 <b>author [1]</b> 108/15 <b>authorities [27]</b> 6/20 6/23 34/23 34/24 35/15 35/17 35/19 37/2 37/10 37/17 41/25 48/10 51/5 51/9 51/20 51/21 51/24 52/16 52/19 52/25 55/20 57/23 62/17 62/22 87/9 99/18 99/19 <b>authority [15]</b> 6/15 33/25 34/18 35/1 35/14 36/18 36/19 37/22 40/1 40/3 45/24 50/4 56/22 71/9 87/6 <b>automatically [1]</b> 93/25 <b>autonomy [3]</b> 151/20 152/2 152/13 <b>available [4]</b> 4/20 75/2 90/19 116/16 <b>avoid [1]</b> 57/19 <b>aware [20]</b> 7/3 8/3 8/5 9/6 13/3 20/18 31/4 31/6 62/19 62/23 75/9 122/5 122/11 131/25 131/25 132/4 132/5 135/25 136/20 146/12 <b>awareness [5]</b> 69/7 76/24 78/14 105/4 113/23 <b>away [1]</b> 14/5 <b>awful [4]</b> 124/19	135/14 135/15 135/20 <b>Aziz [3]</b> 24/8 24/12 141/23
<b>B</b>				
			<b>babies [1]</b> 19/18 <b>back [17]</b> 12/5 15/17 15/20 18/22 20/25 21/16 21/19 28/13 41/14 49/13 52/3 66/20 68/20 82/2 126/2 135/7 141/16 <b>background [2]</b> 102/17 115/23 <b>backgrounds [1]</b> 91/9 <b>backing [1]</b> 150/16 <b>backwards [1]</b> 15/22 <b>balance [3]</b> 139/7 139/8 139/14 <b>ball [1]</b> 110/23 <b>Bambra [1]</b> 75/25 <b>BAME [2]</b> 101/20 105/1 <b>Bangladeshi [1]</b> 98/6 <b>banks [1]</b> 54/25 <b>barriers [1]</b> 140/9 <b>base [3]</b> 15/3 15/7 17/5 <b>based [3]</b> 9/13 29/15 72/15 <b>basic [2]</b> 23/15 126/15 <b>basically [1]</b> 129/5 <b>basis [6]</b> 5/19 24/14 41/6 42/11 103/19 105/14 <b>be [225]</b> <b>bear [4]</b> 41/7 61/21 95/3 145/15 <b>bearing [2]</b> 66/6 87/7 <b>became [11]</b> 5/8 9/12 58/9 58/19 71/2 80/2 89/11 116/1 135/10 139/17 140/9 <b>because [64]</b> 2/17 5/24 9/12 14/4 16/2 17/9 20/1 20/6 21/5 21/25 33/3 36/8 36/22 38/17 41/7 43/15 44/21 47/1 47/17 49/7 49/20 51/7 57/11 59/18 61/9 64/8 67/4 74/20 78/1 81/2 81/11 82/24 83/3 83/8 83/9 84/7 84/13 84/15 86/3 87/1 94/5 99/23 101/9 102/8 105/4 105/13 108/15 110/17 113/19 113/25 114/18 117/15 120/7 128/23 129/14 129/16 135/3 138/5 138/20 140/1 140/3 140/13 142/2 146/19	

<b>B</b>	138/20 138/21 146/15	98/6 104/22	152/13	70/8 70/13 70/15 77/2
<b>become [9]</b> 20/6	<b>belief [1]</b> 70/10	<b>Blackwell [2]</b> 69/20	<b>British [1]</b> 104/23	82/16 82/21 83/23
33/14 38/16 51/13	<b>believe [14]</b> 14/10	97/14	<b>broad [10]</b> 3/7 12/15	84/7 84/7 84/21 85/9
63/14 72/16 84/11	31/20 31/20 46/17	<b>blind [1]</b> 23/13	14/8 16/12 33/23	85/13 89/17 89/23
117/6 137/21	59/25 64/14 74/6	<b>block [2]</b> 52/24	40/25 54/21 116/8	90/8 90/23 91/14
<b>becomes [1]</b> 68/22	87/16 93/1 100/5	101/24	116/20 130/2	95/12 95/12 99/1
<b>been [101]</b> 6/20 7/24	100/9 112/7 113/5	<b>blocks [1]</b> 100/9	<b>broadly [1]</b> 47/11	103/20 103/22 103/24
8/8 8/24 9/6 11/6 12/4	121/16	<b>blood [1]</b> 44/20	<b>brother [1]</b> 42/7	103/24 104/5 105/16
12/12 13/3 13/5 13/14	<b>believed [1]</b> 17/17	<b>blood-borne [1]</b>	<b>brought [9]</b> 52/3	113/14 118/3 118/25
16/3 17/7 17/13 17/18	<b>believes [1]</b> 98/9	44/20	66/15 79/1 80/1 80/2	119/3 119/17 120/12
24/22 25/17 26/22	<b>bell [1]</b> 49/11	<b>blown [1]</b> 130/16	95/3 124/12 128/3	124/8 127/23 135/3
27/15 28/17 29/12	<b>benefit [3]</b> 13/12	<b>blue [1]</b> 123/4	150/9	136/11 150/19
30/2 31/25 31/25 33/1	136/17 136/19	<b>blueprint [2]</b> 117/8	<b>BSE [1]</b> 147/21	<b>can't [7]</b> 22/20 29/4
35/17 39/5 51/11	<b>benefits [2]</b> 16/21	119/6	<b>budget [4]</b> 4/17 52/15	40/11 103/10 127/22
51/12 52/9 53/13	136/15	<b>Blueprint's [1]</b>	53/4 124/10	129/6 152/18
54/16 54/18 56/17	<b>benefitted [1]</b> 15/4	121/14	<b>budgetary [1]</b> 127/20	<b>candidates [1]</b>
56/17 59/10 59/21	<b>bereaved [9]</b> 1/24	<b>board [3]</b> 37/6 75/6	<b>budgets [2]</b> 50/15	147/16
60/20 61/21 62/7	22/11 22/13 22/23	104/22	65/1	<b>cannot [2]</b> 118/7
67/23 75/15 78/21	65/22 97/2 97/12	<b>boards [11]</b> 6/8 6/11	<b>build [2]</b> 77/9 83/25	141/15
80/10 83/3 83/9 83/23	148/25 149/9	14/11 14/13 37/3 37/4	<b>building [3]</b> 94/5	<b>capabilities [10]</b> 18/6
85/11 87/14 87/23	<b>best [6]</b> 39/16 57/3	37/7 37/15 37/16 42/3	100/9 116/3	18/20 19/2 56/7 56/8
87/23 91/14 93/25	70/9 74/25 86/15	42/15	<b>built [2]</b> 21/8 136/8	56/23 57/21 60/4
95/24 95/25 99/7	133/25	<b>bodies [9]</b> 6/16 11/9	<b>bullet [1]</b> 30/25	62/11 129/22
101/24 105/3 105/4	<b>bet [4]</b> 124/10 124/24	11/10 11/14 42/24	<b>bulletin [1]</b> 56/12	<b>capability [1]</b> 18/24
105/12 106/11 110/5	125/10 125/12	55/15 55/17 65/25	<b>bundle [1]</b> 52/1	<b>capable [1]</b> 59/15
111/3 111/6 116/4	<b>bets [2]</b> 125/11	108/23	<b>burden [2]</b> 60/7	<b>capacity [26]</b> 19/17
117/24 118/14 123/9	150/14	<b>body [16]</b> 4/24 8/21	61/21	20/3 21/8 22/2 60/9
123/22 127/20 128/24	<b>better [26]</b> 15/14	9/2 33/4 33/5 38/6	<b>burn [1]</b> 126/9	64/23 73/13 77/13
129/4 130/20 133/2	18/8 24/6 47/7 49/6	42/12 44/10 46/22	<b>burn-out [1]</b> 126/9	81/1 81/5 81/11 82/9
135/10 135/14 135/20	54/17 54/18 54/19	71/16 120/6 144/14	<b>but [185]</b>	87/4 94/4 95/19
136/3 136/22 136/23	58/10 60/21 61/7	144/19 144/23 149/2		100/11 111/18 111/18
139/14 140/6 140/10	64/23 65/3 65/10	151/22	<b>C</b>	116/4 126/3 126/6
140/11 140/12 140/14	67/16 74/11 91/24	<b>boiling [1]</b> 144/24	<b>Calderwood [24]</b> 1/5	127/5 127/11 127/14
141/17 143/10 143/11	94/21 99/1 99/14	<b>book [1]</b> 108/15	1/6 1/10 1/11 2/6 7/19	127/18 129/23
143/24 143/25 144/25	100/10 100/25 103/22	<b>borne [6]</b> 44/20	16/12 20/15 21/15	<b>capita [1]</b> 53/18
145/16 146/8 146/10	111/15 115/18 115/21	114/8 114/9 114/11	22/19 22/25 23/6 25/7	<b>capture [4]</b> 90/21
150/13 150/15 150/16	<b>between [31]</b> 2/7	135/18 135/19	26/18 27/9 27/18	98/16 98/22 101/4
151/24 152/6 153/2	5/22 26/13 31/15	<b>boroughs [1]</b> 35/19	27/20 31/12 32/4	<b>capturing [2]</b> 99/21
<b>before [17]</b> 1/19 5/20	39/21 42/14 45/22	<b>both [23]</b> 1/24 10/17	108/9 137/3 138/25	99/23
11/8 21/12 25/9 52/9	48/16 53/3 58/3 59/3	17/19 23/14 47/11	144/18 154/2	<b>cardiology [1]</b> 85/7
52/13 62/12 74/4	62/16 62/21 64/18	73/8 73/12 74/8 74/23	<b>call [9]</b> 38/6 45/11	<b>care [41]</b> 2/16 2/18
86/17 90/19 90/20	65/25 66/4 66/9 67/11	76/15 81/20 87/19	45/13 45/18 69/22	3/19 7/22 10/22 11/3
122/20 123/23 139/9	67/20 74/17 86/3	88/19 92/11 92/19	84/14 88/18 128/6	16/18 17/25 23/17
143/22 143/23	86/22 94/17 100/4	93/21 96/16 102/5	145/5	38/4 42/1 47/20 48/9
<b>beg [1]</b> 142/22	108/23 110/7 111/17	102/10 105/19 105/24	<b>called [6]</b> 46/16	48/11 48/12 48/15
<b>began [3]</b> 104/19	119/7 129/21 139/7	110/21 129/16	115/3 115/25 121/4	48/23 48/24 48/25
142/10 146/23	151/6	<b>bottom [3]</b> 119/2	130/2 138/25	49/1 49/2 49/18 55/7
<b>begin [2]</b> 1/19 96/20	<b>bewilderingly [1]</b>	121/11 126/14	<b>called High [1]</b> 115/3	55/9 62/18 71/4 79/4
<b>beginning [4]</b> 23/24	68/20	<b>boundaries [1]</b> 47/19	<b>calling [2]</b> 69/20 99/7	80/1 80/7 81/16 87/20
60/10 121/1 134/9	<b>beyond [13]</b> 10/18	<b>brand [1]</b> 118/4	<b>calls [3]</b> 9/11 45/3	89/6 93/2 98/13 100/2
<b>behalf [6]</b> 22/23	19/16 63/15 78/3 78/6	<b>break [6]</b> 49/12 49/15	45/5	100/3 100/17 104/22
65/21 72/25 97/11	79/20 90/2 101/19	70/16 106/15 139/3	<b>came [9]</b> 5/6 7/6	105/2 144/17 146/6
97/25 149/8	102/22 103/11 117/23	140/23	13/23 14/7 14/18	<b>care homes [7]</b>
<b>being [36]</b> 8/15 9/20	130/21 151/10	<b>bridge [1]</b> 150/17	24/11 50/24 57/9	16/18 42/1 48/15
9/21 9/22 16/23 17/3	<b>big [2]</b> 16/8 124/1	<b>briefing [1]</b> 28/19	59/13	48/25 49/2 55/9 105/2
17/13 17/24 19/22	<b>biggest [2]</b> 98/17	<b>briefly [1]</b> 144/12	<b>campaigns [2]</b> 39/13	<b>Caribbean [1]</b> 98/7
22/6 26/3 28/22 30/16	111/21	<b>bring [12]</b> 7/12 24/21	42/3	<b>Caroline [1]</b> 144/16
66/1 74/12 77/8 80/5	<b>billion [1]</b> 53/5	26/10 27/20 80/17	<b>can [59]</b> 17/21 18/8	<b>Caroline Lamb [1]</b>
84/5 88/8 91/16 95/11	<b>birthday [1]</b> 2/1	97/23 99/21 128/10	18/9 18/11 19/11	144/16
95/16 101/12 103/3	<b>bit [5]</b> 50/11 110/19	128/25 129/12 129/18	22/19 22/20 22/21	<b>carried [3]</b> 3/10
121/24 123/24 124/5	122/25 127/23 128/20	152/4	27/18 27/19 28/25	114/10 116/4
126/25 130/5 132/1	<b>biting [1]</b> 114/10	<b>bringing [3]</b> 62/8	33/14 33/21 36/24	<b>carries [1]</b> 89/13
132/5 136/7 136/20	<b>bits [1]</b> 60/12	92/19 94/11	39/1 43/3 48/3 62/12	<b>carry [2]</b> 3/10 137/6
	<b>black [4]</b> 61/16 98/6	<b>brings [2]</b> 64/25	62/13 67/7 67/16 70/7	<b>carrying [1]</b> 141/12

<b>C</b>	<b>changed [1]</b> 81/1	4/7 4/14 5/5 17/6 17/7	<b>collecting [1]</b> 100/17	<b>communicating [3]</b>
<b>case [11]</b> 41/5 44/15	<b>changes [4]</b> 15/20	19/5 24/13 78/7 86/5	<b>collection [9]</b> 15/24	55/22 68/19 92/17
62/8 62/20 63/8 66/9	80/1 80/6 80/11	88/22 145/7	22/25 23/4 25/24	<b>communication [18]</b>
98/14 132/20 137/10	<b>channels [2]</b> 90/11	<b>clinicians [2]</b> 19/10	26/13 26/19 103/12	9/12 9/18 31/9 56/10
138/19 148/13	92/18	50/20	136/25 143/15	56/20 57/2 58/19 59/6
<b>cases [3]</b> 129/10	<b>characterise [2]</b>	<b>close [5]</b> 4/16 17/2	<b>colleges [1]</b> 72/6	59/23 67/18 67/20
129/11 129/11	90/21 105/22	30/19 81/24 130/8	<b>column [1]</b> 126/4	68/23 68/25 73/19
<b>cast [1]</b> 68/20	<b>characteristics [8]</b>	<b>closely [3]</b> 6/22	<b>combating [1]</b>	74/1 90/11 90/16
<b>casualties [2]</b> 131/14	76/16 99/10 100/20	58/11 82/6	101/25	94/17
131/15	100/21 104/8 122/23	<b>closer [1]</b> 95/10	<b>combination [2]</b>	<b>communications [6]</b>
<b>categories [4]</b> 53/25	122/24 127/13	<b>closure [2]</b> 55/3 55/4	88/17 105/2	57/4 58/3 66/4 66/9
116/8 131/10 147/17	<b>charge [4]</b> 44/11 45/8	<b>clout [1]</b> 144/23	<b>combine [3]</b> 103/22	67/15 67/24
<b>category [15]</b> 44/6	60/7 65/7	<b>club [1]</b> 57/17	112/15 112/16	<b>communities [27]</b>
44/6 44/7 45/10 109/4	<b>charged [1]</b> 93/5	<b>CMO [24]</b> 4/12 4/17	<b>combined [1]</b> 121/7	51/1 56/16 57/15 90/5
109/6 109/8 109/9	<b>charity [1]</b> 72/5	5/9 5/9 6/6 7/4 7/10	<b>come [11]</b> 11/19	90/5 90/9 90/13 90/17
115/14 115/16 116/11	<b>chief [36]</b> 2/6 2/10	7/11 8/10 11/15 12/25	21/24 28/13 35/23	91/22 92/7 92/17
116/18 121/8 121/9	3/8 4/8 4/16 4/23 4/24	13/6 13/13 13/15	41/14 45/18 54/20	92/19 92/20 92/23
131/21	5/2 5/15 6/4 8/22 8/23	20/15 24/25 26/25	61/13 92/24 121/23	92/25 94/11 98/4 98/5
<b>Category 1 [3]</b> 44/6	9/1 9/1 10/13 10/24	28/10 28/16 59/2 59/3	134/1	101/15 102/18 102/24
44/7 45/10	10/25 11/1 11/4 12/1	102/6 112/7 115/24	<b>comes [7]</b> 29/3 46/25	104/11 105/23 105/25
<b>Category 2 [1]</b> 44/6	12/4 12/4 18/14 26/15	<b>CMO Scotland [1]</b>	62/22 64/11 65/8	118/1 133/24 147/5
<b>Catherine [5]</b> 1/5 1/6	27/6 35/13 36/19	24/25	118/6 130/24	<b>communities' [2]</b>
1/10 137/3 154/2	36/23 40/4 58/10	<b>CMOs [6]</b> 5/24 30/20	<b>coming [6]</b> 19/18	94/10 102/19
<b>causative [2]</b> 110/22	69/12 104/21 137/2	31/17 55/18 59/8 66/5	46/16 70/4 82/2 89/12	<b>community [20]</b> 26/5
123/5	139/21 144/11 144/18	<b>co [15]</b> 15/14 15/25	95/17	34/19 73/10 81/14
<b>cause [3]</b> 116/10	<b>Chief Scientist [2]</b>	16/4 43/1 44/7 45/8	<b>CoMix [2]</b> 143/7	88/2 90/14 95/10
129/5 143/19	4/16 27/6	46/24 54/10 87/4	143/7	104/9 109/25 110/25
<b>caused [2]</b> 122/10	<b>Chief Statistician [1]</b>	89/25 90/3 92/6 92/20	<b>commence [1]</b> 40/22	110/25 122/16 122/17
148/22	26/15	94/13 149/25	<b>comment [3]</b> 13/16	128/17 130/22 131/5
<b>caveat [1]</b> 113/24	<b>children [3]</b> 60/16	<b>co-chair [1]</b> 46/24	76/1 103/10	131/25 133/7 145/14
<b>celebrate [1]</b> 145/22	60/19 77/13	<b>co-operation [1]</b>	<b>commented [1]</b>	145/14
<b>central [9]</b> 55/13	<b>China [1]</b> 129/7	15/14	74/16	<b>comorbidities [1]</b>
55/15 55/18 55/23	<b>chorus [1]</b> 144/3	<b>co-ordinate [1]</b>	<b>comments [3]</b> 74/2	113/19
56/25 58/4 58/22 73/5	<b>Chris [5]</b> 23/5 59/1	149/25	75/5 75/12	<b>comparable [2]</b> 42/7
108/2	59/6 66/5 89/5	<b>co-ordinating [4]</b>	<b>commissioned [1]</b>	111/2
<b>centre [3]</b> 57/16	<b>Chris Whitty [1]</b> 59/1	43/1 44/7 45/8 54/10	60/13	<b>compare [1]</b> 67/3
61/22 150/25	<b>circles [1]</b> 136/24	<b>co-ordination [2]</b>	<b>commissioners [2]</b>	<b>compares [1]</b> 109/25
<b>certain [4]</b> 85/5 89/19	<b>cities [1]</b> 111/23	15/25 87/4	48/22 50/9	<b>comparing [1]</b> 66/23
109/22 128/24	<b>citizens [1]</b> 151/4	<b>co-produced [1]</b> 92/6	<b>commissioning [4]</b>	<b>compelling [1]</b>
<b>certainly [12]</b> 1/22	<b>civil [13]</b> 3/18 8/7	90/3 92/20	35/2 35/3 38/21 102/7	138/19
16/2 20/7 29/6 50/2	11/9 13/5 29/19 31/21	<b>co-producing [2]</b>	<b>commissions [1]</b>	<b>competence [2]</b>
51/14 58/9 67/21	31/22 43/11 46/9	90/3 92/20	151/14	73/14 81/10
103/14 113/11 120/22	55/18 62/23 78/20	<b>co-production [2]</b>	<b>commitment [1]</b>	<b>competences [1]</b>
150/20	78/25	89/25 94/13	91/25	83/4
<b>chair [3]</b> 21/14 46/24	<b>CJD [1]</b> 123/4	<b>coalition [1]</b> 97/21	<b>committee [22]</b> 9/5	<b>competencies [3]</b>
154/5	<b>claim [1]</b> 145/19	<b>COBR [2]</b> 30/24	9/9 9/21 44/10 119/1	83/8 84/8 84/13
<b>chaired [2]</b> 8/23	<b>clarification [1]</b> 79/7	89/15	120/6 120/11 120/13	<b>competency [2]</b>
115/24	<b>clarified [3]</b> 49/6	<b>COG [1]</b> 143/5	120/19 121/5 122/8	72/15 85/5
<b>challenge [11]</b> 51/18	64/15 64/21	<b>COG-UK [1]</b> 143/5	123/17 124/12 144/14	<b>competent [2]</b> 28/17
56/9 56/13 60/6 60/8	<b>clarify [1]</b> 80/18	<b>colds [1]</b> 129/5	144/20 145/4 149/2	92/6
60/9 67/3 74/8 80/25	<b>clarity [1]</b> 80/7	<b>collaboration [7]</b>	149/11 149/14 149/15	<b>complacency [2]</b>
95/11 152/14	<b>clear [16]</b> 12/3 20/22	15/14 16/1 27/1 54/1	151/9 151/14	109/19 110/23
<b>challenged [1]</b> 12/17	23/24 36/3 41/18 46/8	103/25 151/5 151/6	<b>committee's [1]</b>	<b>complete [2]</b> 123/13
<b>challenges [9]</b> 49/23	56/4 76/14 82/21	<b>collaborative [1]</b>	151/13	144/5
52/2 52/4 67/7 77/3	94/17 110/14 115/10	68/1	<b>committees [2]</b> 11/5	<b>completed [2]</b> 71/23
81/10 100/21 103/17	115/14 116/21 128/7	<b>colleague [3]</b> 11/25	152/7	82/25
134/2	131/1	12/5 141/23	<b>common [2]</b> 67/7	<b>completely [6]</b> 87/23
<b>challenging [3]</b> 51/11	<b>clearer [3]</b> 52/5 58/19	<b>colleagues [11]</b> 2/3	114/14	123/3 123/8 123/8
51/12 101/25	85/20	10/12 18/1 84/10	<b>commonalities [1]</b>	139/9 148/15
<b>chance [4]</b> 13/25	<b>clearly [6]</b> 1/14 13/12	102/5 115/5 134/13	148/1	<b>complex [5]</b> 51/17
109/13 124/20 124/23	110/1 112/14 117/19	138/6 140/22 143/20	<b>communicate [1]</b>	66/14 68/21 78/16
<b>change [4]</b> 51/23	130/17	147/9	16/5	86/2
81/18 87/2 140/8	<b>clinic [1]</b> 4/11	<b>collect [2]</b> 103/19	<b>communicated [2]</b>	<b>complexities [3]</b> 39/1
	<b>clinical [13]</b> 3/15 4/4	104/13	33/1 66/12	46/13 50/24

C				
<p><b>complexity [5]</b> 26/25 46/15 46/25 50/23 67/17</p> <p><b>comprehensive [3]</b> 81/21 93/4 102/21</p> <p><b>comprises [1]</b> 46/18</p> <p><b>comprising [2]</b> 44/6 44/7</p> <p><b>concept [5]</b> 121/16 121/19 121/21 121/23 122/13</p> <p><b>concern [10]</b> 17/3 37/10 91/11 98/1 105/12 115/11 116/18 119/14 123/20 152/4</p> <p><b>concerned [14]</b> 4/6 14/19 22/5 34/2 38/13 38/17 55/7 116/3 129/21 132/17 138/15 144/21 147/18 148/19</p> <p><b>concerning [2]</b> 65/7 128/16</p> <p><b>concerns [5]</b> 28/18 39/9 75/5 76/10 80/3</p> <p><b>concludes [3]</b> 52/1 106/8 153/6</p> <p><b>conclusion [2]</b> 107/9 120/11</p> <p><b>concur [1]</b> 64/9</p> <p><b>condolences [1]</b> 1/24</p> <p><b>conducted [1]</b> 13/21</p> <p><b>conducting [1]</b> 130/14</p> <p><b>confident [1]</b> 148/18</p> <p><b>confidentiality [2]</b> 137/25 140/4</p> <p><b>confined [2]</b> 130/8 131/13</p> <p><b>confront [1]</b> 92/25</p> <p><b>confusing [1]</b> 36/25</p> <p><b>confusion [2]</b> 45/23 48/2</p> <p><b>Congo [1]</b> 119/22</p> <p><b>connect [1]</b> 86/13</p> <p><b>connected [1]</b> 137/15</p> <p><b>connection [1]</b> 86/3</p> <p><b>connectivity [1]</b> 86/22</p> <p><b>conscious [1]</b> 133/7</p> <p><b>consensus [1]</b> 39/20</p> <p><b>consequence [6]</b> 98/10 129/22 130/5 130/6 130/15 134/22</p> <p><b>consequences [2]</b> 25/4 138/22</p> <p><b>consider [1]</b> 98/11</p> <p><b>considerable [1]</b> 109/8</p> <p><b>consideration [6]</b> 20/16 75/12 76/3 89/8 131/21 136/5</p>	<p><b>considerations [1]</b> 88/7</p> <p><b>considered [2]</b> 26/20 151/1</p> <p><b>considering [1]</b> 77/5</p> <p><b>consistent [2]</b> 54/11 99/23</p> <p><b>constituent [2]</b> 53/11 66/21</p> <p><b>consultant [4]</b> 4/11 63/14 83/2 85/7</p> <p><b>consultants [6]</b> 33/13 33/14 36/6 63/7 63/10 72/20</p> <p><b>consultation [4]</b> 7/17 65/25 74/7 74/15</p> <p><b>consultations [2]</b> 74/10 151/9</p> <p><b>consulted [1]</b> 17/14</p> <p><b>contact [13]</b> 18/5 18/15 57/12 57/14 58/8 58/24 58/25 61/17 90/4 94/17 126/16 133/17 139/2</p> <p><b>contacts [2]</b> 129/12 130/8</p> <p><b>containable [1]</b> 131/3</p> <p><b>containing [2]</b> 115/16 131/4</p> <p><b>contaminated [1]</b> 43/16</p> <p><b>content [1]</b> 74/13</p> <p><b>context [11]</b> 23/2 27/24 45/3 54/3 54/4 98/12 114/20 116/6 127/24 137/14 137/19</p> <p><b>contingencies [6]</b> 11/9 29/20 46/10 62/24 78/21 79/1</p> <p><b>contingency [1]</b> 29/14</p> <p><b>contingent [1]</b> 19/7</p> <p><b>continue [6]</b> 4/6 17/22 17/25 83/24 96/14 141/19</p> <p><b>continued [5]</b> 4/10 14/4 15/13 96/16 128/5</p> <p><b>continues [1]</b> 17/10</p> <p><b>continuing [1]</b> 72/21</p> <p><b>continuous [1]</b> 63/16</p> <p><b>continuously [1]</b> 63/17</p> <p><b>contracts [2]</b> 36/10 51/15</p> <p><b>contradict [1]</b> 27/14</p> <p><b>contradiction [1]</b> 109/13</p> <p><b>contrast [2]</b> 121/1 131/12</p> <p><b>contribute [4]</b> 8/3 8/5 29/18 30/9</p> <p><b>contributed [1]</b> 7/19</p> <p><b>control [20]</b> 43/22</p>	<p>44/10 48/14 48/15 49/7 78/4 79/22 81/8 126/16 126/17 128/2 128/3 128/11 128/25 129/14 129/15 129/18 134/1 146/17 148/14</p> <p><b>controlling [1]</b> 126/18</p> <p><b>conundrum [1]</b> 20/16</p> <p><b>convene [3]</b> 45/14 45/15 45/19</p> <p><b>convened [3]</b> 8/21 8/22 8/24</p> <p><b>convenient [1]</b> 106/15</p> <p><b>conversations [1]</b> 26/23</p> <p><b>coped [1]</b> 125/24</p> <p><b>copied [2]</b> 13/14 31/25</p> <p><b>copy [1]</b> 40/14</p> <p><b>cordons [1]</b> 44/22</p> <p><b>core [6]</b> 32/22 81/9 83/19 99/5 101/7 113/8</p> <p><b>corner [1]</b> 126/14</p> <p><b>coronaviral [5]</b> 120/1 120/8 120/19 120/23 147/14</p> <p><b>Coronaviridae [1]</b> 116/11</p> <p><b>coronavirus [13]</b> 14/17 14/20 26/4 59/20 116/13 116/14 116/21 118/21 119/24 123/13 129/3 129/24 132/19</p> <p><b>coronaviruses [5]</b> 116/16 116/17 117/3 121/8 129/4</p> <p><b>correct [42]</b> 1/18 1/19 2/9 2/13 2/20 4/10 5/11 8/20 9/17 12/7 14/24 20/24 28/10 28/11 32/17 32/18 33/7 35/20 36/8 37/12 68/14 68/15 71/1 71/7 71/11 71/15 71/20 72/8 73/22 79/3 94/25 107/21 117/10 117/17 118/10 118/11 118/22 119/15 124/2 125/11 137/13 138/24</p> <p><b>correctly [3]</b> 14/11 37/7 135/2</p> <p><b>correspondence [4]</b> 24/24 137/2 138/14 139/1</p> <p><b>coterminous [2]</b> 47/2 47/13</p> <p><b>could [56]</b> 1/9 1/13 3/7 3/16 6/13 7/15 8/21 16/6 18/24 18/25 19/2 19/22 20/3 20/6</p>	<p>22/5 24/1 29/4 30/23 31/18 32/12 34/16 40/9 40/21 48/1 49/6 49/22 52/5 54/16 54/18 56/5 56/7 57/19 57/21 60/19 61/19 66/7 67/22 67/25 75/21 94/15 107/3 110/19 114/13 115/1 119/12 122/4 123/1 124/6 125/21 126/2 126/11 133/14 136/13 142/15 147/13 148/20</p> <p><b>couldn't [3]</b> 30/9 58/24 140/1</p> <p><b>council [5]</b> 3/4 11/11 39/15 66/18 66/20</p> <p><b>councils [5]</b> 34/23 35/18 35/19 36/23 36/24</p> <p><b>COUNSEL [10]</b> 1/8 32/11 65/16 69/25 97/15 107/2 154/3 154/10 154/15 154/20</p> <p><b>countermeasure [2]</b> 118/20 119/10</p> <p><b>countermeasures [5]</b> 57/10 127/16 133/14 133/16 136/12</p> <p><b>counterparts [1]</b> 59/4</p> <p><b>countries [17]</b> 5/22 15/16 16/1 16/3 16/5 18/12 74/17 74/24 109/17 112/3 112/20 113/3 126/13 128/3 128/24 129/1 129/6</p> <p><b>country [14]</b> 6/1 15/12 17/14 27/1 72/19 91/22 98/4 102/24 104/22 109/3 109/21 112/18 113/1 113/18</p> <p><b>county [2]</b> 34/23 35/18</p> <p><b>couple [1]</b> 134/20</p> <p><b>Coupled [1]</b> 129/14</p> <p><b>course [31]</b> 2/4 2/23 3/18 4/5 6/22 8/1 9/24 16/13 17/8 20/18 23/19 27/4 40/20 40/23 51/7 55/7 55/19 57/7 59/2 63/21 86/10 102/6 107/18 112/24 114/1 116/24 126/24 131/11 135/23 137/1 152/5</p> <p><b>coverage [1]</b> 88/11</p> <p><b>covered [1]</b> 117/22</p> <p><b>covering [1]</b> 47/4</p> <p><b>covers [2]</b> 47/14 115/16</p> <p><b>Covid [55]</b> 12/2 12/7 14/6 16/17 16/18 17/8</p>	<p>19/4 22/10 22/13 22/23 24/6 24/15 54/5 60/18 65/22 68/13 69/10 70/24 75/20 76/14 78/5 79/19 97/2 97/12 98/11 98/14 98/18 99/11 101/20 105/18 108/3 108/10 110/10 111/2 111/9 111/21 112/2 114/1 114/21 114/25 130/11 133/21 136/19 137/11 139/13 139/17 140/12 141/7 142/11 146/22 148/6 148/14 148/21 148/24 149/9</p> <p><b>Covid-19 [33]</b> 12/2 14/6 16/17 19/4 22/10 22/13 22/23 24/6 54/5 65/22 68/13 70/24 76/14 79/19 97/2 97/12 98/11 98/14 98/18 101/20 105/18 108/10 110/10 111/2 111/21 112/2 114/1 114/21 141/7 148/6 148/14 148/21 148/24</p> <p><b>Cow [4]</b> 123/5 135/19 147/21 147/24</p> <p><b>create [4]</b> 46/13 60/3 87/11 93/12</p> <p><b>creating [2]</b> 83/23 93/6</p> <p><b>creation [4]</b> 80/12 86/18 94/19 100/3</p> <p><b>crime [1]</b> 38/15</p> <p><b>Crimean [1]</b> 119/22</p> <p><b>Crimean-Congo [1]</b> 119/22</p> <p><b>criteria [2]</b> 110/13 112/4</p> <p><b>critical [7]</b> 12/13 72/23 75/4 80/20 94/10 96/5 102/10</p> <p><b>cross [2]</b> 65/3 136/8</p> <p><b>cross-government [2]</b> 65/3 136/8</p> <p><b>Crossman [4]</b> 10/15 26/9 26/12 26/24</p> <p><b>crucial [2]</b> 43/22 142/4</p> <p><b>crystallisation [1]</b> 52/10</p> <p><b>cultural [2]</b> 49/24 51/4</p> <p><b>culturally [3]</b> 51/20 92/6 101/4</p> <p><b>culture [3]</b> 46/5 60/20 68/19</p> <p><b>cultures [1]</b> 50/5</p> <p><b>currency [1]</b> 101/8</p> <p><b>current [4]</b> 12/4 12/17 78/17 136/8</p> <p><b>currently [6]</b> 47/18</p>

<b>C</b>	<b>data: Understanding [1]</b> 101/19 <b>dataset [1]</b> 104/14 <b>datasets [1]</b> 103/22 <b>date [2]</b> 3/15 7/12 <b>dated [2]</b> 107/7 125/19 <b>Dave [1]</b> 104/21 <b>David [2]</b> 10/15 139/21 <b>Davies [2]</b> 112/7 115/25 <b>day [9]</b> 2/1 13/20 19/9 19/9 19/12 19/12 19/18 20/9 153/1 <b>days [4]</b> 10/6 51/14 146/14 146/19 <b>deadly [1]</b> 148/12 <b>deal [17]</b> 8/17 8/24 18/9 19/8 19/12 19/13 20/16 39/11 42/25 64/8 123/16 127/11 127/11 127/18 129/22 140/15 145/1 <b>dealing [10]</b> 27/25 34/19 54/3 54/10 55/13 55/22 56/2 59/15 113/10 148/11 <b>deals [1]</b> 54/23 <b>dealt [2]</b> 13/9 14/20 <b>deaths [2]</b> 131/20 131/20 <b>debate [12]</b> 7/11 8/10 8/14 12/19 53/8 133/8 133/13 133/16 133/20 136/12 136/15 136/18 <b>debated [3]</b> 64/16 65/7 133/14 <b>debrief [1]</b> 28/13 <b>decades [1]</b> 145/20 <b>December [3]</b> 5/10 108/7 145/25 <b>December 2020 [1]</b> 5/10 <b>December 2021 [1]</b> 108/7 <b>December 8 [1]</b> 145/25 <b>decide [1]</b> 124/13 <b>deciding [1]</b> 124/10 <b>decision [4]</b> 23/11 23/25 121/14 138/9 <b>decision-making [2]</b> 23/11 23/25 <b>decisions [3]</b> 24/2 55/8 94/18 <b>declaration [1]</b> 32/17 <b>declared [1]</b> 146/15 <b>deconstruct [1]</b> 111/13 <b>decreased [2]</b> 52/22 53/1 <b>dedicated [1]</b> 141/24 <b>deep [1]</b> 98/1	<b>defended [1]</b> 110/13 <b>defined [7]</b> 84/14 84/18 85/13 85/15 85/16 85/17 87/9 <b>definitely [1]</b> 101/7 <b>definition [1]</b> 82/21 <b>degree [6]</b> 89/13 111/11 113/14 114/23 123/24 136/18 <b>delayed [2]</b> 7/25 106/21 <b>delegated [2]</b> 8/8 28/9 <b>delegating [1]</b> 28/19 <b>delegation [1]</b> 28/16 <b>deliberately [1]</b> 117/22 <b>deliver [7]</b> 50/23 77/14 92/8 96/15 105/24 138/7 146/14 <b>delivered [1]</b> 49/3 <b>delivering [2]</b> 50/21 94/7 <b>delivery [4]</b> 55/1 73/1 86/4 88/18 <b>demanding [1]</b> 137/23 <b>demands [1]</b> 19/9 <b>demographic [1]</b> 24/12 <b>demonstrated [3]</b> 83/4 87/17 126/15 <b>dengue [1]</b> 114/11 <b>departing [1]</b> 8/12 <b>department [8]</b> 38/3 45/14 56/3 71/4 87/20 89/6 100/15 134/14 <b>departments [8]</b> 36/4 38/23 56/2 58/13 77/22 135/8 135/21 151/25 <b>depend [1]</b> 44/12 <b>dependent [3]</b> 46/5 69/1 114/21 <b>depending [3]</b> 30/6 53/3 72/1 <b>depends [1]</b> 44/24 <b>deploy [1]</b> 62/13 <b>deployed [1]</b> 60/17 <b>deploying [1]</b> 44/22 <b>deprivation [1]</b> 53/17 <b>deprived [3]</b> 57/17 57/18 97/5 <b>deputy [5]</b> 5/2 10/2 28/10 33/12 33/14 <b>Deputy CMO [1]</b> 28/10 <b>derived [1]</b> 39/19 <b>describe [10]</b> 3/12 78/16 78/18 82/14 87/22 101/10 102/15 102/21 132/11 150/19 <b>described [7]</b> 3/15 10/14 41/22 57/2	80/10 101/3 131/2 <b>describing [4]</b> 66/8 84/22 100/20 135/17 <b>design [2]</b> 93/25 94/12 <b>designations [1]</b> 72/1 <b>designed [3]</b> 14/16 90/19 93/6 <b>designers [1]</b> 110/11 <b>designing [1]</b> 95/3 <b>desirable [1]</b> 26/17 <b>desk [1]</b> 140/7 <b>despite [1]</b> 128/19 <b>detail [4]</b> 17/2 31/6 33/20 64/8 <b>detailed [3]</b> 7/9 28/21 75/21 <b>detection [1]</b> 129/10 <b>determinants [2]</b> 73/5 76/18 <b>determination [1]</b> 120/13 <b>determined [1]</b> 119/19 <b>detriment [1]</b> 16/9 <b>detrimental [2]</b> 91/21 92/3 <b>develop [4]</b> 86/11 102/4 128/5 139/25 <b>developed [7]</b> 74/12 74/14 77/8 78/21 85/5 121/15 128/12 <b>developing [3]</b> 87/3 92/20 96/17 <b>development [18]</b> 4/13 4/18 4/21 27/7 72/21 73/13 90/1 96/8 117/8 117/19 117/25 119/6 119/20 120/10 122/16 122/17 145/18 146/10 <b>developments [1]</b> 17/8 <b>devised [1]</b> 133/14 <b>devising [1]</b> 8/11 <b>devolved [6]</b> 29/20 30/21 31/3 31/15 55/19 68/12 <b>dexamethasone [1]</b> 16/21 <b>DHSC [2]</b> 52/16 52/21 <b>diagnostic [4]</b> 18/5 126/19 133/17 145/8 <b>diagram [1]</b> 68/21 <b>dialed [1]</b> 9/24 <b>dialling [1]</b> 9/11 <b>diaspora [1]</b> 98/7 <b>did [50]</b> 2/14 3/13 4/3 4/6 5/14 5/14 6/2 8/3 9/18 11/19 13/4 18/22 25/22 49/3 51/24 54/4 57/7 57/7 58/3 58/14	58/22 61/24 67/12 75/11 75/12 75/23 76/8 98/11 98/14 108/7 108/8 108/17 108/24 109/4 114/1 117/13 119/13 122/17 123/16 125/9 127/17 128/25 129/18 130/3 136/16 138/3 142/12 144/9 145/10 148/13 <b>didn't [21]</b> 6/19 8/5 16/2 21/24 30/12 51/2 58/13 69/2 69/2 74/17 109/13 117/6 128/5 128/22 134/17 140/1 142/13 142/17 142/18 142/18 146/3 <b>died [2]</b> 146/22 146/22 <b>difference [6]</b> 16/8 17/16 45/22 50/4 92/15 101/14 <b>differences [9]</b> 49/24 51/4 99/2 102/14 102/22 133/9 133/10 133/10 133/11 <b>different [49]</b> 21/2 21/3 39/19 41/23 41/25 51/8 51/21 64/5 66/24 67/4 67/4 67/10 76/5 77/25 78/9 80/14 80/23 81/3 81/3 81/4 81/12 81/23 82/9 84/21 87/7 93/13 99/17 99/19 102/12 103/22 104/15 108/24 109/2 114/2 114/3 114/4 114/5 122/4 122/8 122/24 132/9 132/25 133/15 134/8 142/10 147/16 147/22 148/1 151/25 <b>differential [1]</b> 76/7 <b>differently [8]</b> 42/5 93/13 94/16 100/6 100/25 104/6 104/6 105/20 <b>difficult [9]</b> 9/12 19/15 20/2 20/13 103/11 104/4 118/7 142/5 148/21 <b>difficulties [5]</b> 9/19 31/9 46/9 67/13 137/9 <b>difficulty [2]</b> 55/12 78/13 <b>digital [1]</b> 15/24 <b>diktat [1]</b> 57/1 <b>diminishes [1]</b> 83/21 <b>dinner [1]</b> 5/19 <b>dint [1]</b> 89/19 <b>direct [2]</b> 41/13 43/22 <b>directed [1]</b> 60/22 <b>directions [1]</b> 81/3 <b>directly [4]</b> 8/6 11/17
----------	--	---	---	---

<b>D</b>	29/10 29/13 50/16 59/2 65/24 121/18 <b>disease [34]</b> 70/20 74/21 74/22 74/25 77/6 79/16 98/11 102/9 102/11 104/2 107/13 109/1 114/8 114/20 121/4 121/9 121/13 121/16 121/18 121/19 121/21 121/23 122/3 122/5 122/21 122/23 123/5 123/19 130/15 131/12 135/19 139/22 147/21 147/24 <b>Disease X [8]</b> 121/4 121/9 121/16 121/18 121/19 121/21 121/23 122/21 <b>Disease-like [1]</b> 147/24 <b>diseases [18]</b> 11/13 107/16 107/24 117/5 117/14 119/23 120/1 120/3 120/8 120/14 120/16 120/20 120/24 121/14 129/23 130/6 130/7 131/10 <b>disorder [1]</b> 38/15 <b>disparities [7]</b> 40/24 71/3 98/3 99/7 99/9 99/10 102/15 <b>disposal [1]</b> 43/7 <b>disproportionate [1]</b> 139/11 <b>distances [1]</b> 17/15 <b>distinct [1]</b> 113/14 <b>distinctions [1]</b> 43/13 <b>distinctly [1]</b> 68/24 <b>distributed [1]</b> 26/13 <b>distribution [1]</b> 14/12 <b>district [2]</b> 36/23 36/24 <b>diverse [1]</b> 98/12 <b>diversity [3]</b> 95/2 134/10 152/13 <b>divide [1]</b> 115/9 <b>divided [1]</b> 131/8 <b>do [97]</b> 4/10 7/11 8/10 12/25 13/24 14/8 14/17 14/20 15/22 16/24 19/13 19/23 19/23 19/23 21/12 21/18 25/7 25/18 25/23 26/3 28/22 29/21 31/20 33/16 35/6 36/14 37/1 38/1 40/14 42/22 46/11 46/12 46/22 47/10 47/11 48/9 50/12 51/6 54/4 56/5 56/18 60/15 63/1 66/11 67/16 68/17 71/25 75/5 76/10 76/11 78/18	80/3 81/1 81/6 83/18 84/8 86/4 87/4 87/6 87/10 89/17 89/21 90/12 91/11 91/12 91/13 91/24 92/18 93/5 94/8 94/16 95/12 95/18 96/19 98/20 98/23 99/12 100/10 101/8 101/23 103/20 104/12 105/7 105/17 105/19 109/17 121/2 122/18 122/18 123/25 127/17 127/20 128/8 131/1 131/4 142/7 147/2 <b>doctor [1]</b> 5/6 <b>doctors [4]</b> 2/15 2/23 3/4 72/16 <b>doctrinal [1]</b> 7/4 <b>document [16]</b> 7/4 7/10 7/12 7/16 7/16 7/25 8/3 8/5 12/23 29/2 29/19 30/24 63/24 75/13 132/23 147/16 <b>document</b> <b>INQ000148759 [1]</b> 7/16 <b>documentation [1]</b> 93/6 <b>documents [3]</b> 13/14 94/19 115/24 <b>does [27]</b> 3/1 4/12 6/4 19/5 20/21 33/9 33/12 35/18 37/13 39/9 42/5 45/21 46/7 56/24 57/6 68/6 68/7 77/24 81/17 88/12 93/17 96/20 99/21 100/10 120/20 132/16 144/19 <b>doesn't [8]</b> 31/10 33/24 87/15 101/17 109/21 118/12 133/20 148/5 <b>doing [11]</b> 62/19 77/16 85/18 93/15 95/6 99/24 99/25 109/20 130/18 130/18 152/5 <b>domain [3]</b> 84/18 84/20 85/5 <b>domains [4]</b> 84/9 85/10 85/12 104/16 <b>don't [37]</b> 7/14 8/15 17/2 19/19 23/5 25/11 25/17 26/2 26/10 27/16 27/20 28/24 29/24 30/15 32/1 33/15 36/14 40/7 40/16 40/17 42/21 44/3 48/3 59/25 61/23 62/2 68/8 84/13 97/23 101/9 114/18 130/16	147/11 148/2 148/8 148/10 150/19 <b>done [26]</b> 14/15 15/11 17/19 17/21 21/22 21/22 30/7 43/19 61/5 74/6 75/15 84/10 87/14 89/23 90/23 95/11 100/22 110/7 111/5 115/21 124/5 133/4 138/20 138/21 139/12 143/19 <b>doom [1]</b> 148/16 <b>dormant [2]</b> 18/19 18/25 <b>doses [1]</b> 147/1 <b>down [9]</b> 47/7 50/16 55/25 57/1 68/19 69/11 70/13 89/12 95/17 <b>Dr [26]</b> 1/5 1/6 1/10 1/11 2/6 7/19 16/12 20/15 21/15 22/19 22/25 23/6 25/7 26/18 27/9 27/18 27/20 31/12 32/4 104/21 108/9 121/22 137/3 138/25 144/18 154/2 <b>Dr Calderwood [19]</b> 1/11 2/6 7/19 16/12 20/15 21/15 22/19 22/25 23/6 25/7 26/18 27/9 27/18 27/20 31/12 32/4 108/9 138/25 144/18 <b>Dr Catherine [1]</b> 1/10 <b>Dr Catherine Calderwood [2]</b> 1/5 137/3 <b>Dr Hammer [1]</b> 121/22 <b>draft [4]</b> 7/16 7/20 115/2 136/9 <b>drafting [1]</b> 13/1 <b>dramatically [1]</b> 58/20 <b>draw [3]</b> 9/3 43/3 141/22 <b>drawing [3]</b> 13/1 13/4 14/19 <b>drawn [4]</b> 12/24 119/7 119/11 141/14 <b>dread [2]</b> 25/4 138/21 <b>drift [2]</b> 22/4 22/7 <b>drills [1]</b> 20/1 <b>drive [1]</b> 86/12 <b>driven [1]</b> 141/6 <b>dropped [1]</b> 10/4 <b>drug [1]</b> 54/9 <b>drugs [2]</b> 35/4 38/13 <b>due [1]</b> 90/2 <b>duplication [1]</b> 48/2 <b>during [20]</b> 2/3 16/13 17/8 18/3 23/19 43/19 49/1 70/14 108/2	110/10 112/24 139/17 140/4 140/8 141/4 143/25 144/2 145/15 146/25 150/9 <b>duties [8]</b> 2/21 2/25 3/2 3/8 4/8 38/20 82/16 83/13 <b>duty [5]</b> 35/7 35/10 36/9 48/23 50/8 <b>dysfunctional [1]</b> 25/2
			<b>E</b>	
			<b>each [7]</b> 16/11 37/6 60/21 62/19 67/4 68/22 125/12 <b>earlier [4]</b> 61/24 63/6 98/23 105/8 <b>early [10]</b> 10/6 24/5 51/14 61/25 66/1 105/6 121/17 134/4 142/17 147/17 <b>easier [2]</b> 139/16 139/17 <b>easily [3]</b> 5/23 18/24 18/25 <b>East [3]</b> 116/14 119/24 125/16 <b>easy [2]</b> 9/18 140/23 <b>EAVE [7]</b> 24/7 27/3 27/4 141/8 141/22 142/24 143/21 <b>EAVE II [1]</b> 27/4 <b>Ebola [3]</b> 116/9 129/23 147/20 <b>echoed [1]</b> 89/14 <b>economic [4]</b> 61/13 98/1 102/16 103/17 <b>Edinburgh [6]</b> 24/8 108/13 115/6 141/8 141/24 143/13 <b>Edward [1]</b> 107/5 <b>effect [1]</b> 85/23 <b>effective [10]</b> 48/24 73/1 87/17 88/12 96/10 99/20 126/18 126/20 136/23 136/23 <b>effectively [7]</b> 24/1 24/11 62/12 87/12 92/9 100/13 129/19 <b>effectiveness [1]</b> 24/16 <b>effects [3]</b> 26/4 99/13 112/3 <b>efficacy [1]</b> 142/8 <b>efficient [3]</b> 99/20 137/9 137/12 <b>effort [1]</b> 135/20 <b>efforts [1]</b> 101/13 <b>EIA [3]</b> 75/19 75/23 76/1 <b>eight [1]</b> 37/6 <b>either [7]</b> 11/17 21/22 90/10 90/15 115/10	



<b>E</b>	90/12 90/16 93/21 93/24 94/1 <b>engaged [9]</b> 19/25 20/6 39/12 42/24 78/10 96/7 102/3 102/23 137/6 <b>engagement [5]</b> 77/25 78/11 94/13 95/5 151/4 <b>engaging [3]</b> 41/6 92/17 137/1 <b>Engineering [1]</b> 136/1 <b>engines [1]</b> 44/22 <b>England [43]</b> 4/22 31/1 34/22 35/20 35/25 36/17 36/18 40/3 40/22 41/5 41/15 41/22 44/16 47/6 49/21 52/11 52/21 52/23 53/14 59/3 60/12 60/17 66/18 67/22 68/24 69/6 69/10 71/6 71/10 80/15 80/20 82/6 86/2 86/19 86/20 86/24 87/11 87/15 101/18 102/6 125/19 125/23 140/22 <b>England-only [1]</b> 53/14 <b>Enhanced [1]</b> 24/6 <b>enormous [1]</b> 112/2 <b>enough [7]</b> 17/2 63/6 95/19 113/23 114/18 117/25 148/18 <b>enquires [1]</b> 107/21 <b>ensue [1]</b> 136/6 <b>ensued [1]</b> 59/16 <b>ensure [19]</b> 14/13 18/7 19/5 20/18 28/2 39/9 79/16 80/22 86/21 88/17 90/5 90/8 92/5 94/6 95/18 100/16 103/1 105/20 118/8 <b>ensures [1]</b> 96/9 <b>ensuring [13]</b> 77/13 87/3 87/5 90/1 90/17 92/7 92/16 93/14 94/2 96/6 96/14 96/22 100/19 <b>entire [3]</b> 24/13 47/15 51/17 <b>entirely [3]</b> 44/12 44/24 139/11 <b>entitled [3]</b> 101/19 108/16 125/17 <b>entity [1]</b> 4/24 <b>environment [4]</b> 11/1 44/16 51/9 79/9 <b>environmental [9]</b> 36/3 36/20 36/22 36/23 37/8 42/1 45/1	45/13 56/18 <b>epicentre [1]</b> 129/7 <b>epidemic [7]</b> 109/5 109/10 123/6 132/10 139/25 140/5 140/5 <b>epidemics [6]</b> 77/10 100/20 125/14 128/22 130/17 130/21 <b>Epidemiological [1]</b> 107/20 <b>epidemiologist [2]</b> 70/20 103/13 <b>epidemiology [4]</b> 107/13 145/7 146/6 147/11 <b>Epigroup [1]</b> 107/20 <b>equality [6]</b> 75/10 75/18 76/3 76/12 90/3 93/22 <b>equally [4]</b> 53/10 57/14 62/20 104/11 <b>equipment [3]</b> 43/21 44/23 54/7 <b>equity [4]</b> 90/25 93/16 94/3 94/3 <b>equivalent [1]</b> 85/7 <b>eradicated [1]</b> 128/4 <b>escalation [2]</b> 29/11 29/13 <b>especially [6]</b> 20/9 77/12 86/1 99/1 105/17 126/22 <b>essence [6]</b> 2/14 57/6 62/17 116/20 119/5 121/25 <b>essential [4]</b> 51/22 72/12 73/9 74/22 <b>essentially [4]</b> 45/10 98/2 128/2 151/15 <b>established [4]</b> 41/20 42/13 72/8 117/23 <b>estimate [1]</b> 53/3 <b>estimates [1]</b> 53/5 <b>ethnic [6]</b> 91/3 91/9 97/20 98/5 99/9 104/11 <b>ethnicity [5]</b> 98/15 98/17 102/10 102/13 103/14 <b>evaluate [5]</b> 23/17 92/12 99/3 101/13 105/24 <b>evaluated [1]</b> 24/15 <b>Evaluation [1]</b> 24/6 <b>even [10]</b> 17/12 31/10 50/9 50/16 51/12 57/3 85/3 108/2 128/19 135/12 <b>event [9]</b> 10/10 90/24 90/25 93/20 128/21 131/11 138/16 147/23 147/24 <b>events [2]</b> 77/1 132/12	<b>eventualities [1]</b> 78/4 <b>eventually [2]</b> 18/12 51/13 <b>eventuate [2]</b> 20/20 64/7 <b>ever [6]</b> 20/3 25/5 47/9 126/23 133/21 138/22 <b>every [14]</b> 21/5 21/6 33/9 36/19 40/1 40/3 60/17 61/20 67/18 96/8 96/18 96/23 123/2 149/18 <b>everybody [2]</b> 21/23 94/1 <b>everybody's [1]</b> 49/12 <b>everyone [2]</b> 42/5 134/2 <b>everything [2]</b> 89/21 95/6 <b>evidence [33]</b> 1/7 1/13 1/15 3/15 4/22 7/24 8/17 12/21 23/3 23/7 24/4 33/3 48/24 63/21 64/9 70/5 70/14 71/13 79/25 88/6 89/4 89/14 103/8 106/8 108/9 108/20 112/8 118/14 121/22 136/11 141/5 144/16 153/6 <b>evident [1]</b> 123/17 <b>ex [2]</b> 45/24 112/7 <b>exacerbated [1]</b> 78/14 <b>exact [1]</b> 139/20 <b>exactly [7]</b> 77/4 110/6 135/6 139/23 140/20 140/21 145/3 <b>exam [1]</b> 133/5 <b>examinations [1]</b> 72/3 <b>examining [1]</b> 62/20 <b>example [42]</b> 18/11 18/23 19/21 21/4 21/21 24/23 33/25 41/10 43/8 43/13 43/25 44/17 44/21 45/18 47/14 50/17 56/8 57/16 60/11 61/14 66/23 67/25 77/14 78/5 80/19 81/5 82/24 83/15 83/16 84/9 89/25 90/4 90/11 102/16 111/8 111/20 114/7 114/13 117/4 123/4 123/12 145/18 <b>examples [4]</b> 21/17 21/18 66/25 112/18 <b>excellent [1]</b> 110/17 <b>exceptionally [5]</b> 46/4 46/8 51/21 51/25 67/17 <b>exclusively [1]</b> 134/5	<b>executive [8]</b> 38/1 38/4 38/7 70/21 76/24 77/24 78/8 78/14 <b>exemplary [1]</b> 59/7 <b>exercise [32]</b> 13/19 13/19 13/20 13/24 14/7 14/16 14/18 19/20 19/23 20/23 28/10 29/17 29/21 29/23 29/24 30/22 51/24 117/9 117/17 117/21 117/22 123/14 129/24 129/24 129/25 129/25 130/1 130/2 130/2 131/3 131/7 135/24 <b>Exercise Alice [1]</b> 130/1 <b>Exercise Broad Street [1]</b> 130/2 <b>Exercise Cygnus [5]</b> 28/10 29/21 29/23 29/24 30/22 <b>Exercise Iris [3]</b> 13/24 14/7 14/16 <b>Exercise Valverde [1]</b> 129/25 <b>exercised [2]</b> 110/1 111/1 <b>exercises [18]</b> 16/15 18/25 19/23 20/4 20/6 21/4 27/23 31/21 59/24 62/4 62/7 62/9 117/7 129/20 130/3 130/12 130/14 130/23 <b>exigencies [1]</b> 141/16 <b>exist [5]</b> 6/17 17/10 67/11 87/15 94/21 <b>existed [2]</b> 59/12 81/7 <b>existence [5]</b> 73/6 118/19 122/2 122/2 144/19 <b>existing [3]</b> 98/2 118/6 122/22 <b>exited [1]</b> 91/19 <b>expand [1]</b> 127/18 <b>expect [3]</b> 13/15 128/13 144/1 <b>expectations [1]</b> 46/11 <b>expected [4]</b> 28/18 30/1 46/24 49/25 <b>expense [1]</b> 88/13 <b>experience [29]</b> 5/7 28/2 28/6 28/6 30/13 46/6 63/8 63/13 75/19 76/13 83/20 84/25 91/20 92/22 94/6 94/25 95/2 96/11 98/25 102/19 103/17 105/11 105/14 105/18 106/2 125/18 128/19
----------	---	--	---	--



<b>E</b>	115/8 138/22	<b>feel [1]</b> 30/12	61/9 113/10 144/13	<b>formation [1]</b> 26/20
<b>experience... [2]</b> 135/6 137/7	<b>fact [20]</b> 4/6 12/11 14/4 21/22 24/5 49/2	<b>feeling [3]</b> 16/2 29/14 30/8	<b>Fisheries [1]</b> 140/3	<b>formed [1]</b> 27/24
<b>experienced [2]</b> 5/25 139/20	50/5 50/24 53/12 56/14 59/16 60/22	<b>feels [1]</b> 151/19	<b>fit [1]</b> 78/17	<b>former [1]</b> 144/18
<b>experiences [1]</b> 125/22	82/2 99/22 120/18 127/12 128/24 132/16	<b>fellow [3]</b> 5/6 108/13 143/14	<b>fitting [3]</b> 14/12 14/15 19/21	<b>forming [1]</b> 87/3
<b>experiencing [1]</b> 74/24	141/4 150/12	<b>fellowship [1]</b> 71/25	<b>five [6]</b> 22/12 22/12 47/5 82/25 97/2 97/6	<b>forth [1]</b> 20/21
<b>expert [7]</b> 28/2 28/7 30/21 57/11 57/14 70/19 107/17	<b>factors [2]</b> 98/2 111/21	<b>felt [11]</b> 3/13 6/13 29/17 62/15 67/14 69/11 78/11 115/11 117/21 122/13 129/8	<b>five minutes [3]</b> 22/12 97/2 97/6	<b>fortunately [1]</b> 123/7
<b>expertise [4]</b> 31/14 43/4 81/25 84/18	<b>faculty [10]</b> 70/19 71/13 71/16 71/24 71/25 72/6 72/10 73/21 74/4 75/16	<b>FEMHO [3]</b> 97/19 97/25 98/9	<b>five minutes' [1]</b> 22/12	<b>forum [9]</b> 43/8 44/5 45/7 45/25 47/14 47/21 47/23 47/24 116/5
<b>experts [1]</b> 124/12	<b>faculty's [1]</b> 73/5	<b>Fenton [20]</b> 69/23 69/24 70/1 70/4 82/17 84/2 93/9 95/14 97/10 98/20 99/15 101/2 101/16 101/23 103/5 104/18 105/7 106/3 106/9 154/14	<b>five years [1]</b> 82/25	<b>forums [6]</b> 34/1 42/23 42/23 47/11 64/17 64/19
<b>explain [1]</b> 77/2	<b>fail [1]</b> 113/17	<b>Fenton's [1]</b> 106/8	<b>fixed [1]</b> 138/12	<b>forward [4]</b> 105/17 106/1 125/19 143/10
<b>explained [3]</b> 59/22 83/13 142/24	<b>failing [1]</b> 109/19	<b>fever [3]</b> 116/10 119/22 135/17	<b>flea [2]</b> 114/12 114/13	<b>forwards [3]</b> 80/5 93/7 94/24
<b>explicitly [2]</b> 101/17 122/14	<b>failure [2]</b> 98/22 109/16	<b>fevers [1]</b> 119/21	<b>flex [2]</b> 21/1 21/1	<b>found [6]</b> 29/10 29/13 52/2 56/10 66/23 69/3
<b>explored [2]</b> 131/6 134/9	<b>failures [1]</b> 98/18	<b>few [9]</b> 1/20 22/24 23/9 39/5 46/21 58/21 63/22 91/23 149/7	<b>flexibility [3]</b> 45/22 64/5 64/11	<b>foundation [3]</b> 53/5 65/11 90/24
<b>exposed [2]</b> 81/20 98/2	<b>fair [7]</b> 49/5 55/10 113/7 113/21 113/22 125/1 135/9	<b>Fenton's [1]</b> 106/8	<b>flood [4]</b> 43/14 43/15 43/25 44/18	<b>foundational [1]</b> 73/7
<b>exposure [5]</b> 81/14 82/10 82/15 83/12 83/20	<b>fairly [3]</b> 66/14 76/4 137/22	<b>fevers [1]</b> 119/21	<b>flow [3]</b> 9/8 9/20 51/7	<b>four [20]</b> 5/22 6/25 28/1 28/3 28/5 30/5 40/8 47/5 53/11 53/12 59/4 66/10 66/19 67/4 67/8 67/11 68/3 71/18 150/24 151/8
<b>express [2]</b> 1/23 75/22	<b>fall [1]</b> 109/18	<b>few [9]</b> 1/20 22/24 23/9 39/5 46/21 58/21 63/22 91/23 149/7	<b>flowing [2]</b> 68/4 133/8	<b>four nation [1]</b> 30/5
<b>expressed [2]</b> 89/9 98/1	<b>fallen [1]</b> 53/10	<b>FFP [1]</b> 14/15	<b>flows [3]</b> 50/1 51/12 143/16	<b>four nations [14]</b> 6/25 28/3 28/5 40/8 53/11 53/12 59/4 66/10 66/19 67/4 67/8 67/11 68/3 71/18
<b>expressing [1]</b> 123/20	<b>falling [2]</b> 131/15 148/15	<b>FFP3 [1]</b> 14/12	<b>flu [5]</b> 59/20 79/21 132/13 133/23 143/18	<b>fourth [4]</b> 56/9 57/20 92/16 151/4
<b>expressly [1]</b> 151/17	<b>familiar [4]</b> 11/15 13/20 130/12 130/13	<b>field [4]</b> 19/5 98/13 107/15 113/11	<b>fluent [1]</b> 10/5	<b>frame [3]</b> 77/7 77/19 77/23
<b>extended [1]</b> 10/17	<b>families [9]</b> 1/24 22/11 22/13 22/23 65/22 97/3 97/12 148/25 149/9	<b>Filoviral [1]</b> 119/23	<b>flying [1]</b> 23/13	<b>framework [2]</b> 78/15 78/19
<b>extensive [2]</b> 136/12 136/14	<b>family [1]</b> 80/17	<b>Filoviridae [1]</b> 116/9	<b>focus [14]</b> 39/7 63/22 73/11 77/20 83/7 94/3 113/16 122/6 124/3 135/3 136/3 145/6 145/11 145/16	<b>frameworks [1]</b> 103/21
<b>extent [15]</b> 6/3 7/3 13/23 15/18 17/18 19/3 26/18 38/18 41/3 43/3 48/9 57/8 81/24 117/2 127/7	<b>famous [1]</b> 145/9	<b>final [4]</b> 60/5 120/12 136/9 144/12	<b>focused [7]</b> 42/19 83/16 91/15 124/7 130/3 150/15 150/16	<b>frankly [1]</b> 39/22
<b>extraordinarily [4]</b> 137/21 138/8 141/25 142/11	<b>fantastic [1]</b> 74/9	<b>finally [12]</b> 26/8 42/12 63/18 65/9 68/7 90/17 92/21 95/14 104/18 138/5 147/9 151/13	<b>following [1]</b> 10/16	<b>free [1]</b> 20/4
<b>extraordinary [4]</b> 15/11 128/8 145/21 146/1	<b>far [12]</b> 1/12 61/18 89/10 91/6 91/14 113/1 113/2 125/16 138/12 138/12 148/7 148/20	<b>financial [2]</b> 50/15 53/2	<b>following [4]</b> 18/19 121/2 127/3 135/25	<b>free [1]</b> 20/4
<b>extremely [11]</b> 6/2 19/15 19/15 20/1 59/8 103/18 106/12 110/9 138/9 142/16 153/2	<b>Far East [1]</b> 125/16	<b>find [12]</b> 7/7 9/18 25/5 36/8 36/22 47/4 47/15 47/16 47/23 59/12 82/21 138/22	<b>food [4]</b> 44/4 54/25 135/19 140/3	<b>frequently [5]</b> 5/14 6/2 6/10 10/4 20/1
<b>eye [2]</b> 110/23 122/1	<b>fared [1]</b> 53/16	<b>fine [1]</b> 146/15	<b>fooled [1]</b> 147/11	<b>friend [3]</b> 27/15 65/15 119/25
<b>F</b>	<b>fast [3]</b> 36/13 110/17 145/25	<b>finger [1]</b> 111/16	<b>foot [2]</b> 139/21 140/5	<b>friends [1]</b> 2/2
<b>face [4]</b> 17/17 17/17 110/11 140/16	<b>fatality [1]</b> 130/6	<b>finished [1]</b> 153/1	<b>fora [2]</b> 67/24 69/1	<b>front [1]</b> 121/12
<b>faced [3]</b> 18/2 19/10 76/5	<b>fatigue [1]</b> 126/9	<b>finishers [1]</b> 125/12	<b>force [5]</b> 47/15 47/16 79/1 80/2 81/16	<b>fruition [1]</b> 8/2
<b>facilitate [1]</b> 103/24	<b>fault [1]</b> 98/2	<b>fire [1]</b> 44/22	<b>forced [1]</b> 17/23	<b>frustration [2]</b> 27/5 143/20
<b>facilities [3]</b> 18/9 58/7 62/16	<b>fault lines [1]</b> 98/2	<b>first [28]</b> 1/4 28/8 34/10 45/12 45/15 48/13 55/24 58/15 58/21 69/10 72/13 78/20 82/22 89/16 91/18 91/25 94/2 95/21 97/13 101/21 102/4 109/9 115/14 129/3 129/6 141/22 142/13 145/23	<b>forecasting [1]</b> 98/9	<b>frustrations [2]</b> 26/24 143/22
<b>facing [4]</b> 20/8 25/5	<b>favour [1]</b> 125/10	<b>First Minister [1]</b> 89/16	<b>forever [1]</b> 101/11	<b>full [10]</b> 1/9 5/5 5/9 5/9 19/16 32/13 33/15 33/19 107/3 130/16
	<b>favourite [8]</b> 124/14 124/15 124/17 124/21 124/22 124/25 125/8 150/16	<b>Firstly [5]</b> 57/11 61/3	<b>foreword [1]</b> 101/21	<b>full-blown [1]</b> 130/16
	<b>feature [1]</b> 151/22		<b>forget [1]</b> 122/18	<b>full-time [2]</b> 5/5 5/9
	<b>features [1]</b> 35/12		<b>forgive [4]</b> 51/2 61/23 66/11 112/17	<b>fully [6]</b> 9/13 10/5 14/22 14/25 96/22 133/2
	<b>February [3]</b> 25/21 25/23 142/15		<b>form [5]</b> 3/17 9/18 118/2 118/20 135/4	
	<b>fed [2]</b> 9/21 75/6		<b>formal [4]</b> 5/18 5/21 16/5 31/13	
	<b>Federation [2]</b> 91/3 97/20		<b>formalised [1]</b> 63/9	
	<b>feed [1]</b> 66/20		<b>formally [2]</b> 62/9 65/5	

<b>F</b>	133/6 <b>function</b> [6] 40/25 72/23 81/9 83/19 86/17 102/15 <b>functioning</b> [1] 72/25 <b>functions</b> [22] 34/17 35/2 35/6 35/13 37/9 39/8 39/17 40/25 41/25 42/1 42/7 49/19 49/20 50/6 52/11 52/19 61/6 64/24 81/1 81/7 81/12 82/1 <b>fund</b> [4] 51/25 52/1 63/5 88/19 <b>fundamental</b> [1] 23/19 <b>funded</b> [2] 86/11 146/5 <b>funding</b> [6] 4/20 53/9 53/10 59/18 80/5 91/7 <b>further</b> [8] 32/2 46/15 76/17 95/12 126/25 143/10 143/12 145/5 <b>furthest</b> [2] 88/21 93/24 <b>future</b> [13] 4/13 15/6 18/8 19/7 20/24 64/11 65/11 78/17 96/5 127/9 148/9 149/21 152/22	<b>generate</b> [1] 130/16 <b>genesis</b> [1] 115/8 <b>genome</b> [1] 143/5 <b>genomic</b> [1] 145/10 <b>genus</b> [1] 116/21 <b>geographical</b> [2] 47/3 47/19 <b>geographically</b> [1] 47/10 <b>get</b> [6] 83/20 95/25 103/22 104/4 112/13 123/2 <b>gets</b> [1] 112/18 <b>getting</b> [4] 31/18 84/3 137/5 139/12 <b>give</b> [14] 1/13 3/9 18/11 32/12 57/15 57/20 60/11 70/4 71/13 88/10 107/3 123/4 124/8 127/23 <b>given</b> [16] 20/15 27/15 28/12 31/8 54/24 64/21 64/22 70/6 75/19 75/21 91/20 105/11 112/8 119/9 125/6 131/21 <b>giving</b> [4] 4/12 24/4 33/3 39/14 <b>glamorous</b> [1] 146/5 <b>global</b> [10] 74/21 98/12 107/16 108/19 108/22 109/25 110/3 110/25 112/22 151/6 <b>globally</b> [1] 113/5 <b>glorious</b> [1] 34/14 <b>go</b> [15] 19/22 31/1 50/11 68/8 70/7 76/17 90/2 95/12 110/19 119/3 120/12 125/19 125/21 126/11 142/25 <b>GO-Science</b> [1] 31/1 <b>going</b> [26] 19/19 19/20 20/13 29/8 31/4 44/21 60/12 69/3 76/18 84/17 91/24 93/7 99/25 105/21 110/16 125/13 132/18 134/7 135/7 143/23 147/3 147/6 148/17 148/17 149/20 152/21 <b>golf</b> [1] 57/16 <b>gone</b> [2] 76/13 128/17 <b>good</b> [28] 1/3 1/4 5/17 6/6 9/9 10/14 10/17 31/16 32/12 39/20 39/22 46/4 48/3 48/4 58/25 65/20 66/3 67/6 67/17 83/15 85/22 92/11 97/10 99/24 111/20 114/13 128/8 146/13 <b>goodness</b> [1] 133/3	<b>got</b> [9] 6/11 9/9 19/21 51/15 99/22 134/13 134/17 136/21 138/5 <b>governance</b> [5] 38/7 63/2 79/8 80/19 134/22 <b>government</b> [74] 2/11 2/19 2/22 3/1 3/20 7/8 7/17 9/2 10/9 10/10 10/20 10/23 11/6 11/23 12/16 13/10 18/17 26/14 37/2 49/21 54/19 55/13 55/15 55/16 55/18 55/23 56/25 58/4 58/22 59/23 60/2 65/3 66/16 68/11 70/22 73/20 77/22 77/25 80/16 81/5 85/24 86/10 86/16 87/18 90/15 92/1 92/2 95/9 95/11 96/9 96/18 99/18 100/4 105/3 127/22 130/18 132/8 134/14 134/23 135/8 135/21 136/2 136/8 144/15 147/7 147/8 148/18 150/2 150/5 150/16 151/15 151/16 151/25 152/19 <b>government's</b> [2] 132/6 149/1 <b>governmental</b> [7] 8/22 8/23 8/25 38/8 113/16 123/22 133/8 <b>governments</b> [5] 67/20 107/25 123/21 127/17 150/15 <b>gradual</b> [1] 22/7 <b>gradually</b> [1] 15/20 <b>graduate</b> [2] 138/2 138/10 <b>Grand</b> [4] 124/11 124/20 124/23 125/4 <b>Grand National</b> [1] 125/4 <b>grant</b> [7] 52/15 52/18 52/24 53/6 53/14 53/14 53/19 <b>granted</b> [4] 21/11 22/10 65/15 148/24 <b>grateful</b> [1] 33/2 <b>great</b> [8] 8/17 20/16 64/8 107/18 113/9 136/3 139/6 143/20 <b>greater</b> [16] 38/17 53/13 53/17 53/18 58/5 64/5 69/6 69/7 69/8 69/8 71/9 99/7 105/21 111/11 145/11 145/18 <b>greatest</b> [5] 18/2 90/10 115/20 119/14 135/2	<b>Gregor</b> [5] 5/3 5/8 28/9 28/17 30/3 <b>Gregor Smith</b> [5] 5/3 5/8 28/9 28/17 30/3 <b>grew</b> [2] 58/9 58/19 <b>ground</b> [1] 131/17 <b>grounds</b> [1] 110/13 <b>group</b> [14] 8/16 11/14 12/2 12/2 12/7 12/9 12/10 44/7 45/8 58/15 68/1 107/20 108/5 108/11 <b>groups</b> [13] 41/15 41/16 43/1 76/5 76/16 76/19 99/2 99/3 101/20 102/12 104/9 105/1 151/24 <b>grouphink</b> [1] 152/14 <b>guards</b> [1] 152/13 <b>guidance</b> [21] 7/22 14/19 14/25 39/18 40/5 43/16 46/8 46/14 47/8 48/15 48/22 52/7 52/7 56/3 56/12 57/4 58/16 58/17 61/4 93/6 94/19 <b>guise</b> [1] 71/12	152/2 <b>hadn't</b> [2] 117/24 143/24 <b>haemorrhagic</b> [3] 116/10 119/22 135/17 <b>half</b> [2] 57/17 146/21 <b>Hammer</b> [1] 121/22 <b>hand</b> [6] 13/1 13/4 97/3 126/4 126/4 126/14 <b>handle</b> [2] 123/3 148/21 <b>hands</b> [1] 81/20 <b>hands-on</b> [1] 81/20 <b>happen</b> [7] 18/14 19/25 20/1 20/12 31/5 148/17 148/17 <b>happened</b> [4] 52/12 54/18 132/11 140/19 <b>happening</b> [4] 15/18 21/17 22/8 147/2 <b>happens</b> [2] 62/12 134/3 <b>happy</b> [2] 25/12 152/9 <b>hard</b> [6] 20/13 88/13 88/13 88/21 88/21 141/25 <b>hardest</b> [1] 93/24 <b>Hargreaves</b> [1] 89/14 <b>harm</b> [1] 46/7 <b>harmed</b> [2] 60/19 91/9 <b>harness</b> [1] 93/8 <b>has</b> [65] 4/16 8/17 8/24 17/12 19/12 23/3 36/6 45/9 45/10 51/11 52/3 52/11 52/21 52/23 53/1 53/2 53/9 53/12 61/20 62/24 64/8 65/15 70/20 73/25 79/25 80/10 82/18 84/22 84/24 87/14 89/4 91/2 91/4 91/5 91/25 92/3 92/24 95/19 97/25 99/5 100/22 101/24 106/1 108/20 110/5 111/3 112/7 113/2 118/14 121/23 121/23 123/22 128/15 133/2 136/22 136/23 139/13 144/25 145/16 146/10 147/2 149/3 149/8 150/16 150/24 <b>hasn't</b> [1] 87/23 <b>hastily</b> [1] 52/8 <b>have</b> [275] <b>haven't</b> [7] 19/21 23/8 122/19 136/9 146/7 146/8 152/2 <b>having</b> [21] 7/24 13/1 19/8 20/21 43/18 45/23 71/5 76/13 85/4
<b>G</b>	<b>G7</b> [1] 146/14 <b>gained</b> [1] 144/25 <b>gap</b> [2] 150/11 150/18 <b>gaps</b> [3] 115/12 117/18 150/1 <b>gathering</b> [10] 16/15 23/15 97/15 103/7 103/7 105/3 137/10 137/11 137/14 151/1 <b>gave</b> [5] 49/23 55/2 55/3 55/6 130/25 <b>GDPR</b> [1] 140/25 <b>geared</b> [1] 95/4 <b>general</b> [12] 2/18 3/3 24/18 42/3 74/6 84/25 88/16 103/11 120/21 133/20 141/10 144/17 <b>General for</b> [1] 144/17 <b>General Medical</b> [1] 3/3 <b>generalist</b> [14] 82/15 82/18 83/3 83/8 83/12 84/3 84/4 84/12 84/23 84/24 85/9 85/12 85/15 96/7 <b>generally</b> [12] 8/23 15/2 34/1 37/23 55/21 56/20 98/4 116/25 120/8 123/2 130/4				

<b>H</b>	132/9 137/15 148/16	113/23 123/15 125/1 125/23 129/1 129/6 129/8 131/24 139/25 143/8 143/14	<b>I had [3]</b> 10/13 18/13 136/21	12/17 13/13 15/10 15/21 16/8 17/12 19/15 21/7 21/16 25/21 25/22 26/24 27/15 30/8 35/17 43/10 46/2 46/9 48/3 49/5 50/2 50/25 51/17 52/6 54/16 54/16 54/18 55/10 55/24 56/9 56/13 56/20 57/20 58/9 58/12 59/6 59/18 60/1 60/2 61/9 61/15 66/14 67/16 67/18 68/19 69/5 74/8 82/19 85/3 85/21 93/1 95/21 97/5 97/6 97/21 105/10 109/12 109/24 110/13 111/13 111/16 113/5 113/22 116/1 118/14 119/5 122/7 125/1 128/19 130/24 132/15 134/20 135/6 139/2 139/18 140/20 141/9 141/20 144/8 145/13 145/25 146/7 150/12 150/24 151/23
<b>having...</b> [12] 87/21 92/11 94/17 102/10 111/17 111/22 112/1 127/14 138/15 140/15 141/16 145/1	<b>hesitate [1]</b> 27/14	<b>however [1]</b> 36/15	<b>I have [14]</b> 13/25 26/23 29/4 40/13 59/17 82/25 83/3 83/8 83/9 131/7 135/6 138/9 139/19 151/24	<b>I haven't [2]</b> 23/8 136/9
<b>hazard [1]</b> 19/8	<b>hierarchy [1]</b> 39/24	<b>HPA [1]</b> 126/4	<b>I hope [4]</b> 6/12 85/20 98/24 148/4	<b>I hesitate [1]</b> 27/14
<b>hazards [2]</b> 64/12 78/18	<b>high [9]</b> 19/11 98/10 115/2 115/3 129/22 130/5 130/6 130/6 130/15	<b>huge [8]</b> 17/13 17/16 17/24 50/25 58/5 79/25 92/25 98/22	<b>I just [5]</b> 1/23 7/18 95/14 112/25 149/10	<b>I haven't [2]</b> 23/8 136/9
<b>HCID [4]</b> 14/20 130/1 131/20 131/22	<b>high-consequence [3]</b> 129/22 130/6 130/15	<b>human [3]</b> 115/4 116/16 129/4	<b>I knew [1]</b> 5/25	<b>I like [1]</b> 152/17
<b>HCIDs [2]</b> 130/4 130/4	<b>highest [2]</b> 92/1 109/7	<b>hundreds [3]</b> 131/14 131/19 138/1	<b>I know [4]</b> 27/5 45/12 67/1 103/10	<b>I listed [1]</b> 113/25
<b>he [16]</b> 10/15 12/10 18/15 24/8 26/3 26/15 28/12 28/13 45/25 89/8 91/4 97/18 98/8 104/20 139/23 139/24	<b>highlighted [3]</b> 29/12 124/5 126/21	<b>hurdles [1]</b> 139/9	<b>I made [1]</b> 85/3	<b>I may [12]</b> 30/4 31/25 31/25 51/2 57/15 60/11 82/23 85/2 97/16 99/16 109/12 143/12
<b>head [1]</b> 53/16	<b>highlights [1]</b> 74/7	<b>hypothetical [1]</b> 122/2	<b>I mean [6]</b> 56/25 60/14 111/6 130/17 152/4 152/17	<b>I mentioned [1]</b> 98/23
<b>headed [1]</b> 126/3	<b>highly [1]</b> 120/1	<b>I</b>	<b>I met [1]</b> 6/8	<b>I must [1]</b> 91/18
<b>headings [1]</b> 53/25	<b>him [5]</b> 12/6 26/9 26/25 28/20 139/22	<b>I advised [1]</b> 139/20	<b>I might [1]</b> 60/5	<b>I myself [1]</b> 7/9
<b>headteachers [1]</b> 44/18	<b>hindsight [2]</b> 13/13 75/19	<b>I agree [3]</b> 26/23 110/24 131/24	<b>I must [1]</b> 91/18	<b>I needed [1]</b> 7/7
<b>health [393]</b>	<b>his [11]</b> 18/16 24/9 24/12 24/20 26/11 91/11 97/23 97/25 98/8 104/19 104/20	<b>I also [1]</b> 3/18	<b>I now [1]</b> 114/23	<b>I only [1]</b> 121/6
<b>health's [1]</b> 39/8	<b>history [1]</b> 34/14	<b>I always [1]</b> 3/12	<b>I operate [1]</b> 83/1	<b>I operate [1]</b> 83/1
<b>health-related [1]</b> 38/14	<b>hit [1]</b> 61/20	<b>I am [5]</b> 8/5 65/13 136/7 136/20 148/18	<b>I preface [1]</b> 97/15	<b>I preface [1]</b> 97/15
<b>healthcare [20]</b> 10/21 16/16 18/3 19/6 19/13 48/8 62/17 83/6 91/4 91/8 97/19 97/20 97/21 126/21 129/16 129/17 130/8 131/13 137/12 141/10	<b>HIV [4]</b> 50/18 50/19 50/21 117/24	<b>I answering [1]</b> 67/9	<b>I realise [1]</b> 139/17	<b>I realise [1]</b> 139/17
<b>healthcare [20]</b> 10/21 16/16 18/3 19/6 19/13 48/8 62/17 83/6 91/4 91/8 97/19 97/20 97/21 126/21 129/16 129/17 130/8 131/13 137/12 141/10	<b>HIV/AIDS [1]</b> 117/24	<b>I appreciate [1]</b> 36/25	<b>I really [1]</b> 147/3	<b>I recall [1]</b> 121/7
<b>heard [21]</b> 4/22 23/3 30/13 30/19 31/8 50/8 64/8 73/25 79/25 82/18 89/4 97/18 102/23 108/9 108/20 121/21 134/20 137/4 141/4 144/4 144/16	<b>hodgepodge [1]</b> 91/6	<b>I ask [4]</b> 1/12 22/23 65/21 97/11	<b>I remember [3]</b> 37/7 68/24 121/11	<b>I right [1]</b> 149/14
<b>hearing [3]</b> 9/19 147/20 153/9	<b>holding [1]</b> 82/4	<b>I attempt [1]</b> 84/21	<b>I said [2]</b> 72/14 110/24	<b>I say [2]</b> 33/3 129/19
<b>heavily [1]</b> 56/15	<b>holds [1]</b> 4/17	<b>I believe [9]</b> 14/10 31/20 74/6 87/16 93/1 100/5 100/9 112/7 113/5	<b>I see [2]</b> 22/7 73/23	<b>I see [2]</b> 22/7 73/23
<b>hedge [1]</b> 125/11	<b>holing [1]</b> 131/9	<b>I call [1]</b> 69/22	<b>I should [6]</b> 11/21 54/22 68/18 95/8 125/21 129/14	<b>I should [6]</b> 11/21 54/22 68/18 95/8 125/21 129/14
<b>hedging [1]</b> 150/14	<b>home [2]</b> 61/19 126/18	<b>I came [1]</b> 7/6	<b>I shouldn't [1]</b> 84/16	<b>I shouldn't [1]</b> 84/16
<b>held [2]</b> 31/11 71/5	<b>homes [7]</b> 16/18 42/1 48/15 48/25 49/2 55/9 105/2	<b>I can [8]</b> 18/11 22/20 22/21 27/19 33/21 124/8 127/23 150/19	<b>I spoke [1]</b> 105/8	<b>I spoke [1]</b> 105/8
<b>help [13]</b> 3/17 54/24 57/19 68/6 69/17 74/12 82/16 82/21 93/21 94/11 99/8 106/11 153/2	<b>honorary [2]</b> 36/10 51/15	<b>I can't [5]</b> 22/20 29/4 103/10 127/22 129/6	<b>I stick [1]</b> 138/10	<b>I stick [1]</b> 138/10
<b>helpful [6]</b> 18/13 58/12 59/9 138/8 151/12 153/2	<b>hope [6]</b> 6/12 17/1 85/20 98/24 147/4 148/4	<b>I continued [1]</b> 4/10	<b>I suppose [5]</b> 17/23 18/11 18/24 28/16 116/13	<b>I suppose [5]</b> 17/23 18/11 18/24 28/16 116/13
<b>helpfully [1]</b> 32/23	<b>hopefully [1]</b> 152/21	<b>I could [1]</b> 30/23	<b>I suspect [1]</b> 140/21	<b>I suspect [1]</b> 140/21
<b>helping [1]</b> 80/21	<b>horse [2]</b> 124/11 124/23	<b>I did [5]</b> 3/13 13/4 108/8 108/17 144/9	<b>I take [1]</b> 20/25	<b>I take [1]</b> 20/25
<b>her [1]</b> 139/2	<b>horseracing [2]</b> 124/9 124/12	<b>I didn't [3]</b> 6/19 8/5 117/6	<b>I then [1]</b> 6/24	<b>I then [1]</b> 6/24
<b>here [8]</b> 17/12 18/21 40/13 53/8 113/10	<b>horses [1]</b> 124/20	<b>I do [7]</b> 25/23 26/3 31/20 50/12 91/12 98/23 105/17	<b>I therefore [1]</b> 40/11	<b>I therefore [1]</b> 40/11
	<b>hospital [3]</b> 21/24 22/1 23/16	<b>I don't [19]</b> 7/14 8/15 17/2 23/5 25/11 26/2 27/16 28/24 29/24 30/15 32/1 40/16 44/3 59/25 61/23 62/2 148/8 148/10 150/19	<b>I think [87]</b> 9/5 9/8	<b>I think [87]</b> 9/5 9/8
	<b>hours [1]</b> 138/1	<b>I dread [2]</b> 25/4 138/21		
	<b>how [47]</b> 5/14 13/7 19/5 19/11 19/13 20/3 23/16 23/16 24/1 24/1 26/5 30/6 30/7 33/18 37/5 37/18 39/16 66/11 66/23 75/22 77/9 80/23 90/12 90/13 91/13 92/18 93/5 95/18 98/1 99/21 100/6 100/7 102/1 102/11 109/2 113/14	<b>I expect [1]</b> 144/1		
		<b>I felt [1]</b> 3/13		
		<b>I give [1]</b> 123/4		
		<b>I got [1]</b> 6/11		

<b>I</b>	125/19 125/21 126/2 126/11 132/21 135/12 138/22 141/14 142/14 143/10 143/12 144/7 144/22 150/19 <b>ignorance [1]</b> 105/2 <b>II [1]</b> 27/4 <b>illicit [1]</b> 38/14 <b>illustrated [1]</b> 27/3 <b>imagination [2]</b> 64/10 147/25 <b>imagine [1]</b> 44/1 <b>immediate [2]</b> 19/9 132/10 <b>immediately [2]</b> 18/22 19/1 <b>immemorial [1]</b> 61/20 <b>impact [31]</b> 48/7 53/9 54/17 55/4 59/13 60/22 68/1 75/10 75/18 76/12 76/15 76/18 77/12 88/6 89/22 90/3 90/22 91/21 92/3 92/13 99/4 101/13 101/20 105/5 105/25 112/11 133/17 133/18 133/19 143/8 143/8 <b>impacted [2]</b> 93/19 125/25 <b>impacts [6]</b> 61/12 61/13 76/7 93/21 102/9 103/2 <b>impediment [2]</b> 101/24 139/11 <b>implementation [1]</b> 14/5 <b>implemented [6]</b> 13/24 14/2 14/9 14/22 14/25 80/7 <b>implication [2]</b> 116/22 123/19 <b>implications [1]</b> 138/15 <b>importance [11]</b> 15/22 23/3 23/19 28/12 74/16 79/19 92/10 93/14 94/9 95/22 108/2 <b>important [44]</b> 2/16 6/16 10/6 12/19 14/10 23/9 23/11 23/15 40/7 42/24 43/10 43/17 43/20 60/15 74/19 77/22 80/21 86/3 86/13 86/13 86/14 86/14 86/17 87/11 88/23 88/25 92/14 99/11 101/4 101/5 101/15 102/12 102/20 104/3 113/23 113/24 122/14 129/15 135/24 142/1 142/11 143/14	145/13 151/22 <b>importantly [2]</b> 15/15 65/9 <b>impose [1]</b> 57/1 <b>imprecision [1]</b> 89/13 <b>impression [1]</b> 118/12 <b>improve [7]</b> 35/10 38/19 41/1 58/4 73/8 100/7 101/8 <b>improved [4]</b> 58/20 58/20 67/23 91/19 <b>improvement [8]</b> 39/6 40/24 57/25 71/3 83/6 84/11 85/17 139/14 <b>improvements [2]</b> 15/19 17/25 <b>improving [1]</b> 73/2 <b>inaccuracies [1]</b> 99/25 <b>inadequacies [1]</b> 59/11 <b>inadequate [1]</b> 11/22 <b>inappropriate [1]</b> 132/18 <b>inception [1]</b> 80/21 <b>incidence [1]</b> 44/4 <b>incident [8]</b> 41/9 44/12 44/14 44/25 45/11 45/16 93/19 126/7 <b>incidents [1]</b> 44/25 <b>incipient [1]</b> 128/1 <b>include [6]</b> 33/12 79/22 83/5 89/7 98/15 147/20 <b>included [5]</b> 63/13 90/6 112/5 117/20 143/1 <b>includes [4]</b> 66/18 72/19 89/1 116/9 <b>including [6]</b> 34/25 70/23 92/24 112/10 116/11 143/21 <b>increased [3]</b> 20/2 52/21 52/23 <b>increasing [1]</b> 76/19 <b>incredibly [2]</b> 15/12 144/24 <b>incubation [1]</b> 133/9 <b>indeed [12]</b> 34/9 42/9 42/17 52/17 54/16 59/6 63/17 64/13 64/13 69/16 89/15 114/6 <b>index [5]</b> 108/20 108/22 110/3 110/8 153/11 <b>Indian [2]</b> 98/5 104/23 <b>indicate [1]</b> 151/18 <b>indication [1]</b> 31/8	<b>indicative [1]</b> 103/8 <b>indicator [1]</b> 112/13 <b>indices [6]</b> 110/4 110/11 111/3 111/24 112/6 112/13 <b>indirectly [1]</b> 11/18 <b>individual [5]</b> 8/6 34/6 35/5 41/3 73/10 <b>individuals [3]</b> 6/12 24/17 102/17 <b>ineffective [1]</b> 132/19 <b>inequalities [32]</b> 41/1 61/5 61/7 61/22 65/10 73/4 73/7 73/9 73/12 73/16 75/22 76/8 85/19 88/2 88/4 88/6 89/8 89/20 89/22 90/2 91/17 91/21 91/22 92/2 92/12 92/22 93/4 94/22 94/22 100/8 104/15 105/13 <b>inequality [1]</b> 91/5 <b>infection [10]</b> 16/17 48/14 48/15 49/7 79/23 81/8 126/16 126/17 129/15 133/11 <b>infections [2]</b> 77/5 116/12 <b>infectious [15]</b> 11/13 70/20 74/21 74/22 74/25 79/16 98/10 107/13 107/15 107/24 114/2 114/3 124/6 129/22 130/15 <b>influenza [42]</b> 7/1 7/1 7/21 8/11 73/24 77/3 77/10 105/9 105/11 108/5 114/24 117/20 117/23 118/2 118/5 118/6 118/13 118/17 121/1 123/1 123/25 124/3 124/7 124/16 125/9 126/25 128/14 130/10 131/10 131/18 132/3 132/14 132/17 132/24 133/1 134/5 134/14 135/3 135/12 136/4 138/17 138/23 <b>influenza' [1]</b> 25/6 <b>informal [3]</b> 5/18 5/20 18/15 <b>informally [1]</b> 152/5 <b>information [21]</b> 9/8 9/21 14/11 26/16 31/14 31/19 54/13 62/24 63/2 67/25 68/4 74/17 75/4 90/21 93/8 100/13 104/14 142/1 142/8 142/12 143/16 <b>informed [3]</b> 9/4 60/11 142/16 <b>infrastructure [5]</b> 9/25 15/25 90/18 95/24 151/2	<b>infrequent [1]</b> 91/7 <b>inherent [3]</b> 125/4 127/12 137/8 <b>inherently [1]</b> 113/13 <b>initially [1]</b> 82/12 <b>initiative [1]</b> 151/19 <b>initiatives [1]</b> 143/6 <b>innovation [3]</b> 15/25 151/7 152/15 <b>innovations [1]</b> 145/17 <b>input [3]</b> 43/9 74/14 152/13 <b>inputs [1]</b> 147/3 <b>INQ00006129 [1]</b> 30/23 <b>INQ00006210 [1]</b> 29/1 <b>INQ000120838 [1]</b> 101/22 <b>INQ000148405 [1]</b> 70/7 <b>INQ000148759 [1]</b> 7/16 <b>INQ000149108 [1]</b> 117/12 <b>INQ000149116 [1]</b> 115/1 <b>INQ000174832 [1]</b> 97/24 <b>INQ000182605 [2]</b> 1/17 27/21 <b>INQ000183419 [3]</b> 32/15 40/10 53/24 <b>INQ000185342 [1]</b> 26/11 <b>INQ00018793 [1]</b> 125/17 <b>INQUIRY [31]</b> 1/8 1/12 8/17 23/2 29/1 30/24 31/10 32/11 32/12 33/1 48/14 68/22 69/25 71/14 79/25 82/18 83/14 89/4 91/2 91/5 107/2 107/3 107/6 107/18 109/7 135/11 147/4 154/4 154/11 154/16 154/21 <b>insects [1]</b> 114/10 <b>insistence [1]</b> 12/11 <b>insofar [2]</b> 57/5 144/21 <b>instances [1]</b> 129/11 <b>instead [1]</b> 21/18 <b>instigated [1]</b> 19/1 <b>institutional [3]</b> 102/1 103/8 144/22 <b>institutions [2]</b> 108/14 151/6 <b>instrument [1]</b> 121/14 <b>insufficient [1]</b> 62/15 <b>integrated [4]</b> 47/19
----------	---	--	---	--

<p><b>I</b></p> <p><b>integrated... [3]</b> 96/23 100/3 104/22</p> <p><b>integrating [1]</b> 96/11</p> <p><b>intelligence [3]</b> 9/3 83/7 150/22</p> <p><b>intended [1]</b> 110/14</p> <p><b>intensive [1]</b> 23/17</p> <p><b>interact [1]</b> 6/20</p> <p><b>interacted [2]</b> 3/18 6/9</p> <p><b>interest [4]</b> 48/13 107/18 132/14 133/25</p> <p><b>interested [1]</b> 25/10</p> <p><b>interesting [2]</b> 106/12 153/2</p> <p><b>interests [1]</b> 139/10</p> <p><b>interim [1]</b> 119/11</p> <p><b>international [5]</b> 108/1 109/18 111/2 113/9 117/3</p> <p><b>internationally [1]</b> 70/23</p> <p><b>interpretation [1]</b> 109/24</p> <p><b>interpreted [1]</b> 17/21</p> <p><b>interrelationships [1]</b> 46/13</p> <p><b>interrupting [1]</b> 112/17</p> <p><b>intervention [3]</b> 75/3 79/18 88/8</p> <p><b>interventions [11]</b> 24/16 78/2 78/7 78/7 79/15 79/21 88/5 88/10 92/13 99/4 146/7</p> <p><b>into [39]</b> 7/6 9/9 9/21 14/6 16/15 17/23 21/8 21/16 21/19 22/7 23/2 27/4 39/23 43/9 49/2 62/9 70/14 75/6 79/1 80/2 91/17 96/23 107/21 109/18 111/10 115/9 121/8 121/15 128/5 128/12 128/17 130/16 130/21 131/10 134/13 136/8 141/6 147/12 149/20</p> <p><b>introduced [1]</b> 111/10</p> <p><b>invaluable [1]</b> 142/8</p> <p><b>invasive [1]</b> 17/21</p> <p><b>invest [4]</b> 88/19 96/14 99/12 124/10</p> <p><b>invested [1]</b> 81/6</p> <p><b>investigator [1]</b> 107/19</p> <p><b>investing [3]</b> 92/5 96/4 96/13</p> <p><b>invitation [1]</b> 74/4</p> <p><b>invitations [1]</b> 9/7</p> <p><b>invited [3]</b> 13/15 74/2</p>	<p>74/9</p> <p><b>inviting [1]</b> 139/2</p> <p><b>involved [7]</b> 8/9 26/22 62/7 94/18 117/6 126/9 136/21</p> <p><b>involves [1]</b> 152/14</p> <p><b>Ireland [10]</b> 35/21 35/22 37/18 37/20 37/21 37/25 38/2 38/8 41/19 41/23</p> <p><b>Iris [4]</b> 13/19 13/24 14/7 14/16</p> <p><b>ironically [1]</b> 14/3</p> <p><b>is [333]</b></p> <p><b>is variant CJD [1]</b> 123/4</p> <p><b>islands [1]</b> 34/15</p> <p><b>isn't [3]</b> 72/5 130/23 150/8</p> <p><b>isolation [2]</b> 126/18 129/10</p> <p><b>issue [18]</b> 16/3 25/9 25/19 25/24 26/19 39/6 45/12 53/22 54/20 56/24 60/5 61/15 65/6 92/25 94/5 108/18 136/20 136/22</p> <p><b>issued [2]</b> 40/5 74/4</p> <p><b>issues [26]</b> 3/11 6/10 24/22 28/14 28/18 28/22 29/15 38/13 38/14 43/14 43/20 50/9 50/14 50/15 73/15 76/3 76/5 104/10 107/24 137/15 139/23 140/4 140/16 140/17 150/1 151/18</p> <p><b>it [261]</b></p> <p><b>it's [60]</b> 11/16 15/6 16/13 20/2 20/9 22/8 23/22 27/21 29/12 38/4 38/6 40/7 40/11 45/11 48/2 50/13 67/3 68/8 69/5 72/5 74/8 86/13 86/14 86/14 87/23 88/25 95/21 96/22 97/15 97/24 99/23 99/25 101/5 101/22 102/20 104/3 106/11 118/7 118/8 118/18 121/11 121/24 122/13 122/16 122/18 122/19 128/17 128/17 134/21 134/21 138/12 146/19 148/5 148/11 149/18 149/20 150/4 150/10 152/6 153/2</p> <p><b>its [18]</b> 8/11 9/3 36/6 42/7 52/19 72/25 80/12 80/21 102/9 107/9 113/19 117/4 117/14 120/6 132/6 147/2 149/23 151/18</p> <p><b>itself [5]</b> 8/1 59/13</p>	<p>87/17 102/11 103/7</p> <p><b>J</b></p> <p><b>Jane [1]</b> 1/10</p> <p><b>January [7]</b> 32/24 58/12 68/13 73/19 121/6 142/14 142/25</p> <p><b>January 2017 [1]</b> 121/6</p> <p><b>January 2020 [1]</b> 142/25</p> <p><b>Jim [4]</b> 32/9 32/10 32/14 154/9</p> <p><b>Jim McManus [1]</b> 32/14</p> <p><b>job [2]</b> 135/11 138/2</p> <p><b>John [1]</b> 107/5</p> <p><b>joining [1]</b> 32/5</p> <p><b>joint [3]</b> 72/6 82/4 108/23</p> <p><b>jointly [1]</b> 8/25</p> <p><b>July [3]</b> 1/1 7/18 153/10</p> <p><b>June [2]</b> 58/14 142/14</p> <p><b>June 2020 [2]</b> 58/14 142/14</p> <p><b>just [68]</b> 1/19 1/20 1/23 3/7 7/18 12/3 12/15 13/13 16/11 21/12 21/12 21/24 22/3 22/24 29/3 33/13 33/19 34/16 35/12 35/14 40/17 46/15 48/7 49/22 55/12 55/16 61/1 63/22 65/20 70/16 72/9 77/16 78/25 83/13 84/5 85/15 87/23 91/15 93/8 93/11 95/14 97/16 99/16 102/2 110/16 110/16 110/19 111/9 112/25 113/23 113/25 114/9 120/8 122/9 135/4 135/17 137/13 138/12 142/24 146/4 146/18 146/19 147/4 148/2 148/3 149/7 149/10 149/18</p> <p><b>Justice [8]</b> 22/11 22/13 22/24 65/22 97/3 97/12 148/25 149/9</p> <p><b>Justice UK [4]</b> 22/24 65/22 97/3 97/12</p> <p><b>K</b></p> <p><b>KC [10]</b> 22/17 27/13 65/18 97/9 149/5 154/6 154/7 154/12 154/17 154/22</p> <p><b>keen [2]</b> 6/6 12/15</p> <p><b>keep [6]</b> 1/13 18/24</p>	<p>19/11 19/18 110/18 144/23</p> <p><b>Keith [7]</b> 1/19 13/11 52/6 68/21 112/17 140/23 149/8</p> <p><b>Kevin [4]</b> 69/23 69/24 70/1 154/14</p> <p><b>key [13]</b> 27/24 57/4 66/1 66/2 74/8 82/11 83/4 88/7 95/23 96/9 126/9 140/2 150/24</p> <p><b>kilter [2]</b> 139/8 139/9</p> <p><b>kind [5]</b> 45/11 77/6 114/19 116/2 138/11</p> <p><b>kindly [1]</b> 1/16</p> <p><b>kinds [1]</b> 114/22</p> <p><b>King [1]</b> 139/21</p> <p><b>King's [5]</b> 51/25 52/1 63/5 65/16 97/15</p> <p><b>King's Counsel [2]</b> 65/16 97/15</p> <p><b>King's Fund [3]</b> 51/25 52/1 63/5</p> <p><b>Kingdom [30]</b> 5/16 15/2 17/6 22/11 33/6 34/11 40/20 42/5 63/3 68/11 70/18 70/22 71/13 71/19 72/7 73/24 108/3 108/21 111/3 115/9 118/3 125/24 126/1 129/20 136/2 140/18 141/1 148/25 149/9 150/15</p> <p><b>Kingdom's [2]</b> 73/20 108/19</p> <p><b>knew [4]</b> 5/25 21/25 81/10 129/3</p> <p><b>knit [1]</b> 80/22</p> <p><b>know [37]</b> 3/21 6/12 16/25 17/2 18/15 23/6 27/5 31/12 38/1 44/3 45/12 45/14 46/16 57/14 67/1 68/17 69/2 70/17 75/5 81/4 87/15 92/21 100/1 101/6 102/18 103/10 103/15 116/13 130/10 132/20 133/3 139/24 145/21 148/8 148/10 150/19 152/17</p> <p><b>knowledge [15]</b> 7/9 17/10 28/2 28/7 30/21 31/13 31/14 54/12 70/9 76/13 79/13 83/7 131/7 144/25 146/18</p> <p><b>known [11]</b> 7/7 24/7 35/13 35/16 89/11 118/4 118/19 120/3 122/23 132/2 145/7</p> <p><b>L</b></p> <p><b>label [1]</b> 121/20</p> <p><b>laboratory [1]</b> 98/13</p> <p><b>labour [3]</b> 19/18</p>	<p>19/25 21/5</p> <p><b>lack [14]</b> 23/25 49/24 51/4 56/14 56/20 56/22 60/1 76/24 80/7 88/6 101/23 103/5 104/25 110/2</p> <p><b>lacking [2]</b> 59/23 78/11</p> <p><b>Lady [62]</b> 1/4 1/21 1/24 21/11 22/10 22/18 26/10 27/10 27/14 32/8 38/25 39/25 41/25 43/11 46/3 47/1 48/14 50/7 52/10 57/16 59/9 59/11 60/7 62/23 64/8 65/15 65/19 67/20 69/2 69/14 69/18 69/22 72/11 72/17 73/12 73/25 77/18 79/19 82/23 85/20 88/16 91/18 93/23 97/1 97/4 97/8 97/24 101/7 101/22 102/24 105/22 106/6 106/10 106/23 108/20 121/21 123/23 134/20 137/3 144/15 148/24 153/6</p> <p><b>Lady's [1]</b> 141/4</p> <p><b>lag [1]</b> 119/7</p> <p><b>Lamb [1]</b> 144/16</p> <p><b>large [5]</b> 9/23 30/5 99/15 126/8 127/4</p> <p><b>largely [6]</b> 38/22 48/11 62/1 77/10 77/20 88/5</p> <p><b>larger [1]</b> 29/4</p> <p><b>last [6]</b> 39/5 40/6 51/3 126/2 126/11 147/13</p> <p><b>late [1]</b> 16/4</p> <p><b>later [3]</b> 24/5 117/7 134/5</p> <p><b>latter [1]</b> 56/24</p> <p><b>latterly [2]</b> 10/15 58/5</p> <p><b>law [1]</b> 46/24</p> <p><b>lead [8]</b> 1/8 32/11 45/5 99/25 107/2 154/3 154/10 154/20</p> <p><b>leader [1]</b> 65/6</p> <p><b>leaders [2]</b> 78/9 94/7</p> <p><b>leadership [4]</b> 5/6 70/21 87/18 91/25</p> <p><b>leading [2]</b> 44/10 70/23</p> <p><b>leads [1]</b> 44/4</p> <p><b>learn [7]</b> 16/2 66/2 66/25 74/24 93/11 99/12 146/25</p> <p><b>learned [6]</b> 15/10 16/6 27/14 59/25 65/15 125/18</p> <p><b>learning [6]</b> 9/3 17/9 21/19 78/23 82/10</p>
---	--	---	---	---

<b>L</b>	<b>leverage [2]</b> 92/18 94/5	<b>Liverpool [1]</b> 34/12	69/3 72/24 77/21 130/20 132/22	133/19
<b>learning...</b> [1] 144/24	<b>LGBTQ [1]</b> 104/9	<b>lives [7]</b> 2/5 63/4	<b>looks [1]</b> 131/24	<b>manifesting [1]</b> 102/11
<b>learnings [1]</b> 94/25	<b>LHRP [3]</b> 47/2 47/4 50/7	101/14 135/23 138/19 141/17 146/3	<b>loop [1]</b> 57/8	<b>manner [1]</b> 28/23
<b>least [11]</b> 16/22 43/15 43/19 61/10 61/10 61/11 61/11 61/21 118/2 144/20 148/15	<b>LHRPs [1]</b> 47/1	<b>living [1]</b> 103/16	<b>lose [2]</b> 40/7 124/25	<b>manual [1]</b> 61/17
<b>leave [3]</b> 20/7 85/21 118/11	<b>liaising [1]</b> 39/15	<b>local [108]</b> 6/15 6/15 6/17 6/19 6/22 33/25 34/1 34/18 34/23 35/1 35/14 35/15 35/16 36/18 36/19 37/2 37/9 37/15 37/16 37/22 39/15 40/1 40/3 41/24 42/22 42/23 42/24 43/8 44/2 44/5 44/16 45/1 45/7 45/24 45/25 46/17 46/18 46/23 46/24 47/8 47/9 47/10 47/14 47/17 47/18 47/21 47/22 47/23 47/24 47/24 48/10 48/17 49/21 50/4 51/5 51/9 51/20 51/21 52/15 52/18 52/25 54/10 54/14 55/16 55/20 56/7 56/7 56/16 56/22 57/6 57/15 57/15 57/23 57/23 58/4 58/6 58/7 58/16 58/18 59/14 62/11 62/16 62/16 62/18 62/21 64/17 64/17 64/18 64/19 65/6 65/8 67/21 68/5 69/1 78/10 80/15 81/5 83/24 86/22 87/8 87/18 90/4 90/5 90/15 95/9 96/2 99/19 100/4	<b>lost [6]</b> 2/4 81/24 87/23 114/14 145/2 147/4	<b>many [34]</b> 2/2 3/18 15/10 18/16 23/16 23/17 27/6 30/6 33/18 36/9 37/5 37/18 46/2 48/22 52/3 60/24 61/14 62/5 62/14 63/20 80/14 84/10 99/6 102/14 107/16 134/12 136/24 140/21 143/6 143/20 147/16 149/19 151/24 151/25
<b>leaving [1]</b> 57/8	<b>lie [1]</b> 20/21	<b>lots [3]</b> 36/14 96/3 128/16	<b>lot [19]</b> 11/5 17/15 30/5 74/1 77/17 86/4 87/2 89/23 121/18 124/19 132/11 134/3 134/6 134/15 135/14 135/15 135/20 135/23 151/2	<b>March [8]</b> 11/19 12/8 18/13 25/23 115/6 121/17 137/1 142/15
<b>led [10]</b> 16/20 23/13 24/7 44/8 44/19 44/20 44/25 80/7 128/9 141/23	<b>life [4]</b> 49/19 50/24 139/12 146/2	<b>love [2]</b> 103/13 103/15	<b>lower [1]</b> 128/23	<b>March 2015 [1]</b> 115/6
<b>led [10]</b> 16/20 23/13 24/7 44/8 44/19 44/20 44/25 80/7 128/9 141/23	<b>life-saving [1]</b> 139/12	<b>low [3]</b> 112/18 131/20 144/8	<b>low [3]</b> 112/18 131/20 144/8	<b>March 2017 [1]</b> 121/17
<b>left [4]</b> 30/11 46/1 57/4 140/15	<b>lifestyles [1]</b> 113/3	<b>lower [1]</b> 128/23	<b>LRF [4]</b> 43/20 44/19 44/21 46/4	<b>March 2020 [3]</b> 12/8 25/23 142/15
<b>legacies [2]</b> 93/12 98/24	<b>lift [2]</b> 5/23 6/13	<b>luxury [2]</b> 19/19 19/21	<b>LRFs [2]</b> 43/3 43/6	<b>margin [1]</b> 109/8
<b>legacy [2]</b> 106/1 139/19	<b>light [2]</b> 18/6 121/24		<b>marked [1]</b> 57/25	<b>marginalised [1]</b> 133/19
<b>legal [1]</b> 48/21	<b>like [43]</b> 1/20 2/1 9/25 17/14 17/18 23/14 31/12 35/3 36/20 39/24 41/25 45/7 51/15 53/21 54/9 61/1 85/9 102/2 108/18 113/20 114/11 114/18 120/13 123/12 123/16 124/9 130/9 132/12 134/2 134/4 134/11 134/24 135/16 135/19 137/8 138/17 141/13 147/12 147/20 147/23 147/24 151/22 152/17	<b>M</b>	<b>Mad [5]</b> 108/16 123/5 135/19 147/21 147/24	<b>Mark [4]</b> 106/24 107/1 107/5 154/19
<b>legislation [4]</b> 78/24 79/11 79/17 87/10	<b>likely [8]</b> 18/10 23/18 44/19 89/19 93/19 124/14 124/25 145/2	<b>Mad Cow [4]</b> 123/5 135/19 147/21 147/24	<b>Mad Cow [4]</b> 123/5 135/19 147/21 147/24	<b>marked [1]</b> 57/25
<b>legislative [2]</b> 78/15 78/19	<b>limit [1]</b> 113/14	<b>made [12]</b> 15/19 17/7 17/16 20/23 62/5 65/2 67/23 85/3 112/25 120/16 120/25 138/9	<b>made [12]</b> 15/19 17/7 17/16 20/23 62/5 65/2 67/23 85/3 112/25 120/16 120/25 138/9	<b>marker [4]</b> 111/25 112/1 122/9 122/16
<b>lend [1]</b> 139/2	<b>limited [9]</b> 73/19 76/4 78/1 101/11 103/18 125/24 126/6 130/7 131/20	<b>major [5]</b> 43/2 49/22 128/22 130/21 131/2	<b>major [5]</b> 43/2 49/22 128/22 130/21 131/2	<b>marks [1]</b> 108/25
<b>length [1]</b> 38/6	<b>line [4]</b> 10/3 89/12 94/17 95/17	<b>mailing [1]</b> 58/22	<b>mailing [1]</b> 58/22	<b>Marmot [1]</b> 75/25
<b>lens [3]</b> 93/16 94/3 132/22	<b>lines [5]</b> 41/13 68/23 68/24 69/1 98/2	<b>main [2]</b> 135/9 138/2	<b>main [2]</b> 135/9 138/2	<b>mask [2]</b> 14/15 19/20
<b>less [12]</b> 17/20 65/9 67/22 105/12 113/4 134/17 144/21 145/1 145/6 145/6 145/24 146/4	<b>link [1]</b> 142/3	<b>maintain [1]</b> 149/23	<b>maintain [1]</b> 149/23	<b>masks [3]</b> 14/12 136/16 136/22
<b>lesser [2]</b> 38/18 135/4	<b>linkage [1]</b> 142/4	<b>maintained [2]</b> 15/8 18/7	<b>maintained [2]</b> 15/8 18/7	<b>mass [5]</b> 131/11 133/16 133/17 142/9 145/24
<b>lesson [8]</b> 99/5 100/25 141/14 141/14 142/21 142/24 148/2 152/11	<b>linked [1]</b> 24/12	<b>majority [1]</b> 123/11	<b>majority [1]</b> 123/11	<b>massive [1]</b> 131/18
<b>lessons [9]</b> 59/25 67/3 69/12 77/9 93/11 98/24 99/12 125/17 141/20	<b>links [12]</b> 5/14 6/15 41/21 41/23 41/24 42/2 42/14 42/19 49/4 64/16 64/18 83/23	<b>make [8]</b> 16/8 24/2 60/5 68/9 114/22 122/1 141/18 148/4	<b>make [8]</b> 16/8 24/2 60/5 68/9 114/22 122/1 141/18 148/4	<b>material [1]</b> 76/18
<b>lest [1]</b> 27/16	<b>list [10]</b> 43/19 58/22 119/2 119/11 119/12 119/13 120/14 120/16 121/4 144/9	<b>makes [4]</b> 24/5 61/3 104/20 114/21	<b>makes [4]</b> 24/5 61/3 104/20 114/21	<b>mathematical [1]</b> 139/25
<b>let [1]</b> 70/16	<b>listed [3]</b> 113/25 130/12 146/4	<b>making [5]</b> 23/11 23/25 92/14 94/18 101/14	<b>making [5]</b> 23/11 23/25 92/14 94/18 101/14	<b>matter [3]</b> 37/10 56/25 57/8
<b>let's [1]</b> 132/11	<b>listening [1]</b> 11/16	<b>managed [2]</b> 78/4 79/15	<b>managed [2]</b> 78/4 79/15	<b>matters [7]</b> 4/4 5/15 5/21 38/12 73/16 89/10 115/11
<b>level [40]</b> 3/2 6/17 12/21 33/20 42/24 54/15 62/3 62/18 64/17 67/5 67/6 67/6 67/7 67/16 74/1 74/15 76/25 78/14 83/1 85/5 86/24 87/8 87/8 87/9 87/22 89/11 96/2 96/8 96/18 96/24 100/14 100/23 112/14 115/2 115/3 117/3 126/23 136/15 143/12 146/9	<b>literally [3]</b> 9/19 23/9 31/10	<b>management [7]</b> 34/20 39/7 41/9 44/14 45/16 54/4 74/20	<b>management [7]</b> 34/20 39/7 41/9 44/14 45/16 54/4 74/20	<b>may [66]</b> 1/14 6/24 9/3 10/9 15/6 20/12 20/12 24/25 30/4 31/25 31/25 36/3 36/8 36/10 36/15 46/1 47/4 47/13 47/15 47/16 47/18 48/7 48/18 51/2 57/2 57/15 58/14 60/11 66/9 69/22 78/3 82/23 84/10 85/2 85/16 86/11 88/14 91/9 95/17 97/5 97/16
<b>levels [9]</b> 6/15 77/25 78/9 83/24 92/1 92/1 126/21 130/6 133/10	<b>little [8]</b> 29/4 76/6 110/19 118/23 122/25 127/23 128/20 133/8	<b>mandatory [1]</b>	<b>mandatory [1]</b>	
	<b>lively [2]</b> 12/18 12/19			

<b>M</b>	5/23 9/10 9/15 9/24 10/6 25/23 30/5 30/14 68/11 68/17 68/18 <b>member [8]</b> 33/10 45/25 108/3 108/11 120/7 121/5 144/13 149/12 <b>members [13]</b> 5/4 8/7 33/15 33/16 33/18 33/19 33/20 46/2 51/22 66/19 71/18 73/1 104/21 <b>membership [3]</b> 12/9 71/21 71/24 <b>memory [1]</b> 144/22 <b>men [1]</b> 61/16 <b>mental [10]</b> 38/14 38/20 38/21 38/24 44/16 61/13 68/1 77/7 105/8 105/10 <b>mentioned [13]</b> 17/5 21/15 26/9 55/12 67/10 92/10 93/14 98/23 104/8 143/4 143/7 143/13 146/19 <b>merits [1]</b> 53/8 <b>MERS [13]</b> 14/17 14/20 16/3 116/13 119/25 120/8 121/3 121/7 125/14 128/15 128/15 129/16 129/25 <b>met [5]</b> 6/8 18/17 118/3 149/16 149/19 <b>metropolitan [1]</b> 35/19 <b>microphone [1]</b> 70/15 <b>mid [1]</b> 123/7 <b>mid-1990s [1]</b> 123/7 <b>middle [4]</b> 116/14 119/17 119/24 131/17 <b>Middle East [2]</b> 116/14 119/24 <b>Midlands [1]</b> 67/1 <b>midwife [1]</b> 21/5 <b>midwives [2]</b> 19/22 21/5 <b>might [27]</b> 19/25 20/20 26/5 26/5 26/17 38/6 39/12 48/14 60/5 64/6 89/12 89/24 109/3 109/14 118/2 119/9 122/10 123/15 133/12 134/1 134/11 136/6 136/14 139/3 139/25 141/22 144/7 <b>mile [1]</b> 57/17 <b>million [2]</b> 24/17 141/11 <b>mind [5]</b> 34/21 66/7 68/20 87/8 145/15 <b>minimum [1]</b> 63/15 <b>Minister [1]</b> 89/16 <b>ministers [2]</b> 3/9	3/16 <b>Ministry [1]</b> 140/2 <b>minority [5]</b> 91/4 91/9 97/20 98/5 104/11 <b>minute [1]</b> 20/9 <b>minutes [6]</b> 22/12 27/15 39/5 66/3 97/2 97/6 <b>minutes' [1]</b> 22/12 <b>missed [1]</b> 76/14 <b>missing [2]</b> 53/6 68/23 <b>Mitchell [7]</b> 27/12 27/13 27/19 28/15 29/25 32/3 154/7 <b>mitigate [3]</b> 76/7 89/22 93/21 <b>mitigated [2]</b> 17/18 22/4 <b>mitigating [2]</b> 19/2 77/11 <b>mitigation [3]</b> 109/2 109/4 109/10 <b>mix [1]</b> 111/17 <b>mix-up [1]</b> 111/17 <b>mobilisation [1]</b> 43/21 <b>mobilise [1]</b> 18/22 <b>mobilised [1]</b> 27/4 <b>model [4]</b> 77/7 105/8 105/11 150/17 <b>modelling [5]</b> 26/4 31/2 98/14 108/5 141/13 <b>models [1]</b> 139/25 <b>modest [1]</b> 44/2 <b>modify [1]</b> 118/8 <b>modus [1]</b> 95/9 <b>modus operandi [1]</b> 95/9 <b>moment [12]</b> 16/11 19/16 20/7 22/20 25/11 35/12 35/23 49/19 54/20 106/15 111/1 111/12 <b>moments [1]</b> 46/21 <b>money [5]</b> 52/18 124/13 124/15 124/25 125/10 <b>monger [1]</b> 148/16 <b>monitor [1]</b> 39/11 <b>monitored [1]</b> 24/14 <b>month [1]</b> 149/18 <b>months [4]</b> 58/21 140/11 140/14 143/2 <b>morbidity [1]</b> 76/9 <b>more [56]</b> 5/21 9/12 13/12 16/6 19/9 19/9 23/13 35/24 36/20 38/11 38/24 44/18 47/5 47/15 47/16 47/23 47/24 51/13 52/4 60/22 61/5 61/18	62/9 63/8 64/10 64/11 64/22 65/5 81/20 81/21 82/6 91/14 93/4 95/10 95/12 99/19 99/20 100/13 101/18 107/23 108/2 111/22 113/3 113/3 127/24 130/1 134/4 140/10 140/12 145/9 146/21 147/1 147/1 148/12 148/12 148/21 <b>morning [6]</b> 1/3 1/4 1/5 32/12 65/20 137/4 <b>Morris [4]</b> 10/16 12/1 12/3 12/6 <b>mortality [1]</b> 76/9 <b>mosquito [2]</b> 114/11 135/18 <b>mosquito-transmitter [1]</b> 135/18 <b>mosquitoes [1]</b> 114/19 <b>most [11]</b> 2/10 14/10 23/18 41/14 49/20 51/24 61/15 76/2 80/10 93/18 100/1 <b>mould [1]</b> 57/21 <b>mouth [2]</b> 139/21 140/5 <b>move [7]</b> 14/6 15/17 22/7 78/6 79/20 103/11 130/21 <b>moved [1]</b> 81/23 <b>moving [4]</b> 30/19 81/3 105/17 106/1 <b>Mr [15]</b> 1/19 13/11 32/15 52/6 68/21 97/25 98/20 104/19 112/17 140/23 149/4 149/5 149/8 152/24 154/22 <b>Mr Adeyemi [1]</b> 97/25 <b>Mr Adeyemi's [2]</b> 98/20 104/19 <b>Mr Keith [7]</b> 1/19 13/11 52/6 68/21 112/17 140/23 149/8 <b>Mr McManus [1]</b> 32/15 <b>Mr Weatherby [2]</b> 149/4 152/24 <b>Ms [23]</b> 22/16 22/17 27/11 27/12 27/13 27/19 28/15 29/25 32/3 65/16 65/17 65/18 69/15 69/20 97/4 97/5 97/9 97/14 106/7 154/6 154/7 154/12 154/17 <b>Ms Blackwell [2]</b> 69/20 97/14 <b>Ms Mitchell [5]</b> 27/12 27/19 28/15 29/25	32/3 <b>Ms Munroe [8]</b> 22/16 27/11 65/16 65/17 69/15 97/4 97/5 106/7 <b>much [55]</b> 1/11 9/12 9/23 13/17 15/14 15/14 18/8 21/10 22/22 27/9 27/11 29/12 29/18 30/7 30/14 32/3 32/4 40/19 53/24 55/25 58/9 63/12 63/25 69/13 69/16 69/17 81/20 81/21 84/25 89/17 93/4 94/14 99/14 106/3 106/5 106/9 106/11 106/13 106/17 107/11 109/12 111/15 113/4 140/10 140/12 143/10 146/4 148/12 148/12 149/6 151/23 152/23 152/25 153/1 153/4 <b>multicultural [1]</b> 98/12 <b>multiple [5]</b> 47/1 50/2 58/1 61/12 76/5 <b>multitude [1]</b> 107/13 <b>Munroe [17]</b> 22/16 22/17 22/22 27/11 65/16 65/17 65/18 65/21 69/15 97/4 97/5 97/9 97/11 106/7 154/6 154/12 154/17 <b>must [8]</b> 20/15 40/3 45/4 91/18 91/23 95/1 100/25 141/18 <b>my [119]</b> 1/4 1/21 1/23 1/24 2/2 2/25 3/2 3/22 4/16 10/1 10/13 12/4 12/5 12/11 13/25 14/23 14/24 15/17 16/2 19/17 21/11 22/10 22/18 22/22 25/13 25/16 25/22 26/10 26/18 27/6 27/10 27/10 27/14 27/14 27/17 28/15 30/13 32/8 32/14 33/25 38/25 39/25 41/25 43/11 46/3 46/6 47/1 48/14 50/7 52/3 52/10 57/16 59/9 59/11 60/7 60/22 62/23 64/8 65/15 65/15 65/19 65/20 66/6 67/20 69/2 69/14 69/18 69/22 72/11 72/17 73/12 73/25 75/16 77/18 79/19 82/23 82/25 83/4 85/20 88/16 91/18 93/23 97/1 97/4 97/8 97/10 97/24 99/16
----------	---	---	---	---



**M**  
**my... [31]** 101/7  
 101/22 102/5 102/24  
 105/22 106/6 106/10  
 106/23 108/20 112/21  
 114/14 121/21 123/23  
 125/10 125/11 134/20  
 136/7 137/3 138/2  
 139/10 140/7 140/21  
 140/22 141/4 141/23  
 144/15 145/3 148/24  
 149/22 153/1 153/6  
**my Lady [58]** 1/4  
 1/21 1/24 21/11 22/10  
 22/18 26/10 27/10  
 27/14 32/8 38/25  
 39/25 43/11 46/3 47/1  
 48/14 50/7 52/10  
 57/16 59/9 59/11 60/7  
 62/23 65/15 65/19  
 67/20 69/2 69/14  
 69/18 69/22 72/11  
 72/17 73/12 73/25  
 77/18 79/19 82/23  
 85/20 88/16 91/18  
 93/23 97/1 97/8 97/24  
 101/7 101/22 102/24  
 105/22 106/6 106/23  
 108/20 121/21 123/23  
 134/20 137/3 144/15  
 148/24 153/6  
**my Lady agrees [1]**  
 97/4  
**my Lady's [1]** 141/4  
**myself [7]** 5/1 7/9 8/6  
 8/8 27/6 82/23 131/7

**N**  
**naive [1]** 62/1  
**name [11]** 1/9 22/22  
 32/13 32/14 65/21  
 70/1 97/10 101/21  
 107/4 119/1 130/5  
**namely [1]** 7/1  
**nascent [1]** 119/8  
**nation [4]** 28/1 30/5  
 68/22 78/23  
**national [35]** 12/22  
 41/4 44/15 46/14 47/8  
 54/19 55/17 59/19  
 59/23 59/24 61/4 64/4  
 67/20 68/4 78/9 86/10  
 86/22 87/9 95/11  
 95/23 96/2 98/16  
 98/21 100/14 100/23  
 103/6 103/20 103/24  
 108/1 124/11 124/20  
 124/23 125/4 127/17  
 151/2  
**nationally [4]** 57/25  
 59/22 62/2 63/20  
**nations [23]** 3/24  
 6/25 28/3 28/5 30/20

31/23 39/19 40/8  
 53/11 53/12 59/4  
 66/10 66/19 66/21  
 66/24 67/4 67/8 67/11  
 68/3 68/12 69/6 71/18  
 137/10  
**nationwide [2]** 62/7  
 62/9  
**nature [13]** 3/7 8/14  
 13/14 30/14 44/12  
 44/24 74/21 75/21  
 87/1 89/10 114/2  
 114/3 149/14  
**near [1]** 24/12  
**necessarily [9]** 28/20  
 31/11 50/3 64/25 87/1  
 89/13 109/21 122/4  
 147/14  
**necessary [8]** 61/8  
 63/7 91/16 104/1  
 127/15 127/15 134/21  
 151/19  
**necessity [1]** 95/16  
**need [51]** 7/12 9/4  
 18/4 18/7 20/1 20/18  
 24/20 26/5 26/10  
 27/20 38/18 42/21  
 43/19 43/24 44/17  
 47/7 64/20 65/9 65/24  
 68/8 70/16 80/16  
 90/21 92/5 92/25  
 93/21 94/8 97/23  
 102/22 104/5 115/20  
 119/20 120/9 122/1  
 122/5 122/5 123/15  
 126/22 127/4 142/21  
 142/22 144/2 145/11  
 146/10 146/16 147/1  
 147/3 147/6 150/25  
 151/3 151/5  
**needed [13]** 6/14 7/7  
 21/6 22/6 61/4 78/6  
 78/23 79/16 81/6  
 102/8 115/18 116/23  
 140/2  
**needn't [1]** 116/18  
**needs [13]** 21/8 25/4  
 34/25 63/4 64/4 64/10  
 64/22 65/3 94/4 95/1  
 101/10 101/12 138/20  
**negatively [1]** 93/19  
**neighbourhood [1]**  
 103/15  
**nephrology [1]** 85/8  
**NERVTAG [1]** 108/7  
**Network [2]** 11/13  
 116/2  
**networks [2]** 10/17  
 102/25  
**never [6]** 8/1 46/1  
 62/6 122/1 128/12  
 128/15  
**nevertheless [2]**  
 58/25 136/18

**new [21]** 12/2 39/4  
 56/12 79/5 79/5 79/5  
 79/9 87/3 114/24  
 118/9 121/14 122/12  
 123/1 123/2 123/12  
 123/14 123/19 127/19  
 129/3 131/12 150/11  
**next [22]** 15/9 18/10  
 25/16 32/8 63/5 69/20  
 89/12 95/16 99/16  
 101/17 106/4 122/10  
 146/10 146/17 147/6  
 147/12 147/13 148/8  
 148/8 148/10 148/11  
 148/20  
**NHS [64]** 2/2 2/2 2/12  
 2/22 4/18 4/21 11/7  
 15/18 17/22 19/15  
 20/3 21/8 21/18 27/7  
 35/1 35/21 36/6 36/6  
 36/9 36/10 36/11 37/2  
 37/4 37/6 37/7 37/25  
 38/5 38/22 42/14  
 48/17 48/22 49/21  
 50/4 50/7 50/9 50/20  
 50/20 51/10 51/16  
 51/20 52/21 52/23  
 55/20 60/6 60/7 60/8  
 60/10 60/12 62/16  
 62/21 71/10 77/20  
 77/21 80/16 81/14  
 81/19 81/20 81/24  
 82/3 82/5 82/7 99/18  
 100/5 104/22  
**NHS England [3]**  
 52/23 60/12 71/10  
**NHS Scotland [4]**  
 2/12 2/22 4/18 4/21  
**night [2]** 5/20 19/18  
**nine [1]** 135/13  
**nine years [1]** 135/13  
**Nipah [1]** 120/3  
**no [45]** 7/9 7/14 8/8  
 8/14 8/18 8/20 13/4  
 22/20 23/8 24/20  
 28/21 28/24 29/24  
 30/17 31/6 32/2 40/16  
 40/17 46/7 56/9 57/18  
 59/17 59/18 65/9  
 68/10 68/17 68/17  
 75/8 75/8 77/4 99/23  
 111/9 111/12 118/14  
 118/14 118/14 124/16  
 131/7 131/17 131/21  
 133/13 133/16 137/24  
 140/20 145/22  
**nodding [1]** 97/17  
**nods [1]** 74/18  
**non [3]** 114/24  
 123/25 137/23  
**non-demanding [1]**  
 137/23  
**non-influenza [2]**  
 114/24 123/25

**none [2]** 118/21  
 143/9  
**nor [4]** 143/3 143/4  
 143/4 143/5  
**northern [11]** 35/21  
 35/22 37/18 37/20  
 37/21 37/25 38/2 38/8  
 41/19 41/23 53/17  
**Northern Ireland [10]**  
 35/21 35/22 37/18  
 37/20 37/21 37/25  
 38/2 38/8 41/19 41/23  
**not [169]**  
**notable [2]** 24/10  
 145/6  
**note [2]** 68/10 116/15  
**noted [1]** 30/25  
**nothing [2]** 9/25 39/4  
**notice [2]** 30/24  
 109/19  
**novel [4]** 107/21  
 123/18 127/19 131/22  
**November [3]** 4/8  
 18/23 125/20  
**November 2019 [2]**  
 4/8 18/23  
**now [44]** 10/1 10/12  
 12/21 13/12 13/15  
 15/1 22/21 23/2 28/4  
 29/19 39/6 46/21  
 53/21 56/24 62/20  
 63/8 77/15 79/13  
 80/14 80/25 82/6  
 82/16 85/9 95/8 96/4  
 98/20 100/3 100/14  
 102/18 105/18 114/23  
 121/12 122/9 128/6  
 130/10 130/23 132/2  
 132/20 136/7 136/24  
 138/10 139/16 144/13  
 148/16  
**NSRA [1]** 12/22  
**nuanced [1]** 122/25  
**nuances [1]** 39/1  
**number [34]** 9/24  
 13/10 16/14 33/22  
 33/23 36/19 37/7 37/8  
 40/21 48/25 52/8  
 53/25 63/19 78/20  
 78/22 79/3 92/21  
 108/14 108/23 110/3  
 110/5 111/6 112/9  
 112/20 125/3 129/20  
 131/14 131/20 133/11  
 141/5 147/9 149/10  
 149/16 151/9  
**numbering [3]** 40/15  
 40/17 40/18  
**numbers [4]** 18/10  
 40/16 96/15 127/11  
**numerous [1]** 54/13

**O**  
**o'clock [1]** 153/7

**obesity [1]** 112/10  
**object [1]** 144/10  
**objects [1]** 72/11  
**obligation [1]** 39/9  
**obligations [1]** 39/12  
**obliged [2]** 40/1  
 110/18  
**observe [2]** 102/14  
 104/2  
**observed [3]** 92/22  
 134/21 147/11  
**observing [2]** 102/9  
 103/23  
**obstetrician [1]** 4/11  
**obstetrician until [1]**  
 4/11  
**obvious [6]** 18/1  
 20/22 49/17 57/22  
 127/6 148/2  
**obviously [9]** 38/14  
 43/2 43/14 45/22  
 55/14 97/18 109/6  
 122/13 141/11  
**occasion [2]** 74/14  
 75/8  
**occasions [1]** 25/18  
**occupy [1]** 47/11  
**occur [2]** 45/17 92/12  
**occurred [3]** 77/7  
 87/2 105/16  
**October [1]** 71/4  
**odds [2]** 124/22  
 124/24  
**off [4]** 19/23 61/13  
 110/23 122/1  
**offer [1]** 88/15  
**offering [1]** 139/1  
**office [12]** 4/17 4/22  
 5/1 11/4 24/24 25/22  
 38/1 38/2 38/7 40/23  
 59/3 71/3  
**officer [23]** 2/6 2/10  
 2/15 2/24 3/3 3/5 3/8  
 4/9 4/23 4/25 5/2 6/4  
 9/1 10/14 18/14 34/10  
 35/14 40/4 58/10  
 104/22 137/2 144/11  
 144/18  
**officers [7]** 5/16 34/1  
 36/19 36/20 36/22  
 36/24 56/19  
**offices [3]** 67/12  
 85/24 86/16  
**officials [2]** 134/23  
 139/3  
**officio [1]** 45/24  
**often [14]** 3/23 10/3  
 10/5 30/11 43/8 48/16  
 50/21 56/1 61/15 67/7  
 74/10 82/2 88/12  
 93/23  
**Oh [1]** 97/7  
**OHID [5]** 41/12 41/16  
 55/17 87/19 100/15



<p><b>O</b></p> <p><b>OHID's [1]</b> 40/25</p> <p><b>okay [5]</b> 31/7 77/18 85/6 118/16 150/23</p> <p><b>old [5]</b> 15/21 21/16 21/19 119/25 135/14</p> <p><b>older [2]</b> 77/12 105/1</p> <p><b>on [188]</b></p> <p><b>once [4]</b> 22/3 81/15 135/9 140/5</p> <p><b>one [80]</b> 5/2 11/12 13/20 18/1 19/5 20/10 21/12 23/14 24/10 25/3 26/24 28/5 29/1 37/6 37/20 38/6 46/9 47/6 47/15 47/16 47/16 47/23 47/24 47/24 58/16 60/5 60/11 66/1 66/12 66/25 67/16 68/24 69/1 69/11 73/23 77/3 80/8 80/10 81/13 84/18 84/19 84/23 85/14 86/2 94/25 98/17 98/23 99/21 104/20 111/20 113/14 114/11 121/8 122/8 123/7 123/9 124/13 125/10 125/20 129/6 130/23 130/25 136/10 136/20 137/12 138/2 138/13 141/8 141/22 142/17 142/21 142/21 143/12 145/4 145/23 147/13 148/2 150/22 151/5 152/17</p> <p><b>one page [1]</b> 125/20</p> <p><b>one's [1]</b> 110/23</p> <p><b>onerous [5]</b> 137/21 138/9 138/12 138/16 142/5</p> <p><b>ones [10]</b> 14/9 14/10 93/18 113/25 128/16 130/16 134/4 143/4 147/19 147/20</p> <p><b>ongoing [2]</b> 41/11 82/10</p> <p><b>only [27]</b> 3/19 14/14 27/5 33/23 47/9 53/14 66/18 69/2 83/23 84/20 84/22 85/13 89/9 89/17 100/18 102/13 102/20 103/13 110/2 121/6 124/24 127/20 128/10 132/17 138/5 142/21 147/20</p> <p><b>ONS [1]</b> 16/16</p> <p><b>onset [5]</b> 4/7 7/25 8/18 15/4 18/4</p> <p><b>onwards [1]</b> 58/12</p> <p><b>open [4]</b> 40/13 55/8 71/21 72/15</p> <p><b>openly [1]</b> 12/12</p>	<p><b>operandi [1]</b> 95/9</p> <p><b>operate [3]</b> 36/1 83/1 87/12</p> <p><b>operated [1]</b> 136/2</p> <p><b>operating [2]</b> 79/10 80/14</p> <p><b>operation [2]</b> 15/14 30/17</p> <p><b>Operation Cygnus [1]</b> 30/17</p> <p><b>opinion [2]</b> 60/25 117/15</p> <p><b>opportunities [3]</b> 51/1 76/15 96/16</p> <p><b>opportunity [6]</b> 12/18 23/6 74/8 93/10 100/5 105/19</p> <p><b>opposed [3]</b> 51/9 128/24 145/9</p> <p><b>optimal [1]</b> 67/22</p> <p><b>or [173]</b></p> <p><b>order [11]</b> 14/5 15/5 15/8 23/17 65/10 88/11 91/15 95/19 115/12 115/21 118/8</p> <p><b>ordered [1]</b> 57/3</p> <p><b>ordinate [1]</b> 149/25</p> <p><b>ordinated [1]</b> 16/4</p> <p><b>ordinating [4]</b> 43/1 44/7 45/8 54/10</p> <p><b>ordination [2]</b> 15/25 87/4</p> <p><b>organisation [5]</b> 80/4 83/16 94/20 100/2 128/10</p> <p><b>organisational [2]</b> 49/24 103/6</p> <p><b>organisations [19]</b> 39/21 46/18 76/25 79/5 80/15 81/4 81/24 82/9 83/18 87/10 87/24 91/4 93/2 94/20 97/20 100/12 100/14 103/20 103/24</p> <p><b>organogram [1]</b> 11/8</p> <p><b>orientation [1]</b> 103/14</p> <p><b>original [1]</b> 119/12</p> <p><b>orthodoxy [1]</b> 152/15</p> <p><b>orthopaedic [1]</b> 21/21</p> <p><b>other [70]</b> 3/24 5/12 5/13 5/15 5/24 10/2 10/8 15/15 16/1 16/5 18/12 22/8 31/16 31/23 33/17 35/4 42/1 44/22 47/2 50/25 55/19 59/8 60/21 62/19 66/5 69/6 71/17 72/1 72/16 74/24 77/5 77/21 78/4 83/17 83/18 84/14 84/25 87/24 94/22 96/3 99/10 99/18 102/16</p>	<p>104/8 104/9 108/14 110/3 114/22 116/5 117/23 120/1 122/11 125/12 129/1 129/4 134/11 134/12 134/16 134/16 135/3 142/20 143/4 143/6 143/20 145/9 146/1 146/17 148/4 151/18 152/6</p> <p><b>others [10]</b> 8/7 24/23 46/21 47/23 52/2 60/15 99/20 99/24 120/17 152/11</p> <p><b>ought [1]</b> 60/20</p> <p><b>our [70]</b> 6/8 9/24 10/12 15/7 15/7 15/11 15/12 15/14 16/9 16/9 17/19 17/22 18/8 18/9 18/16 19/15 21/8 23/22 23/25 31/10 33/21 39/23 43/8 46/2 49/13 50/24 56/18 56/21 57/14 57/15 59/8 62/2 67/2 69/12 72/11 72/25 73/13 75/19 91/20 92/7 92/13 92/20 92/22 92/25 93/15 93/16 94/6 94/25 95/6 95/23 96/21 96/23 98/24 105/11 105/14 105/18 106/1 110/7 110/17 112/14 117/1 117/13 119/25 122/1 129/21 132/15 133/4 138/6 143/3 150/22</p> <p><b>ourselves [9]</b> 25/5 66/23 67/24 78/25 90/15 115/21 116/19 138/22 141/15</p> <p><b>out [42]</b> 9/22 10/4 10/5 11/8 13/24 14/7 14/18 24/11 28/21 39/13 40/24 46/1 53/4 53/25 56/10 57/4 57/8 58/23 63/19 69/3 90/12 91/15 93/9 109/14 116/1 119/4 120/14 123/3 126/2 126/9 130/24 133/4 135/4 137/6 139/8 139/9 140/13 141/13 144/7 146/6 146/20 146/24</p> <p><b>outbreak [25]</b> 14/17 18/19 20/20 34/20 39/7 41/10 44/3 44/10 44/13 44/20 45/17 54/4 58/16 114/8 123/19 126/20 127/4 127/9 128/2 129/2 129/7 131/3 131/5 133/16 139/22</p> <p><b>outbreaks [18]</b> 18/19</p>	<p>39/10 39/11 41/7 54/3 109/23 113/11 113/12 114/25 119/8 126/13 126/19 126/25 128/16 129/13 130/16 130/21 131/9</p> <p><b>outcome [2]</b> 88/7 125/6</p> <p><b>outcomes [7]</b> 43/25 76/20 93/13 108/25 110/9 113/15 125/5</p> <p><b>outdoor [1]</b> 113/3</p> <p><b>outline [1]</b> 49/22</p> <p><b>outpatients [1]</b> 21/22</p> <p><b>outputs [2]</b> 31/22 142/13</p> <p><b>outreach [1]</b> 90/16</p> <p><b>outside [2]</b> 11/6 50/21</p> <p><b>over [17]</b> 72/9 82/1 82/3 86/24 87/16 87/24 97/3 97/21 102/3 108/1 112/21 126/8 135/7 138/1 141/11 144/5 151/24</p> <p><b>overall [5]</b> 10/24 92/3 100/18 108/21 108/24</p> <p><b>overcome [1]</b> 83/23</p> <p><b>overlap [1]</b> 49/8</p> <p><b>overlaps [1]</b> 43/12</p> <p><b>overly [1]</b> 118/7</p> <p><b>overridden [1]</b> 63/1</p> <p><b>overseas [1]</b> 71/19</p> <p><b>overstaying [1]</b> 27/17</p> <p><b>overview [1]</b> 149/23</p> <p><b>overwhelming [1]</b> 62/8</p> <p><b>owed [1]</b> 2/21</p> <p><b>own [9]</b> 6/1 8/11 9/3 19/17 21/6 36/6 56/2 110/8 151/19</p>	<p><b>Pakistani [1]</b> 98/6</p> <p><b>pan [1]</b> 66/17</p> <p><b>pan-UK [1]</b> 66/17</p> <p><b>pandemic [169]</b></p> <p><b>pandemics [8]</b> 65/4 73/11 75/21 79/9 91/16 123/25 144/2 148/6</p> <p><b>paper [6]</b> 115/3 115/3 115/19 115/23 121/12 134/24</p> <p><b>papers [4]</b> 69/4 107/23 110/5 130/25</p> <p><b>paperwork [1]</b> 123/22</p> <p><b>paradigm [1]</b> 105/9</p> <p><b>paradigms [1]</b> 74/13</p> <p><b>paragraph [23]</b> 13/22 24/20 26/11 27/22 29/8 40/10 40/12 40/17 40/22 41/19 42/20 53/23 54/24 55/1 55/4 63/18 63/23 64/2 65/24 98/8 104/19 126/3 126/11</p> <p><b>paragraph 100 [1]</b> 53/23</p> <p><b>paragraph 117 [1]</b> 54/24</p> <p><b>paragraph 119 [1]</b> 55/1</p> <p><b>paragraph 120 [1]</b> 55/4</p> <p><b>paragraph 14 [1]</b> 26/11</p> <p><b>paragraph 17 [1]</b> 104/19</p> <p><b>paragraph 201 [1]</b> 42/20</p> <p><b>paragraph 21 [1]</b> 24/20</p> <p><b>paragraph 253 [3]</b> 63/18 63/23 64/2</p> <p><b>paragraph 46 [1]</b> 65/24</p> <p><b>paragraph 7 [1]</b> 13/22</p> <p><b>paragraph 8 [1]</b> 27/22</p> <p><b>paragraph 94 [2]</b> 40/10 40/12</p> <p><b>paragraph 95 [1]</b> 40/22</p> <p><b>Paragraph 96 [1]</b> 41/19</p> <p><b>paragraphs [1]</b> 68/9</p> <p><b>paragraphs 41 [1]</b> 68/9</p> <p><b>parallel [2]</b> 56/6 60/3</p> <p><b>paramount [1]</b> 15/21</p> <p><b>parcel [1]</b> 100/22</p> <p><b>parcels [1]</b> 54/25</p> <p><b>pardon [1]</b> 142/22</p> <p><b>part [36]</b> 2/16 5/20</p>
--	---	---	---	--

<b>P</b>	122/10 123/19 125/5 127/9 131/9	<b>permissions [2]</b> 142/19 143/16	91/10 91/16 93/7 93/15 93/15 93/22	<b>population-based [1]</b> 29/15
<b>part... [34]</b> 8/8 8/15 9/13 11/23 24/23 27/25 38/2 41/9 41/16 48/6 51/5 54/14 58/9 58/25 60/21 63/3 67/19 74/6 75/9 81/11 88/25 95/8 95/23 99/15 100/22 101/2 102/13 106/4 111/24 115/23 127/14 127/15 134/21 151/1	<b>pathogens [2]</b> 107/17 107/21	<b>permitted [1]</b> 109/12	95/4 96/8 96/10 96/23 98/9 98/18 104/25 105/5 105/10 112/23 132/7	<b>populations [8]</b> 73/8 75/23 90/22 101/9 101/12 105/20 113/4 128/18
<b>participant [1]</b> 32/22	<b>patient [3]</b> 17/25 137/24 146/6	<b>person [1]</b> 138/1	<b>plans [12]</b> 29/14 39/7 43/9 58/16 62/2 89/25 90/1 90/6 90/7 95/3 134/18 135/16	<b>populus [1]</b> 38/19
<b>participate [1]</b> 74/10	<b>patients [2]</b> 21/24 130/9	<b>personal [5]</b> 5/3 6/19 24/25 46/6 54/7	<b>play [2]</b> 4/12 100/16	<b>pose [1]</b> 67/12
<b>Participation [1]</b> 59/24	<b>Patrick [2]</b> 23/5 23/10	<b>personally [7]</b> 8/9 25/17 25/19 25/22 26/22 49/2 136/21	<b>played [1]</b> 80/20	<b>posed [3]</b> 117/16 120/7 120/23
<b>particular [28]</b> 15/24 16/1 23/4 25/8 28/5 28/18 45/3 52/6 67/12 86/12 107/17 109/21 110/8 111/8 111/19 112/4 113/18 114/19 115/8 129/13 129/13 132/22 134/1 136/13 137/19 138/3 139/3 139/24	<b>pattern [2]</b> 42/4 91/7	<b>persons [1]</b> 5/13	<b>plausible [1]</b> 59/21	<b>position [10]</b> 6/4 7/6 8/10 34/18 58/2 71/5 120/5 121/2 139/5 140/15
<b>participate [1]</b> 74/10	<b>patterns [4]</b> 102/8 103/23 104/1 105/13	<b>perspectives [3]</b> 90/6 90/7 95/2	<b>player [1]</b> 67/18	<b>positioned [1]</b> 150/4
<b>Participation [1]</b> 59/24	<b>paucity [4]</b> 23/12 23/23 25/24 26/2	<b>pertinent [1]</b> 19/24	<b>players [1]</b> 79/5	<b>positive [1]</b> 143/8
<b>particular [28]</b> 15/24 16/1 23/4 25/8 28/5 28/18 45/3 52/6 67/12 86/12 107/17 109/21 110/8 111/8 111/19 112/4 113/18 114/19 115/8 129/13 129/13 132/22 134/1 136/13 137/19 138/3 139/3 139/24	<b>pause [6]</b> 35/12 49/10 69/21 77/16 110/16 114/9	<b>phase [3]</b> 133/22 133/23 139/18	<b>please [39]</b> 1/9 1/13 7/15 15/1 22/24 32/9 32/13 34/16 35/24 39/7 40/10 42/20 45/7 49/22 50/11 53/21 53/24 66/7 69/22 70/8 70/14 77/2 77/16 82/16 82/22 89/24 106/24 107/3 108/18 110/19 111/8 114/9 115/1 126/2 127/25 136/25 141/21 144/12 153/7	<b>possibilities [1]</b> 78/2
<b>particularly [22]</b> 8/13 11/21 12/13 12/18 29/15 44/3 49/6 49/13 55/15 56/24 60/14 98/4 110/22 111/23 114/7 125/16 128/9 136/21 142/4 142/5 145/17 150/13	<b>pay [4]</b> 2/2 50/10 50/14 113/17	<b>phases [3]</b> 23/12 132/9 133/22	<b>phenomenal [1]</b> 96/1	<b>possibility [8]</b> 122/6 123/18 123/20 126/25 127/18 128/21 130/20 131/4
<b>partly [5]</b> 59/17 59/17 59/18 59/18 69/5	<b>paying [2]</b> 50/18 50/19	<b>PHE [1]</b> 46/20	<b>phone [2]</b> 5/23 6/13	<b>possible [7]</b> 112/8 122/2 125/12 133/13 136/5 136/12 148/11
<b>partner [1]</b> 104/5	<b>payment [1]</b> 52/24	<b>phenomenal [1]</b> 96/1	<b>phrase [2]</b> 82/17 133/4	<b>possibly [3]</b> 110/22 124/8 148/7
<b>partners [2]</b> 90/4 95/12	<b>PCTs [1]</b> 81/19	<b>physical [1]</b> 61/12	<b>pick [1]</b> 61/1	<b>post [9]</b> 29/21 80/16 81/23 111/9 133/22 133/23 139/13 150/8 150/10
<b>partnership [14]</b> 45/2 46/6 46/17 46/23 46/25 47/17 47/18 47/22 47/25 60/20 74/23 95/6 96/16 112/22	<b>pedestal [1]</b> 146/9	<b>physically [1]</b> 58/23	<b>picked [1]</b> 63/20	<b>post-Covid [2]</b> 111/9 139/13
<b>partnerships [5]</b> 6/16 47/9 64/18 64/20 82/11	<b>penultimate [1]</b> 63/23	<b>physicians [1]</b> 72/7	<b>piece [2]</b> 121/12 134/24	<b>postgraduate [4]</b> 71/23 72/2 72/15 82/25
<b>parts [10]</b> 5/12 7/8 51/3 53/11 57/3 58/21 62/17 80/23 99/6 99/17	<b>people [36]</b> 3/12 4/24 9/24 10/2 12/10 12/12 12/12 12/15 12/16 17/13 17/15 17/17 20/11 20/23 21/2 22/5 22/6 23/16 27/7 30/6 30/7 41/12 46/12 54/13 58/17 61/10 61/18 77/12 99/24 102/3 104/9 130/19 135/15 141/12 144/9 146/21	<b>pick [1]</b> 61/1	<b>pieces [1]</b> 44/22	<b>posts [2]</b> 10/8 10/8
<b>party [1]</b> 8/14	<b>per [2]</b> 53/16 53/18	<b>pigeon [1]</b> 131/9	<b>pigeon-holing [1]</b> 131/9	<b>pot [1]</b> 144/23
<b>passage [3]</b> 58/3 82/19 97/16	<b>perceived [1]</b> 78/13	<b>pillar [1]</b> 39/8	<b>pillars [2]</b> 34/20 83/4	<b>potential [14]</b> 21/7 76/8 79/15 126/9 127/1 127/2 127/10 128/8 128/10 131/19 131/23 131/23 147/19 148/6
<b>past [1]</b> 139/19	<b>perennial [1]</b> 109/19	<b>pipelines [1]</b> 143/16	<b>place [29]</b> 16/15 16/20 16/24 17/1 17/8 17/9 39/11 52/4 83/24 86/4 87/4 90/9 90/14 91/23 99/4 105/10 115/12 118/5 125/14 127/14 133/21 136/18 141/6 142/14 142/17 142/18 142/23 142/25 142/25	<b>potentially [2]</b> 135/23 139/12
<b>pathogen [8]</b> 19/3 118/18 122/19 122/21 122/22 127/19 131/22 131/22	<b>perfectly [1]</b> 59/21	<b>placement [1]</b> 113/8	<b>placed [6]</b> 11/7 34/22 128/25 129/1 137/9 139/6	<b>power [5]</b> 45/9 45/10 53/18 62/24 110/2
<b>pathogenic [12]</b> 44/3 113/11 113/12 114/25 118/17 119/8 120/1	<b>performed [1]</b> 112/19	<b>plain [1]</b> 61/3	<b>places [1]</b> 46/3	<b>PPE [2]</b> 14/11 14/14
	<b>perhaps [29]</b> 2/1 5/4 14/3 38/11 40/9 43/10 44/2 46/11 52/7 52/10 56/14 61/23 75/20 81/5 101/3 101/18 101/24 113/12 113/22 120/22 123/21 127/7 130/4 130/8 134/22 145/6 145/9 145/10 152/11	<b>plan [12]</b> 6/17 43/18 59/19 77/4 77/8 93/23 132/24 132/25 133/2 135/12 146/13 147/22	<b>planning [38]</b> 21/7 23/11 35/7 42/25 43/4 43/6 47/8 61/4 62/10 64/2 64/3 64/11 73/21 76/23 88/4 88/23 89/1 89/7 89/9 89/18 89/21	<b>practical [4]</b> 11/24 15/20 19/9 31/9
	<b>period [4]</b> 102/3 126/8 133/9 134/19	<b>planned [1]</b> 79/21	<b>planning [38]</b> 21/7 23/11 35/7 42/25 43/4 43/6 47/8 61/4 62/10 64/2 64/3 64/11 73/21 76/23 88/4 88/23 89/1 89/7 89/9 89/18 89/21	<b>practically [2]</b> 18/6 44/1
	<b>permanent [1]</b> 89/5	<b>places [1]</b> 46/3	<b>placed [6]</b> 11/7 34/22 128/25 129/1 137/9 139/6	<b>practice [18]</b> 4/7 39/20 39/22 45/12 45/21 67/6 75/1 83/5 84/1 84/14 84/19 85/11 85/11 86/21 87/7 88/16 88/25 104/4
	<b>permanent secretary [1]</b> 89/5	<b>placing [1]</b> 113/8	<b>plains [1]</b> 61/3	<b>practices [2]</b> 24/18 86/15
	<b>permanently [1]</b> 149/20	<b>plan [12]</b> 6/17 43/18 59/19 77/4 77/8 93/23 132/24 132/25 133/2 135/12 146/13 147/22	<b>plain [1]</b> 61/3	<b>practising [1]</b> 85/7
	<b>permission [6]</b> 1/20 21/11 22/10 65/15 97/1 148/24	<b>planned [1]</b> 79/21	<b>planning [38]</b> 21/7 23/11 35/7 42/25 43/4 43/6 47/8 61/4 62/10 64/2 64/3 64/11 73/21 76/23 88/4 88/23 89/1 89/7 89/9 89/18 89/21	<b>practitioner [2]</b> 71/22 101/6

<b>P</b>	28/12 99/17 101/2 115/12 116/24 138/13	<b>produce [4]</b> 116/4 117/14 119/13 142/13	<b>Professor Kevin Fenton [2]</b> 69/23 70/1	11/13 35/7 35/9 39/23 41/2 41/8 43/11 43/18 43/24 44/25 45/12 45/15 63/12 64/24 78/15 79/6 81/4 82/16 83/5 83/13 83/17 83/21 84/11 85/16 125/19 125/23 139/8 139/10 140/25 142/6 144/4
<b>practitioners [14]</b> 71/17 72/13 72/18 72/22 73/14 80/13 80/14 83/18 83/20 96/1 96/7 96/12 96/17 141/10	<b>presume [1]</b> 42/13 <b>pretty [3]</b> 57/22 110/12 124/14 <b>prevent [1]</b> 126/8 <b>preventative [1]</b> 88/22 <b>prevention [7]</b> 38/25 48/24 54/1 81/8 86/5 94/12 108/25	<b>produced [7]</b> 58/15 92/6 110/21 128/16 141/25 142/15 143/14 <b>producing [2]</b> 90/3 92/20 <b>production [4]</b> 4/3 15/12 89/25 94/13 <b>profession [1]</b> 107/12 <b>professional [8]</b> 33/7 60/24 61/19 71/16 72/21 81/14 97/19 147/10 <b>professionals [4]</b> 66/1 72/16 97/22 102/25 <b>professor [82]</b> 5/8 10/15 10/16 12/1 12/3 23/10 24/4 24/8 24/9 24/12 24/19 25/8 25/15 25/19 25/21 26/9 26/12 26/24 28/9 28/17 30/3 32/9 32/10 32/19 40/15 44/1 45/21 46/15 49/17 50/11 59/1 59/10 64/1 65/20 65/23 66/5 66/6 68/7 69/13 69/16 69/23 69/24 70/1 70/4 70/18 82/17 84/2 93/9 95/14 97/10 98/20 99/15 101/2 101/16 101/23 103/5 104/18 105/7 106/3 106/8 106/9 106/24 106/25 107/6 107/12 107/12 110/16 115/7 118/15 120/18 121/22 136/25 141/15 144/12 148/23 149/3 149/7 152/23 152/25 154/9 154/14 154/19	<b>Professor Mark Woolhouse [1]</b> 106/24 <b>Professor McManus [6]</b> 65/20 65/23 66/6 68/7 69/13 69/16 <b>Professor Sir [5]</b> 5/8 28/9 28/17 30/3 59/1 <b>Professor Sir Chris Whitty [1]</b> 66/5 <b>Professor Sir Patrick Vallance [1]</b> 23/10 <b>Professor Whitworth [1]</b> 121/22 <b>Professor Woolhouse [8]</b> 24/4 24/9 24/19 25/8 25/15 25/19 25/21 152/25 <b>professorial [1]</b> 153/1 <b>professors [2]</b> 23/4 75/25 <b>Professors Marmot [1]</b> 75/25 <b>programme [6]</b> 72/15 73/15 94/1 142/9 146/23 146/24 <b>programmes [14]</b> 86/5 86/11 86/12 88/20 92/6 92/8 94/7 94/12 94/13 94/14 95/7 105/24 105/25 144/7 <b>progress [1]</b> 24/15 <b>project [5]</b> 137/23 138/3 141/7 141/9 141/23 <b>projected [1]</b> 31/2 <b>projects [1]</b> 141/6 <b>prolonged [1]</b> 126/8 <b>promising [2]</b> 75/1 86/15 <b>promote [2]</b> 35/10 94/21 <b>promotion [1]</b> 85/18 <b>promulgation [1]</b> 4/3 <b>propensity [1]</b> 129/17 <b>proper [4]</b> 39/10 39/10 139/7 139/15 <b>properly [1]</b> 98/11 <b>proposition [1]</b> 64/10 <b>propositions [1]</b> 113/21 <b>prosaically [1]</b> 38/11 <b>protect [3]</b> 35/10 60/16 73/8 <b>protected [3]</b> 76/16 99/10 104/8 <b>protecting [1]</b> 77/21 <b>protection [32]</b> 10/12	<b>protective [2]</b> 54/7 61/16 <b>protocols [1]</b> 143/2 <b>prove [1]</b> 136/17 <b>provide [11]</b> 1/9 4/4 10/9 33/17 38/21 48/21 65/10 74/2 75/11 103/20 140/1 <b>provided [15]</b> 1/16 32/15 32/20 32/23 39/17 49/1 70/6 74/14 76/2 76/6 77/19 81/19 97/1 107/7 142/7 <b>provider [1]</b> 38/5 <b>providers [1]</b> 48/12 <b>provides [1]</b> 86/3 <b>providing [3]</b> 48/18 48/24 54/12 <b>provision [3]</b> 48/11 54/25 57/9 <b>provisionally [1]</b> 97/1 <b>Psychiatric [1]</b> 104/23 <b>public [227]</b> <b>public's [1]</b> 72/24 <b>publication [1]</b> 7/25 <b>published [7]</b> 74/5 75/11 107/23 108/15 110/6 111/3 143/18 <b>pull [1]</b> 3/24 <b>pulled [1]</b> 12/10 <b>pulling [1]</b> 87/6 <b>purely [1]</b> 38/5 <b>purpose [4]</b> 78/17 110/20 115/19 149/23 <b>purposes [13]</b> 11/23 12/24 26/10 27/21 58/7 116/19 117/13 137/12 137/20 139/15 141/12 141/18 145/4 <b>pursued [1]</b> 121/24 <b>put [17]</b> 16/15 16/20 23/2 39/23 47/7 60/6 111/16 124/13 124/15 138/10 138/20 139/9 140/23 141/6 143/17 146/8 152/17 <b>putting [5]</b> 57/16 99/4 125/10 136/16 145/22 <b>puzzling [1]</b> 39/2
<b>pre [7]</b> 59/12 63/23 112/23 114/25 133/21 136/19 137/11 <b>pre-Covid [4]</b> 114/25 133/21 136/19 137/11 <b>pre-existed [1]</b> 59/12 <b>pre-pandemic [1]</b> 112/23 <b>pre-penultimate [1]</b> 63/23 <b>precise [1]</b> 89/10 <b>predict [1]</b> 113/15 <b>predictive [3]</b> 110/2 110/14 110/22 <b>predictor [1]</b> 110/9 <b>preface [1]</b> 97/15 <b>premature [1]</b> 111/13 <b>premises [1]</b> 50/22 <b>preparation [2]</b> 53/22 54/1 <b>preparatory [1]</b> 98/10 <b>prepare [7]</b> 15/9 59/19 115/21 135/15 135/21 147/24 148/2 <b>prepared [11]</b> 7/17 7/24 15/6 19/7 20/19 115/4 115/23 126/22 129/8 133/5 148/20 <b>preparedness [36]</b> 7/1 7/2 7/21 8/12 27/23 42/25 43/3 53/22 63/19 69/11 73/21 73/25 89/1 109/20 111/17 111/24 112/5 112/13 112/14 113/17 123/22 124/4 132/24 132/25 133/2 135/12 135/16 144/14 144/20 147/22 149/2 149/12 149/24 150/7 150/25 151/7 <b>prepares [1]</b> 147/23 <b>prescient [1]</b> 20/8 <b>prescription [1]</b> 55/1 <b>present [7]</b> 115/10 115/10 115/14 116/19 116/22 119/13 126/23 <b>presented [3]</b> 114/4 116/21 117/2 <b>presenting [1]</b> 120/20 <b>president [5]</b> 32/22 33/4 70/18 71/12 104/23 <b>pressed [1]</b> 20/13 <b>presumably [7]</b> 17/7	<b>problem [11]</b> 58/13 81/17 86/23 88/8 114/4 124/18 124/19 128/13 134/25 139/20 139/24 <b>problems [9]</b> 18/2 23/13 50/1 55/21 67/13 81/13 87/1 112/10 137/4 <b>procedures [5]</b> 18/9 126/17 132/7 137/20 140/20 <b>proceedings [2]</b> 32/22 106/21 <b>process [19]</b> 12/20 12/23 12/23 12/24 13/16 14/5 16/19 16/20 18/8 20/22 31/4 64/3 119/5 131/8 132/2 136/2 137/25 138/6 146/25 <b>processes [4]</b> 16/15 39/10 141/2 141/3	<b>Professor Andrew Morris [3]</b> 10/16 12/1 12/3 <b>Professor Aziz [1]</b> 24/12 <b>Professor Aziz Sheikh [1]</b> 24/8 <b>Professor Crossman [3]</b> 26/9 26/12 26/24 <b>Professor David Crossman [1]</b> 10/15 <b>Professor Fenton [15]</b> 70/4 82/17 93/9 95/14 97/10 98/20 99/15 101/2 101/16 101/23 103/5 104/18 105/7 106/3 106/9 <b>Professor Fenton's [1]</b> 106/8 <b>Professor Jim McManus [1]</b> 32/9	<b>Professor Kevin Fenton [2]</b> 69/23 70/1 <b>Professor Mark Woolhouse [1]</b> 106/24 <b>Professor McManus [6]</b> 65/20 65/23 66/6 68/7 69/13 69/16 <b>Professor Sir [5]</b> 5/8 28/9 28/17 30/3 59/1 <b>Professor Sir Chris Whitty [1]</b> 66/5 <b>Professor Sir Patrick Vallance [1]</b> 23/10 <b>Professor Whitworth [1]</b> 121/22 <b>Professor Woolhouse [8]</b> 24/4 24/9 24/19 25/8 25/15 25/19 25/21 152/25 <b>professorial [1]</b> 153/1 <b>professors [2]</b> 23/4 75/25 <b>Professors Marmot [1]</b> 75/25 <b>programme [6]</b> 72/15 73/15 94/1 142/9 146/23 146/24 <b>programmes [14]</b> 86/5 86/11 86/12 88/20 92/6 92/8 94/7 94/12 94/13 94/14 95/7 105/24 105/25 144/7 <b>progress [1]</b> 24/15 <b>project [5]</b> 137/23 138/3 141/7 141/9 141/23 <b>projected [1]</b> 31/2 <b>projects [1]</b> 141/6 <b>prolonged [1]</b> 126/8 <b>promising [2]</b> 75/1 86/15 <b>promote [2]</b> 35/10 94/21 <b>promotion [1]</b> 85/18 <b>promulgation [1]</b> 4/3 <b>propensity [1]</b> 129/17 <b>proper [4]</b> 39/10 39/10 139/7 139/15 <b>properly [1]</b> 98/11 <b>proposition [1]</b> 64/10 <b>propositions [1]</b> 113/21 <b>prosaically [1]</b> 38/11 <b>protect [3]</b> 35/10 60/16 73/8 <b>protected [3]</b> 76/16 99/10 104/8 <b>protecting [1]</b> 77/21 <b>protection [32]</b> 10/12	

<b>Q</b>	100/21 108/25 136/5 136/13 <b>ranges [1]</b> 64/6 <b>ranging [1]</b> 12/10 <b>ranked [2]</b> 108/21 111/7 <b>ranking [4]</b> 108/19 109/15 109/16 112/18 <b>rankings [5]</b> 109/18 109/20 111/5 111/10 111/14 <b>rapid [6]</b> 15/12 109/1 109/4 109/9 126/19 129/10 <b>rapidly [5]</b> 16/6 19/4 24/1 27/4 57/21 <b>rates [1]</b> 128/23 <b>rather [8]</b> 37/16 38/4 38/11 52/13 60/3 68/18 91/13 132/14 <b>rational [1]</b> 124/18 <b>rationale [1]</b> 105/19 <b>re [2]</b> 19/1 76/11 <b>re-instigated [1]</b> 19/1 <b>re-review [1]</b> 76/11 <b>reach [5]</b> 58/23 88/11 88/13 88/21 90/12 <b>reached [1]</b> 8/2 <b>react [3]</b> 26/6 95/16 95/20 <b>reactive [2]</b> 132/15 152/2 <b>read [5]</b> 10/5 23/7 28/21 53/3 56/2 <b>read-out [2]</b> 10/5 28/21 <b>readily [1]</b> 4/20 <b>readiness [2]</b> 14/16 19/12 <b>reading [7]</b> 13/11 14/24 25/11 28/8 30/16 69/4 97/16 <b>ready [2]</b> 59/15 142/25 <b>real [3]</b> 7/9 52/22 53/4 <b>realisation [1]</b> 101/3 <b>realise [1]</b> 139/17 <b>realised [1]</b> 78/6 <b>reality [2]</b> 19/13 111/11 <b>really [17]</b> 10/5 18/18 23/25 23/25 28/4 64/7 81/16 83/15 86/2 86/16 92/14 93/10 96/20 103/6 104/3 119/13 147/3 <b>realtime [1]</b> 24/13 <b>reason [4]</b> 57/20 59/17 116/7 142/2 <b>reasonable [1]</b> 109/24 <b>reasonably [2]</b> 41/6 42/11	<b>reasons [9]</b> 11/24 60/25 61/9 64/21 78/20 103/12 127/20 142/18 142/20 <b>rebuilt [3]</b> 82/1 82/7 82/12 <b>recalibrated [1]</b> 12/23 <b>recalibrating [1]</b> 54/7 <b>recall [22]</b> 7/11 7/14 8/10 8/15 12/25 13/24 14/8 14/17 14/21 14/23 25/11 25/17 25/18 25/23 26/2 26/3 28/22 30/15 32/1 121/3 121/7 130/1 <b>receive [1]</b> 41/8 <b>received [3]</b> 8/17 91/2 146/8 <b>receiving [2]</b> 25/11 51/8 <b>recent [1]</b> 100/1 <b>recently [1]</b> 130/1 <b>recipe [1]</b> 48/2 <b>recipient [1]</b> 31/24 <b>recognise [5]</b> 29/21 75/18 75/23 102/12 147/6 <b>recognised [6]</b> 114/25 115/17 117/3 117/19 122/14 131/5 <b>recognising [4]</b> 92/2 94/9 95/21 96/3 <b>recognition [2]</b> 65/4 127/8 <b>recollection [1]</b> 28/15 <b>recommend [1]</b> 64/1 <b>recommendations</b> <b>[3]</b> 13/23 14/2 65/14 <b>record [1]</b> 27/21 <b>recorded [1]</b> 1/15 <b>records [4]</b> 68/10 68/18 142/3 142/3 <b>RECOVERY [1]</b> 16/20 <b>RECOVERY Trial [1]</b> 16/20 <b>redeploy [1]</b> 60/13 <b>redesigning [1]</b> 94/3 <b>redraft [1]</b> 7/13 <b>reduce [2]</b> 41/1 119/7 <b>reduced [3]</b> 82/15 83/12 119/12 <b>reduction [3]</b> 38/25 53/18 81/15 <b>reductions [1]</b> 53/10 <b>refer [3]</b> 13/21 33/21 76/1 <b>reference [16]</b> 24/5 26/8 26/10 34/17 62/5 65/2 68/9 97/24 101/22 104/20 126/24 127/3 151/13 151/17	152/6 152/10 <b>referenced [1]</b> 115/5 <b>references [3]</b> 24/9 98/15 120/3 <b>referred [7]</b> 4/2 35/14 38/11 46/20 63/6 147/17 149/3 <b>referring [1]</b> 138/13 <b>refers [1]</b> 126/12 <b>reflect [4]</b> 79/11 91/18 102/18 108/24 <b>reflected [1]</b> 78/24 <b>reflection [2]</b> 75/17 76/11 <b>reflections [1]</b> 63/19 <b>reflective [2]</b> 121/25 125/4 <b>regard [4]</b> 75/6 90/2 109/14 132/25 <b>regarded [3]</b> 130/4 131/11 146/5 <b>regarding [1]</b> 98/16 <b>regional [22]</b> 41/12 41/15 41/16 46/18 46/20 47/10 71/2 71/10 78/9 82/4 82/5 86/1 86/13 86/16 86/19 86/24 87/8 87/13 87/16 87/21 87/22 96/2 <b>regions [1]</b> 85/24 <b>register [1]</b> 43/9 <b>registered [4]</b> 24/17 34/7 63/15 72/5 <b>regret [1]</b> 67/19 <b>regular [8]</b> 5/18 9/10 9/10 27/23 41/6 41/11 42/11 59/2 <b>regularised [1]</b> 63/9 <b>regularly [6]</b> 6/9 42/9 42/17 66/1 66/16 149/15 <b>reignited [1]</b> 132/13 <b>relate [2]</b> 38/17 110/4 <b>related [8]</b> 4/4 38/13 38/14 73/16 77/11 129/24 130/2 136/10 <b>relating [2]</b> 13/8 141/11 <b>relation [20]</b> 4/2 4/12 13/7 16/12 16/18 22/25 30/22 35/25 41/22 49/7 50/7 52/24 54/6 54/8 54/24 55/3 64/16 73/23 104/10 150/12 <b>relations [1]</b> 5/12 <b>relationship [8]</b> 4/16 5/17 6/7 10/15 30/20 31/16 81/25 110/7 <b>relationships [5]</b> 6/19 46/4 46/5 48/4 87/3 <b>relatively [2]</b> 125/25	133/7 <b>relayed [1]</b> 9/22 <b>release [1]</b> 109/1 <b>relevancy [1]</b> 33/24 <b>relevant [12]</b> 5/15 19/24 20/24 31/19 44/15 57/3 65/25 109/6 114/1 133/23 135/20 150/1 <b>reliability [1]</b> 113/10 <b>reliance [2]</b> 58/6 113/9 <b>relied [1]</b> 136/13 <b>relies [1]</b> 67/17 <b>reliving [1]</b> 143/21 <b>rely [1]</b> 56/15 <b>remain [2]</b> 63/22 109/22 <b>Remaining [1]</b> 42/19 <b>remains [3]</b> 19/7 126/23 139/18 <b>remarkable [2]</b> 141/5 142/12 <b>remarkably [2]</b> 129/19 145/25 <b>remember [5]</b> 1/13 37/7 68/24 121/11 122/15 <b>remembering [1]</b> 14/10 <b>remind [1]</b> 78/25 <b>remote [3]</b> 9/11 9/25 17/20 <b>remotely [5]</b> 17/12 17/22 18/17 21/23 30/7 <b>removed [1]</b> 60/16 <b>renowned [1]</b> 108/14 <b>reorganisation [4]</b> 80/17 81/2 81/12 82/8 <b>reorganisations [2]</b> 79/4 80/11 <b>repeated [1]</b> 42/4 <b>repeatedly [3]</b> 24/22 25/8 92/24 <b>replicated [1]</b> 87/19 <b>report [17]</b> 51/25 52/1 63/5 81/13 101/19 101/21 102/2 102/4 102/8 102/23 109/5 120/12 122/7 125/22 130/23 143/14 143/17 <b>reported [6]</b> 2/17 62/5 62/14 100/18 136/1 136/4 <b>reports [4]</b> 41/8 58/1 61/14 125/22 <b>represent [2]</b> 33/7 33/25 <b>representation [1]</b> 9/7 <b>representative [1]</b> 33/5
----------	--	---	---	--

<b>R</b>	76/25	126/14 134/7 135/6	66/24	110/6 111/12 113/7
<b>representatives [3]</b>	<b>responders [2]</b> 44/6	140/24 145/3 149/14	<b>running [2]</b> 19/13	124/15 125/21 127/22
46/19 46/20 66/19	44/8	149/21 150/2 152/16	124/11	128/13 129/6 129/19
<b>represented [1]</b> 1/25	<b>responding [4]</b> 43/5	152/19 152/21	<b>ruptured [1]</b> 82/12	132/21 134/18 135/1
<b>representing [1]</b> 30/2	65/4 78/10 79/8	<b>right-hand [3]</b> 126/4	<b>rural [1]</b> 113/4	135/9 135/24 137/8
<b>reps [1]</b> 68/10	<b>response [32]</b> 25/13	126/4 126/14	<b>rushed [3]</b> 29/16	139/13 142/20 144/3
<b>requested [1]</b> 32/24	26/1 39/14 44/5 54/14	<b>rightly [4]</b> 27/2	30/9 30/10	144/3 144/9 144/22
<b>require [3]</b> 100/10	56/10 62/18 64/4	134/18 145/16 146/9		<b>saying [4]</b> 19/19
127/10 146/18	65/11 70/24 74/20	<b>rights [2]</b> 33/15	<b>S</b>	24/10 143/14 148/16
<b>required [8]</b> 51/24	75/13 76/23 77/11	139/6	<b>safeguarding [1]</b>	<b>says [5]</b> 24/19 26/12
78/4 78/8 79/15 96/10	77/20 79/7 80/20 89/2	<b>rigorous [1]</b> 129/15	60/18	34/2 98/8 132/23
96/15 117/15 138/7	90/25 95/5 96/11	<b>ringfenced [1]</b> 80/5	<b>SAGE [7]</b> 8/16 8/19	<b>scale [6]</b> 18/4 59/15
<b>requirement [1]</b>	96/23 108/3 109/1	<b>rise [1]</b> 49/23	8/21 9/15 11/21 11/22	60/23 87/2 128/12
38/18	109/4 109/9 109/23	<b>risen [1]</b> 134/15	31/9	148/5
<b>requirements [2]</b>	111/7 116/24 116/24	<b>risk [32]</b> 12/20 12/22	<b>said [11]</b> 9/20 11/17	<b>scaled [1]</b> 18/9
63/13 122/20	126/10 142/17	12/25 13/2 13/3 13/11	30/15 54/12 72/14	<b>scattergun [1]</b> 91/13
<b>requires [1]</b> 126/7	<b>responses [6]</b> 12/14	17/16 23/18 43/9	110/24 115/15 125/8	<b>scenario [4]</b> 59/21
<b>research [36]</b> 4/13	43/1 62/22 78/23	61/18 64/2 76/19 77/1	138/18 147/11 149/8	122/20 131/1 131/2
4/18 4/21 15/3 15/7	93/16 109/25	90/10 105/21 111/21	<b>sake [1]</b> 49/12	<b>scenarios [4]</b> 59/22
17/5 17/5 26/17 27/7	<b>responsibilities [13]</b>	114/24 117/2 117/16	<b>Sally [2]</b> 112/7	64/6 136/5 136/14
94/12 107/20 110/25	34/25 35/3 39/25 41/8	120/7 127/21 130/24	115/25	<b>SCG [1]</b> 44/21
117/8 117/19 117/25	49/6 49/8 50/16 79/6	131/6 131/8 132/1	<b>Sally Davies [2]</b>	<b>school [2]</b> 44/17
119/6 119/20 120/9	79/8 80/18 81/9 81/22	132/7 133/9 136/1	112/7 115/25	45/18
122/16 122/17 124/5	86/20	136/8 137/24 138/20	<b>same [22]</b> 3/2 19/8	<b>schools [4]</b> 55/2 55/3
133/24 134/7 137/12	<b>responsibility [10]</b>	144/21	33/20 47/12 47/22	55/4 133/18
137/19 137/23 138/11	3/2 3/10 4/19 34/18	<b>risks [6]</b> 13/7 17/16	56/10 56/18 71/5	<b>science [9]</b> 3/14 11/2
138/20 139/7 139/12	48/21 50/18 50/20	20/24 22/4 60/19	75/11 112/15 121/2	11/11 15/2 31/1 67/6
139/16 141/13 141/18	86/25 93/3 93/5	104/25	121/5 123/23 123/24	145/19 145/19 145/20
144/6 145/9 145/14	<b>responsible [5]</b> 2/14	<b>roadmap [1]</b> 27/24	125/13 128/15 131/8	<b>scientific [36]</b> 3/25
<b>researcher [1]</b>	2/24 3/3 3/4 7/8	<b>robust [1]</b> 10/19	139/23 140/17 140/20	4/19 8/16 8/22 8/24
107/15	<b>rest [2]</b> 10/19 56/11	<b>Roger [1]</b> 89/14	140/21 146/8	9/1 10/8 10/14 10/21
<b>researchers [1]</b>	<b>restrict [1]</b> 55/9	<b>Roger Hargreaves</b>	<b>Sandwell [2]</b> 67/1	11/20 11/22 12/1
144/6	<b>result [4]</b> 29/17 73/11	<b>[1]</b> 89/14	67/3	12/19 15/3 15/7 15/23
<b>reserve [1]</b> 64/23	81/2 145/1	<b>role [23]</b> 3/22 4/2	<b>SARS [27]</b> 16/3 18/20	74/17 75/1 107/23
<b>resilience [31]</b> 6/16	<b>resulting [1]</b> 76/19	4/12 38/24 43/2 52/20	120/2 120/9 121/3	108/4 110/5 120/21
34/1 42/23 42/23 43/8	<b>results [1]</b> 32/25	56/3 56/18 56/21	121/7 125/14 125/18	120/23 127/6 131/25
43/11 44/5 45/7 45/25	<b>retained [1]</b> 50/6	58/18 64/14 69/7	125/25 126/7 127/9	133/6 136/10 136/15
46/17 46/23 46/25	<b>returning [1]</b> 104/18	70/23 72/12 80/4	128/1 128/19 128/21	136/24 145/14 147/5
47/9 47/11 47/14	<b>revalidation [1]</b>	80/21 87/16 88/3	129/2 129/2 129/5	147/10 150/1 151/3
47/17 47/18 47/21	72/22	100/16 112/8 150/17	129/9 129/16 130/25	151/19 152/15
47/22 47/23 47/24	<b>review [4]</b> 76/11	150/20 152/18	132/10 132/12 133/22	<b>scientist [11]</b> 4/16
47/25 63/20 64/17	117/14 119/4 119/19	<b>roles [11]</b> 60/9 61/17	134/4 135/16 147/20	10/24 10/25 11/1 11/4
64/17 64/19 64/19	<b>reviewed [1]</b> 64/20	61/19 63/16 70/21	147/23	12/4 12/5 27/6 139/21
73/10 88/2 95/24	<b>revise [1]</b> 7/12	72/20 79/8 80/8 80/18	<b>SARS-like [4]</b> 132/12	149/24 152/18
110/4	<b>revised [1]</b> 40/5	81/21 150/22	134/4 147/20 147/23	<b>scientists [5]</b> 18/2
<b>resilient [1]</b> 95/20	<b>richer [4]</b> 94/14	<b>roll [2]</b> 146/20 146/24	<b>sat [4]</b> 11/5 18/19	123/9 128/7 134/2
<b>resistance [1]</b> 107/25	94/14 104/1 104/14	<b>roll-out [1]</b> 146/20	121/6 152/9	150/13
<b>resources [3]</b> 43/20	<b>riders [1]</b> 125/3	<b>room [3]</b> 30/7 118/12	<b>save [2]</b> 63/4 141/17	<b>SCoPP [5]</b> 149/11
65/1 100/11	<b>Rift [1]</b> 120/4	121/18	<b>saved [4]</b> 49/11	150/17 150/24 151/18
<b>resourcing [1]</b> 60/1	<b>right [61]</b> 3/6 4/7	<b>rooms [1]</b> 1/25	135/23 146/2 146/3	151/22
<b>respect [2]</b> 29/22	11/19 13/18 17/5	<b>Roughly [1]</b> 33/18	<b>saving [1]</b> 139/12	<b>score [2]</b> 108/21
29/24	20/23 21/25 22/1 33/9	<b>round [1]</b> 29/20	<b>saw [3]</b> 79/19 112/16	108/24
<b>respiratory [7]</b> 77/5	33/23 34/5 34/13	<b>route [2]</b> 48/18 48/20	148/22	<b>scored [1]</b> 109/7
113/12 116/12 116/12	36/12 38/10 42/18	<b>routes [1]</b> 90/16	<b>say [58]</b> 1/20 11/22	<b>Scotland [55]</b> 2/7
116/14 119/24 120/2	48/5 49/9 50/13 52/4	<b>routine [3]</b> 103/11	13/10 17/3 17/11	2/12 2/17 2/22 3/8
<b>respond [13]</b> 6/17	52/14 53/20 55/11	103/19 137/23	23/22 26/23 27/22	4/15 4/18 4/21 4/25
39/16 64/5 78/22	62/4 63/2 70/25 71/19	<b>routinely [2]</b> 42/22	33/3 40/10 41/9 41/20	6/6 7/23 8/11 9/11
109/3 111/18 115/13	72/5 74/16 75/9 75/25	100/17	42/21 45/3 45/6 46/2	9/13 10/3 10/12 10/13
126/7 126/22 127/4	78/12 79/24 82/13	<b>royal [4]</b> 72/6 108/13	46/2 49/5 52/12 54/8	10/24 12/7 12/20
129/2 134/8 151/14	83/11 83/22 85/20	135/25 143/13	59/17 62/4 65/5 68/18	13/21 17/14 20/19
<b>responded [4]</b> 77/9	86/23 87/22 88/1 89/3	<b>Royal Society [2]</b>	69/5 73/18 76/22	21/9 23/1 24/14 24/18
129/9 129/9 139/1	91/1 92/13 92/14 95/9	108/13 143/13	78/13 80/3 83/11	24/25 25/1 26/14
<b>responder [2]</b> 45/10	100/1 114/19 118/24	<b>rules [1]</b> 46/8	84/17 88/2 93/23 95/8	26/15 26/21 27/8 30/2
	120/25 126/4 126/4	<b>run [3]</b> 20/5 21/2	95/12 97/8 104/12	31/11 35/21 37/1 37/5

<b>S</b>	73/23 105/13 118/25 119/1 119/3 119/17 120/12 128/13 128/14 136/11	<b>sets [2]</b> 11/8 63/7 <b>setting [3]</b> 56/6 67/24 72/13 <b>settings [6]</b> 81/15 129/16 129/17 130/8 131/13 141/10 <b>seven [2]</b> 37/15 102/3 <b>seven-week [1]</b> 102/3 <b>several [9]</b> 10/2 14/1 14/1 14/2 20/12 48/13 55/24 61/9 140/6 <b>severe [9]</b> 18/10 111/21 116/11 116/12 120/2 121/8 127/10 129/3 129/6 <b>severity [3]</b> 59/16 61/25 142/10 <b>sexual [6]</b> 35/3 50/17 50/23 54/9 57/13 103/14 <b>SFTS [1]</b> 120/4 <b>shape [2]</b> 57/21 74/12 <b>share [12]</b> 31/1 31/14 67/23 67/25 68/3 83/24 86/15 98/20 100/6 100/12 105/7 140/22 <b>shared [7]</b> 28/2 29/16 29/22 30/1 31/22 48/16 67/7 <b>sharing [20]</b> 28/6 28/7 30/21 31/4 31/13 31/24 51/16 51/18 51/19 62/15 62/21 62/24 74/16 74/25 75/1 75/3 90/19 100/11 103/21 103/25 <b>she [4]</b> 45/25 104/24 139/1 139/3 <b>sheer [4]</b> 59/15 60/23 125/3 127/11 <b>Sheikh [2]</b> 24/8 141/23 <b>shifted [1]</b> 134/4 <b>shifting [1]</b> 82/8 <b>shock [1]</b> 90/20 <b>shocking [1]</b> 148/5 <b>shocks [1]</b> 73/10 <b>short [5]</b> 49/15 91/7 97/16 106/19 124/22 <b>short-term [1]</b> 91/7 <b>shorter [1]</b> 30/10 <b>shortly [1]</b> 142/9 <b>should [29]</b> 6/10 6/14 11/21 13/8 13/13 27/2 53/7 54/22 56/5 63/16 63/17 64/15 68/18 69/11 76/6 88/24 89/7 95/8 105/3 116/3 124/13 125/21 129/14 130/18 130/19 145/22	148/19 148/20 151/18 <b>shouldn't [1]</b> 84/16 <b>showed [1]</b> 68/21 <b>showing [1]</b> 100/18 <b>shown [1]</b> 61/14 <b>shows [5]</b> 12/21 53/15 84/15 123/23 139/1 <b>shut [1]</b> 55/8 <b>sick [1]</b> 131/15 <b>side [3]</b> 126/4 135/5 145/23 <b>sight [1]</b> 40/7 <b>signature [3]</b> 1/17 32/16 107/8 <b>signed [2]</b> 32/16 70/8 <b>significance [1]</b> 58/6 <b>significant [11]</b> 16/14 43/12 43/12 43/14 44/19 51/23 60/18 79/3 80/11 123/15 136/17 <b>significantly [3]</b> 56/23 91/19 122/24 <b>signs [1]</b> 22/2 <b>similar [1]</b> 18/21 <b>similarly [3]</b> 43/18 59/8 81/8 <b>simple [1]</b> 122/13 <b>since [9]</b> 35/17 52/12 52/22 65/13 78/20 80/12 111/2 116/5 145/15 <b>sincere [1]</b> 1/23 <b>sincerely [1]</b> 17/1 <b>Singapore [2]</b> 18/14 20/25 <b>single [4]</b> 26/16 47/4 124/11 146/2 <b>Sir [13]</b> 5/8 23/5 23/5 23/10 28/9 28/17 30/3 59/1 59/6 66/5 89/5 139/21 141/23 <b>Sir Aziz Sheikh [1]</b> 141/23 <b>Sir Chris [1]</b> 59/6 <b>Sir Chris Whitty [1]</b> 23/5 <b>Sir Chris Wormald [1]</b> 89/5 <b>Sir David King [1]</b> 139/21 <b>Sir Patrick Vallance [1]</b> 23/5 <b>SIREN [1]</b> 16/16 <b>sister [1]</b> 42/8 <b>sit [7]</b> 37/1 37/14 37/15 38/21 42/22 46/22 47/10 <b>sits [2]</b> 37/22 149/15 <b>sitting [2]</b> 20/8 148/16 <b>situation [1]</b> 124/9 <b>situations [1]</b> 17/23	<b>six [3]</b> 19/20 19/22 102/3 <b>size [1]</b> 60/23 <b>skill [1]</b> 63/7 <b>skills [2]</b> 21/3 96/9 <b>slack [1]</b> 21/1 <b>slack [1]</b> 20/2 <b>slightly [7]</b> 30/4 41/23 42/5 84/21 122/8 137/13 145/24 <b>slip [4]</b> 15/22 21/16 135/4 141/16 <b>slipped [1]</b> 21/19 <b>slipping [1]</b> 15/20 <b>slow [1]</b> 16/4 <b>slower [3]</b> 50/11 77/16 110/19 <b>slowly [1]</b> 35/24 <b>small [10]</b> 5/1 5/5 11/4 11/16 27/1 123/7 124/21 131/14 144/3 149/10 <b>Smith [5]</b> 5/3 5/8 28/9 28/17 30/3 <b>so [248]</b> <b>So countries [1]</b> 113/3 <b>social [28]</b> 2/16 2/18 3/19 7/22 10/22 11/3 12/13 38/4 38/22 38/22 42/2 48/9 48/11 48/23 49/18 55/7 62/18 71/4 76/5 78/7 80/1 80/7 81/16 87/20 89/6 102/16 103/16 144/17 <b>social care [7]</b> 2/18 38/4 48/11 48/23 62/18 71/4 87/20 <b>societal [1]</b> 76/25 <b>society [6]</b> 1/25 3/21 108/13 133/19 143/13 148/15 <b>socio [1]</b> 98/1 <b>socio-economic [1]</b> 98/1 <b>sole [1]</b> 37/21 <b>solid [1]</b> 10/19 <b>some [86]</b> 2/4 5/7 7/6 9/15 10/5 11/8 12/11 12/13 14/3 15/1 15/18 15/19 17/18 17/20 17/24 19/3 20/25 21/1 21/1 23/3 30/13 30/14 35/12 38/12 39/18 39/18 39/19 39/21 42/19 44/10 46/3 47/1 47/21 49/3 49/3 49/7 50/6 51/14 51/24 52/2 52/12 53/12 53/15 53/15 53/19 54/19 57/8 57/11 58/13 59/22 60/6 60/11 61/1 62/25 66/17 67/1 69/1
----------	---	---	---	---

<b>S</b>	<b>span [1]</b> 47/1	35/8 73/20 93/3 102/7	<b>strengthened [1]</b> 64/15	<b>suffered [2]</b> 2/4 91/6
<b>some... [29]</b> 81/6	<b>spare [1]</b> 19/22	<b>stated [2]</b> 62/6 63/6	<b>stretch [1]</b> 147/25	<b>sufficient [5]</b> 62/2
81/24 82/10 86/20	<b>speak [4]</b> 36/15	<b>statement [41]</b> 1/16	<b>strike [1]</b> 118/3	95/19 113/17 127/21
87/6 99/19 99/20	70/14 77/17 82/2	1/18 13/22 24/9 24/20	<b>strong [8]</b> 62/20	129/12
99/24 111/17 112/13	<b>speaking [5]</b> 17/12	26/11 26/12 27/20	73/11 73/15 83/7	<b>suggest [2]</b> 64/1
119/10 120/14 120/15	36/13 110/17 125/25	29/1 32/15 32/20	83/23 94/2 95/19	109/12
120/16 127/7 129/11	133/7	34/11 40/9 40/14	96/13	<b>suggested [3]</b> 21/17
129/11 130/13 130/24	<b>specialisation [1]</b> 72/4	42/20 49/18 53/23	<b>stronger [2]</b> 90/24	77/8 142/2
134/10 139/3 141/25	<b>specialism [2]</b> 84/22	54/23 55/5 61/3 63/18	100/4	<b>suggests [1]</b> 26/15
143/4 147/25 148/9	84/24	65/23 68/8 70/6 73/18	<b>strongest [1]</b> 113/2	<b>suicide [2]</b> 38/24
148/25 150/13 151/10	<b>specialist [26]</b> 40/1	76/22 78/16 82/20	<b>strongly [1]</b> 65/12	38/25
152/1	40/3 63/15 71/21	88/3 91/2 97/17 97/23	<b>struck [2]</b> 9/16 18/18	<b>suited [3]</b> 21/23
<b>somebody [2]</b> 28/16	82/14 82/17 82/24	97/25 98/8 101/18	<b>structural [8]</b> 42/19	21/23 22/1
97/18	83/9 83/11 83/16 84/3	104/19 104/20 107/7	59/10 92/24 101/25	<b>summarise [1]</b> 50/3
<b>somehow [1]</b> 134/15	84/3 84/5 84/7 84/8	107/8 107/9 145/5	102/19 103/8 113/17	<b>summary [7]</b> 54/21
<b>something [22]</b> 3/7	84/22 84/23 84/24	<b>statements [1]</b> 39/21	123/21	55/10 115/2 115/3
5/25 20/10 20/11	85/4 85/6 85/8 85/9	<b>states [1]</b> 104/24	<b>structure [7]</b> 2/17	115/7 119/15 119/18
46/16 47/25 57/18	85/12 85/13 85/16	<b>Statistician [1]</b> 26/15	15/7 31/17 37/23 48/6	<b>supplementary [1]</b>
60/8 67/13 114/17	85/17	<b>status [2]</b> 102/17	50/10 63/9	99/17
115/25 116/23 121/3	<b>specialists [12]</b> 18/3	103/15	<b>structured [1]</b> 103/6	<b>supplies [1]</b> 14/14
122/12 122/19 123/3	19/6 34/7 71/17 72/17	<b>statute [2]</b> 39/17	<b>structures [9]</b> 4/14	<b>support [3]</b> 58/10
123/12 123/16 130/17	72/19 84/12 84/13	39/18	4/14 16/22 36/7 50/5	130/14 139/2
147/14 148/19 149/18	84/15 84/18 84/20	<b>statutory [6]</b> 34/17	50/14 64/20 67/11	<b>supporting [3]</b> 87/18
<b>sometimes [6]</b> 3/22	96/7	35/13 36/4 38/18 40/5	151/4	91/8 134/16
30/5 39/1 56/9 56/21	<b>specific [3]</b> 53/21	71/8	<b>struggling [1]</b> 23/24	<b>suppose [5]</b> 17/23
67/22	80/5 88/20	<b>stenographer [4]</b>	<b>students [2]</b> 138/2	18/11 18/24 28/16
<b>somewhat [3]</b> 49/8	<b>specifically [4]</b> 30/16	1/15 49/13 70/15	138/11	116/13
52/7 68/20	68/3 68/12 117/17	110/18	<b>studies [3]</b> 15/13	<b>sure [7]</b> 11/11 31/18
<b>soon [1]</b> 148/18	<b>specifics [1]</b> 26/2	<b>stick [1]</b> 138/10	98/14 111/6	111/5 122/1 129/1
<b>sophisticated [2]</b>	<b>spend [1]</b> 52/21	<b>stigma [1]</b> 92/23	<b>study [6]</b> 16/16 16/19	134/12 141/18
16/14 51/14	<b>spending [1]</b> 53/18	<b>still [12]</b> 16/24 17/1	24/7 27/3 27/5 137/6	<b>surge [7]</b> 126/3 126/6
<b>sorry [10]</b> 16/7 21/13	<b>SPI [1]</b> 108/4	17/9 58/13 58/13	127/5 127/10 127/14	127/18 129/23
40/10 50/12 85/3 85/3	<b>SPI-M [1]</b> 108/4	65/20 81/17 84/2	<b>sub [2]</b> 11/14 99/3	<b>surprise [2]</b> 122/3
97/7 114/14 132/4	<b>spoke [1]</b> 105/8	89/22 121/6 128/21	<b>sub-group [1]</b> 11/14	123/13
142/22	<b>spoken [1]</b> 151/2	134/6	<b>sub-groups [1]</b> 99/3	<b>surprised [2]</b> 13/6
<b>sort [19]</b> 13/14 17/20	<b>spread [7]</b> 19/2 23/18	<b>stories [3]</b> 24/10	<b>subject [1]</b> 53/13	13/11
18/23 18/24 25/16	109/5 109/10 128/18	102/24 103/2	<b>subsequent [2]</b>	<b>surprising [1]</b> 123/10
28/14 31/20 79/20	129/17 130/7	<b>story [5]</b> 102/14	14/23 82/3	<b>Surveillance [1]</b> 24/6
93/8 99/16 99/21	<b>spreads [2]</b> 19/3	104/6 128/9 143/12	<b>subsequently [1]</b>	<b>survey [7]</b> 16/17
103/5 103/11 103/16	111/23	145/21	14/24	16/17 32/23 33/1 62/4
104/4 104/13 128/13	<b>staff [14]</b> 5/4 14/4	<b>straightaway [1]</b>	<b>subset [1]</b> 51/17	62/14 141/7
134/16 143/15	14/14 18/16 18/16	117/11	<b>substance [1]</b> 13/16	<b>surveys [3]</b> 16/22
<b>sort of [17]</b> 13/14	19/25 20/4 20/6 81/3	<b>strain [2]</b> 123/12	<b>substantial [2]</b>	16/23 141/5
17/20 18/23 18/24	81/14 81/18 81/20	127/1	126/13 127/5	<b>susceptible [1]</b> 130/9
25/16 28/14 31/20	81/23 126/9	<b>strains [1]</b> 123/1	<b>subsumed [1]</b> 87/23	<b>suspect [1]</b> 140/21
79/20 93/8 99/16	<b>stage [5]</b> 16/8 62/1	<b>strategic [6]</b> 43/1	<b>success [3]</b> 24/10	<b>sway [1]</b> 144/5
99/21 103/5 103/11	93/15 121/9 125/7	44/7 45/8 132/6	128/9 145/21	<b>swine [3]</b> 132/13
104/4 104/13 134/16	<b>stages [1]</b> 105/6	132/18 137/8	<b>successful [1]</b> 51/22	133/23 143/18
143/15	<b>standard [1]</b> 137/22	<b>strategically [1]</b>	87/14	<b>swine flu [3]</b> 132/13
<b>sorted [1]</b> 140/13	<b>standards [3]</b> 71/16	55/22	<b>such [33]</b> 11/10	133/23 143/18
<b>sorts [1]</b> 123/10	72/14 72/18	<b>strategies [6]</b> 74/10	23/16 25/5 28/20	<b>sworn [4]</b> 1/6 32/10
<b>sound [1]</b> 148/5	<b>standing [7]</b> 64/23	74/12 74/13 79/22	43/20 44/10 44/17	154/2 154/9
<b>sounds [1]</b> 124/18	144/13 144/19 149/1	91/8 94/15	47/1 57/12 57/13	<b>Symptom [1]</b> 16/19
<b>source [3]</b> 11/20	149/11 149/14 149/15	<b>strategy [20]</b> 6/24 7/2	57/22 73/10 78/5 89/9	<b>symptomatic [1]</b>
26/16 54/12	<b>start [7]</b> 20/5 23/12	7/3 8/12 8/13 73/24	98/11 100/14 103/5	133/12
<b>sources [2]</b> 39/20	65/7 68/21 93/22	73/25 74/3 74/5 74/7	104/9 105/1 108/25	<b>Syndrome [4]</b> 116/12
115/7	108/18 128/22	75/7 75/9 75/14 76/3	109/18 111/10 117/20	116/14 119/24 120/2
<b>sourcing [1]</b> 54/6	<b>started [6]</b> 16/23	94/19 124/19 125/11	117/24 120/2 126/7	<b>system [44]</b> 15/3
<b>south [2]</b> 53/19 113/2	119/5 137/1 140/5	130/14 132/3 132/16	126/16 129/7 130/10	19/6 19/11 19/13
<b>South Africa [1]</b>	145/24 146/20	<b>streamlined [1]</b>	138/15 138/23 141/17	20/14 21/1 25/1 31/13
113/2	<b>starting [1]</b> 53/1	91/14	144/19	35/9 38/8 47/20 54/14
<b>space [5]</b> 47/12 77/5	<b>starts [1]</b> 29/9	<b>Street [1]</b> 130/2	<b>suddenly [1]</b> 140/6	59/11 59/14 60/21
87/12 94/10 95/13	<b>state [6]</b> 19/11 25/3	<b>strengthen [1]</b> 151/3	<b>suffer [1]</b> 94/22	60/25 62/3 65/6 67/5



<b>S</b>	82/5	69/18 70/3 70/4 70/5	20/9 22/3 23/14 30/6	20/25 21/25 21/25
<b>system...</b> [25] 67/17	<b>technical</b> [1] 149/25	70/12 73/17 76/21	35/23 37/5 43/24 57/8	21/25 22/5 29/17
72/24 73/1 79/4 80/22	<b>technological</b> [1]	77/18 96/25 97/8	59/12 60/13 60/17	29/18 30/9 30/12
80/23 81/11 86/1	145/17	99/15 101/16 103/4	62/12 62/13 69/9	30/12 33/15 33/16
93/25 95/23 96/21	<b>telephone</b> [2] 6/10	104/17 106/3 106/5	73/14 84/14 92/18	34/8 34/14 34/24 35/2
98/16 98/17 98/21	22/5	106/6 106/7 106/9	92/19 111/7 111/10	35/5 35/6 35/7 35/9
98/22 99/23 100/24	<b>television</b> [1] 69/4	106/10 106/11 106/13	115/9 115/13 121/8	35/11 35/13 35/17
103/7 111/18 113/3	<b>tell</b> [7] 3/7 34/16	106/17 107/6 107/11	124/4 140/1 143/9	35/25 36/3 36/4 37/15
113/9 113/19 126/21	40/11 89/24 102/13	126/5 126/14 133/2	146/3 146/10 147/6	38/17 41/8 41/9 42/9
137/11 138/16	104/6 148/18	148/23 149/6 151/23	<b>theme</b> [1] 114/23	42/17 43/2 45/14
<b>systems</b> [19] 18/5	<b>telling</b> [1] 111/14	152/23 152/24 152/25	<b>themes</b> [1] 150/25	45/15 46/13 46/24
46/12 54/10 56/6 57/3	<b>tempted</b> [1] 13/10	153/1 153/3 153/4	<b>themselves</b> [1] 75/22	47/10 47/11 47/13
60/3 99/12 99/13	<b>ten</b> [4] 27/15 97/6	<b>thank you</b> [43] 1/23	<b>then</b> [74] 3/1 5/3 5/9	58/23 60/12 61/13
99/19 100/2 100/3	143/22 143/22	2/5 22/9 22/14 22/18	5/20 6/17 6/24 9/22	61/15 61/17 62/6
100/17 104/13 105/22	<b>ten minutes</b> [1]	24/3 26/7 27/10 27/19	10/25 14/3 16/18	65/13 66/21 69/2
110/4 113/16 115/12	27/15	29/5 29/7 30/18 32/4	18/11 19/2 19/22 21/3	75/22 84/13 84/15
134/23 143/15	<b>ten years</b> [2] 143/22	32/6 32/19 41/18	24/24 25/16 26/8 27/3	86/17 94/8 104/12
	143/22	49/11 49/11 52/14	37/8 37/13 39/4 42/12	110/12 110/13 110/13
	<b>tend</b> [1] 132/14	65/19 69/14 69/15	43/17 44/18 45/18	110/15 110/15 110/21
<b>T</b>	<b>tended</b> [3] 5/19 135/4	69/18 70/3 70/4 70/5	52/18 65/9 66/20 78/8	110/21 111/12 112/10
<b>table</b> [3] 29/20 74/11	152/1	70/12 73/17 76/21	82/12 83/19 86/19	112/15 112/15 113/25
152/4	<b>tendency</b> [3] 15/17	77/18 96/25 97/8	90/17 90/24 92/21	116/10 117/16 117/21
<b>tabletop</b> [1] 13/20	21/16 135/1	99/15 101/16 103/4	93/24 94/9 96/13	121/6 121/9 124/13
<b>tackle</b> [2] 65/10	<b>tens</b> [1] 131/14	104/17 106/6 106/7	101/11 102/6 104/14	124/14 129/4 129/5
100/8	<b>tent</b> [1] 95/1	107/6 126/5 126/14	110/20 112/19 112/23	129/8 129/8 129/8
<b>tackling</b> [2] 85/18	<b>term</b> [3] 84/7 91/7	148/23 152/24	113/25 115/24 116/10	129/9 129/18 130/3
90/2	133/18	<b>that</b> [816]	116/18 117/1 117/11	131/1 131/1 131/4
<b>take</b> [20] 19/17 20/25	<b>terminally</b> [1] 25/2	<b>that's</b> [67] 1/19 2/13	119/11 120/3 120/5	135/4 136/16 142/13
21/4 27/16 38/20 45/8	<b>terms</b> [37] 3/9 5/12	2/20 4/10 4/20 5/11	120/12 120/14 120/18	143/10 143/23 144/4
47/13 48/22 49/12	14/8 35/6 36/18 48/18	8/20 12/7 14/24 17/15	121/3 125/22 126/11	146/2 146/7 146/8
54/14 60/12 67/1	48/23 49/23 51/19	19/15 20/10 28/11	126/24 127/3 130/1	148/1 152/5
70/13 78/5 88/15 89/9	52/22 53/4 64/2 64/23	28/15 29/1 33/7 33/21	130/19 131/12 131/15	<b>They'd</b> [1] 121/7
120/18 122/1 122/3	66/7 67/14 75/22 76/4	33/23 34/13 34/23	132/12 134/4 137/2	<b>they're</b> [8] 35/21
123/1	78/19 79/14 80/4 80/8	35/20 36/8 37/10	137/6 139/20 140/2	35/21 36/5 43/22
<b>takeaway</b> [1] 23/15	88/3 89/18 93/7 98/3	41/18 53/23 54/8	140/10 144/10 144/24	84/12 84/19 100/16
<b>takeaways</b> [1] 23/10	99/21 109/20 116/3	68/14 71/1 71/7 71/11	<b>theoretical</b> [1]	140/20
<b>taken</b> [12] 3/23 14/5	116/23 124/3 133/8	71/20 72/8 73/22 79/3	128/21	<b>they've</b> [1] 111/7
31/21 55/25 72/3 75/6	142/5 144/2 151/13	85/8 85/12 85/20	<b>therapeutic</b> [1] 24/16	<b>thing</b> [3] 28/14 43/10
80/5 81/16 87/24	151/17 152/6 152/10	91/14 94/25 100/1	<b>there</b> [244]	112/15
121/15 125/14 133/21	<b>test</b> [8] 14/16 56/8	104/12 108/4 109/24	<b>there's</b> [13] 17/3	<b>things</b> [25] 13/10
<b>takes</b> [3] 45/5 146/24	57/22 57/24 57/25	111/25 113/5 113/5	19/19 21/1 21/15 22/3	15/10 35/5 35/5 43/19
147/1	58/7 66/24 126/19	113/22 116/4 116/5	35/5 36/18 37/6	51/15 52/5 57/1 66/2
<b>taking</b> [9] 43/13 54/6	<b>tested</b> [2] 90/7 133/2	117/17 118/11 120/25	105/16 124/19 131/2	90/23 91/18 91/23
70/23 86/24 91/16	<b>testing</b> [7] 17/21 18/5	122/25 124/1 125/1	134/6 143/6	94/16 96/19 100/10
94/23 105/10 110/23	50/18 54/11 129/21	130/17 135/6 138/24	<b>therefore</b> [15] 2/21	102/16 105/19 109/13
136/18	133/17 145/10	139/17 142/21 145/3	8/1 8/12 9/15 10/18	133/1 138/13 140/8
<b>talk</b> [4] 6/1 28/13	<b>than</b> [21] 23/14 37/16	145/4 146/15 149/22	11/24 40/11 42/13	143/6 143/19 148/13
65/24 134/10	38/4 47/15 47/16	151/10 151/12 152/21	62/1 84/14 88/15	151/16
<b>talked</b> [3] 26/3 66/3	47/23 47/24 52/4	<b>their</b> [41] 2/5 3/4 6/1	113/13 115/20 135/1	<b>think</b> [104] 9/5 9/8
147/19	52/13 53/19 60/3	6/11 18/19 21/6 23/7	136/11	12/17 13/13 15/10
<b>talking</b> [7] 26/25	61/18 67/22 69/6 69/9	30/12 34/16 34/17	<b>these</b> [30] 17/24	15/21 16/8 17/12
104/10 137/14 137/18	71/18 99/20 107/23	34/18 38/3 40/4 40/25	27/23 27/25 30/5	19/15 20/3 21/7 21/16
139/18 140/18 150/14	146/1 146/21 148/21	42/16 43/7 46/4 46/11	31/20 32/22 34/14	25/4 25/21 25/22
<b>Tamiflu</b> [1] 118/4	<b>thank</b> [73] 1/11 1/23	48/10 54/7 56/2 56/15	39/17 57/12 63/16	26/24 27/15 27/16
<b>targeted</b> [3] 88/18	2/5 21/10 22/9 22/14	57/5 66/21 71/23	63/21 91/20 92/2 93/4	30/8 35/17 43/10 46/2
91/8 122/15	22/18 22/22 24/3 26/7	72/20 72/20 73/14	94/19 99/2 99/9 99/13	46/9 48/3 49/5 50/2
<b>taskforce</b> [3] 18/18	27/9 27/10 27/11	76/1 81/21 83/19	102/15 111/13 130/20	50/25 51/17 52/6
18/20 21/2	27/19 29/5 29/7 29/12	86/18 89/20 98/1	131/9 134/8 140/13	54/16 54/16 54/18
<b>taxa</b> [1] 115/16	30/18 32/3 32/4 32/4	100/12 121/17 127/18	140/16 143/1 143/6	54/22 55/10 55/24
<b>team</b> [11] 5/5 11/2	32/6 32/19 40/19	127/23 129/11 129/11	143/7 143/19 147/21	56/9 56/13 56/20
11/5 24/12 44/14	41/18 49/11 49/11	142/13	<b>they</b> [108] 5/25 6/12	57/20 58/9 58/12 59/6
45/14 45/15 45/16	52/14 53/24 63/24	<b>them</b> [40] 3/17 6/1	6/13 9/4 11/14 14/14	59/18 60/1 60/2 61/9
126/8 141/24 142/12	65/19 69/13 69/14	6/5 6/7 6/8 6/9 6/12	14/15 16/24 17/1	61/15 61/23 62/2
<b>teams</b> [3] 41/9 42/16	69/15 69/16 69/17	6/21 10/17 11/17 14/8	18/18 18/21 20/6	66/14 67/16 67/18



<b>T</b>	135/11 137/4 137/18 138/3 138/12 139/5 139/20 139/24 140/22 141/15 142/11 142/12 142/22 142/22 143/12 143/15 143/17 143/23 144/5 145/13 147/4 147/9 148/4 148/17 148/17 148/19 150/8 150/11 151/13 152/13 <b>this report [1]</b> 125/22 <b>thorough [2]</b> 75/20 76/2 <b>those [113]</b> 5/22 6/21 9/11 10/6 11/5 12/12 13/25 14/4 14/18 14/25 15/22 15/24 16/12 16/22 16/23 17/3 17/25 19/1 20/1 23/2 24/2 25/23 26/23 27/10 30/2 31/22 34/20 35/12 38/15 39/15 41/16 41/21 42/7 42/23 43/19 46/6 49/5 49/7 50/24 53/9 54/22 61/20 63/22 65/12 66/17 67/7 71/23 76/10 76/17 76/19 78/4 78/19 78/23 83/9 83/19 84/12 85/12 86/20 88/13 88/14 88/20 89/18 90/6 90/7 90/9 90/23 91/8 92/8 92/18 93/5 93/21 93/24 94/7 94/15 94/18 94/21 96/17 98/5 100/7 100/11 100/19 101/12 101/14 102/18 105/20 105/23 105/25 105/25 110/11 112/12 112/14 113/21 113/23 115/13 115/22 117/24 119/13 123/2 123/3 123/10 129/13 130/3 131/15 132/25 133/22 134/1 134/11 135/21 138/1 145/11 146/4 147/3 151/8 <b>though [4]</b> 11/6 24/19 118/17 130/3 <b>thought [10]</b> 59/20 64/22 95/2 109/14 114/7 114/15 114/17 133/14 137/22 139/3 <b>thousands [2]</b> 131/16 131/19 <b>threat [14]</b> 28/1 74/22 74/25 116/2 120/20 120/23 126/23 134/8 134/17 135/2 135/9 135/17 135/18 135/19 <b>threats [19]</b> 78/18	78/22 79/16 115/4 115/8 115/9 115/17 115/20 115/22 117/20 117/23 124/4 125/2 125/2 134/10 134/11 135/4 147/19 147/22 <b>three [9]</b> 3/24 5/4 34/20 69/5 72/6 72/11 94/15 116/8 144/12 <b>through [17]</b> 6/21 18/15 42/25 45/19 52/20 59/1 59/5 76/13 90/10 93/16 94/3 95/25 128/2 128/18 132/22 143/3 143/23 <b>throughout [4]</b> 3/20 5/19 58/2 76/22 <b>Thursday [1]</b> 153/10 <b>thus [2]</b> 91/5 91/14 <b>tick [1]</b> 114/13 <b>Ticks [1]</b> 114/13 <b>tidied [1]</b> 48/1 <b>tier [8]</b> 34/23 35/15 35/16 86/1 86/13 86/19 87/13 87/17 <b>tiers [1]</b> 87/21 <b>time [52]</b> 4/11 5/2 5/2 5/5 5/9 12/5 14/23 19/8 20/12 25/14 27/6 30/11 56/11 58/3 61/20 70/16 74/11 75/11 75/13 79/14 82/1 87/16 103/3 108/4 119/7 123/23 124/16 125/2 125/7 125/10 125/13 126/8 128/7 129/5 131/8 132/2 132/21 134/13 134/13 135/13 140/1 143/25 144/6 146/11 146/24 147/1 147/6 148/8 148/8 148/9 148/10 148/11 <b>times [4]</b> 9/8 19/17 59/7 149/16 <b>timing [1]</b> 20/11 <b>tin [1]</b> 34/2 <b>tirelessly [1]</b> 2/3 <b>tobacco [1]</b> 38/14 <b>today [8]</b> 24/5 26/9 33/3 34/16 70/5 71/14 147/20 153/6 <b>together [12]</b> 11/25 12/10 18/17 41/15 45/16 66/16 80/18 80/22 83/25 87/6 99/22 124/12 <b>told [2]</b> 21/25 91/4 <b>tomorrow [1]</b> 153/7 <b>too [11]</b> 36/13 42/17 97/6 113/8 118/23 136/3 137/16 138/12 139/6 142/20 148/5 <b>took [9]</b> 3/13 3/14	3/14 17/8 25/14 57/24 86/20 138/1 143/2 <b>tools [3]</b> 75/2 79/18 94/8 <b>top [8]</b> 55/25 57/1 68/19 69/11 132/23 134/15 148/6 148/7 <b>top-down [3]</b> 57/1 68/19 69/11 <b>topic [2]</b> 107/17 136/25 <b>topics [3]</b> 22/15 144/12 152/4 <b>touched [1]</b> 97/13 <b>touches [1]</b> 3/20 <b>towards [4]</b> 2/25 60/22 95/4 119/2 <b>trace [6]</b> 56/8 57/22 57/24 57/25 58/8 66/24 <b>tracing [7]</b> 18/5 54/11 57/12 57/14 58/8 126/16 133/17 <b>train [4]</b> 20/23 83/25 86/14 114/14 <b>trained [6]</b> 34/6 57/11 83/3 85/4 85/10 85/14 <b>training [24]</b> 5/6 33/16 39/10 39/23 48/19 49/1 49/3 63/7 63/9 63/13 63/14 63/15 71/23 72/2 72/12 72/14 72/15 73/12 82/25 84/10 94/4 94/8 100/11 101/2 <b>transcript [1]</b> 70/16 <b>transfer [4]</b> 49/23 50/7 52/12 52/22 <b>transferred [1]</b> 49/20 <b>transfers [1]</b> 50/15 <b>translation [1]</b> 3/13 <b>transmissible [1]</b> 148/13 <b>transmission [5]</b> 128/17 128/23 130/10 131/18 133/10 <b>transmit [1]</b> 114/19 <b>transmitted [1]</b> 135/18 <b>transmitting [1]</b> 51/8 <b>transparent [1]</b> 20/22 <b>transpired [1]</b> 53/13 <b>transport [1]</b> 57/18 <b>trap [1]</b> 109/19 <b>trauma [1]</b> 49/1 <b>travel [1]</b> 17/15 <b>travelled [1]</b> 118/19 <b>treatment [3]</b> 50/19 54/9 126/20 <b>tremendous [3]</b> 133/24 143/8 145/16 <b>tremendously [2]</b>	142/1 145/13 <b>trends [1]</b> 100/18 <b>triage [1]</b> 29/16 <b>triaged [1]</b> 119/12 <b>trial [2]</b> 16/20 16/23 <b>trials [1]</b> 146/1 <b>tribute [1]</b> 2/2 <b>true [4]</b> 23/22 70/9 70/11 113/5 <b>trust [3]</b> 88/14 92/23 152/19 <b>truth [3]</b> 1/18 32/17 107/9 <b>try [3]</b> 88/17 119/7 150/17 <b>trying [1]</b> 112/13 <b>turn [6]</b> 6/24 42/21 53/21 109/13 110/21 144/7 <b>turned [1]</b> 133/4 <b>turning [4]</b> 8/16 12/20 39/6 48/6 <b>two [18]</b> 11/10 22/15 28/4 28/6 40/22 51/3 62/17 69/1 110/7 112/14 113/7 113/21 117/7 123/9 131/10 133/22 141/20 147/1 <b>two years [1]</b> 117/7 <b>type [4]</b> 15/17 122/4 133/11 133/15 <b>types [5]</b> 64/5 115/8 134/8 134/11 134/16
			<b>U</b>	
			<b>UK [35]</b> 3/25 7/1 8/13 10/18 12/21 15/15 22/24 31/15 31/21 40/23 65/22 66/17 97/3 97/12 98/12 98/13 99/7 108/23 109/7 112/3 112/9 114/7 114/16 115/25 116/1 116/3 123/6 126/22 132/3 143/5 145/24 146/20 146/22 151/5 151/6 <b>UK's [2]</b> 63/19 146/21 <b>UKHSA [12]</b> 41/6 41/7 41/15 44/16 45/2 45/13 45/19 46/21 55/16 82/6 87/20 100/15 <b>UKHSA's [1]</b> 41/2 <b>ultimately [1]</b> 14/9 <b>unable [1]</b> 20/7 <b>unanticipated [1]</b> 123/8 <b>uncertainty [1]</b> 89/11 <b>unclear [4]</b> 52/9 52/9 59/19 59/24 <b>under [9]</b> 33/19 43/22 75/15 128/3	

<b>U</b>			
<b>under...</b> [5] 128/11 128/25 129/13 129/18 141/16	125/24 126/1 129/20 140/18 148/25 149/9	76/15 82/16 82/21 89/24 92/11 92/25 93/10 93/12 99/1 99/3 99/8 99/13 100/9 102/21 105/22 108/23 111/14 114/21 114/22 121/12 122/3 123/11 138/8 139/9 148/22	9/9 9/10 9/10 9/23 10/3 10/4 10/6 10/14 10/16 10/17 10/18 10/18 11/16 12/10 12/15 12/15 12/19 13/17 15/15 16/14 18/13 18/13 19/25 20/2 20/13 20/13 21/10 22/22 23/23 23/23 25/12 25/12 27/4 27/9 27/11 29/12 30/14 32/3 32/4 32/23 33/2 40/19 41/18 44/1 51/11 51/17 53/24 55/10 55/25 56/15 58/11 60/16 63/12 63/25 65/13 66/3 68/22 69/1 69/13 69/16 69/17 77/17 78/6 80/21 87/17 103/10 104/3 106/3 106/5 106/9 106/11 106/13 106/17 107/11 109/6 109/22 110/1 110/6 110/12 110/14 111/1 111/20 112/4 113/14 113/24 114/2 114/3 114/3 114/20 114/20 121/11 122/13 123/6 123/10 124/1 124/6 124/18 124/22 124/22 124/25 128/1 128/7 128/16 129/15 130/5 131/1 131/20 133/8 138/14 141/24 142/1 142/8 144/8 144/8 146/12 146/13 147/21 147/21 147/21 148/1 148/1 149/6 149/7 151/12 151/22 151/23 152/9 152/23 152/25 153/1 153/4
<b>underlying</b> [1] 31/18	<b>universal</b> [5] 88/5 88/9 88/10 88/15 88/17	121/12 122/3 123/11 138/8 139/9 148/22	125/5 <b>visible</b> [1] 132/21 <b>visibly</b> [2] 93/3 93/3 <b>visit</b> [1] 25/22 <b>visitor</b> [1] 60/17 <b>visitors</b> [2] 60/14 60/15 <b>vital</b> [4] 15/6 62/17 63/16 94/23 <b>vitality</b> [2] 60/15 99/11 <b>Vivaldi</b> [2] 16/17 141/7 <b>voice</b> [4] 1/14 33/7 94/10 96/6 <b>voices</b> [3] 30/13 143/25 144/4 <b>voluntary</b> [4] 56/16 90/13 94/20 126/17 <b>vulnerabilities</b> [7] 89/8 89/20 91/17 94/23 113/24 114/4 114/5 <b>vulnerability</b> [7] 111/19 111/25 112/1 112/3 112/12 113/18 114/20 <b>vulnerable</b> [15] 60/16 61/16 90/5 90/12 90/17 90/22 105/1 105/5 109/22 112/4 114/8 114/16 114/17 114/21 114/22
<b>underpin</b> [2] 16/23 145/20	<b>University</b> [3] 24/8 115/5 141/24	<b>use</b> [9] 17/22 27/2 31/2 62/12 79/17 82/23 84/21 95/5 100/7	<b>via</b> [1] 1/7
<b>underpinned</b> [4] 6/25 7/5 46/7 64/4	<b>unknown</b> [5] 19/7 20/10 20/11 122/18 122/21	<b>used</b> [5] 52/18 56/7 84/7 122/8 137/23	<b>videolink</b> [1] 1/7
<b>underpinning</b> [1] 145/19	<b>unpacking</b> [1] 100/19	<b>useful</b> [4] 29/14 140/10 140/12 144/7	<b>view</b> [23] 15/5 15/17 18/7 24/25 30/2 52/3 60/2 62/25 66/8 76/1 76/9 76/24 87/14 89/9 94/23 98/21 105/7 117/1 118/23 125/11 139/10 149/24 149/25
<b>understand</b> [26] 3/16 28/8 31/16 46/12 47/7 58/14 62/11 76/15 76/17 90/22 92/11 92/14 98/25 99/2 99/9 99/13 100/6 101/4 102/8 102/11 103/16 104/15 105/16 105/20 105/23 111/14	<b>unpredictability</b> [2] 125/5 127/12	<b>using</b> [3] 92/7 94/10 100/25	<b>viewing</b> [1] 125/1
<b>understanding</b> [30] 7/9 9/20 14/1 15/2 48/4 49/25 51/4 56/14 56/21 56/22 58/5 61/7 69/8 73/9 75/2 75/17 80/8 80/23 90/11 94/21 96/20 99/6 101/19 103/23 104/1 127/21 136/7 144/25 145/3 149/22	<b>unpredictable</b> [2] 112/16 113/13	<b>usually</b> [3] 41/16 45/18 66/16	<b>views</b> [3] 13/7 29/22 140/22
<b>understood</b> [2] 117/18 133/6	<b>unravel</b> [1] 16/7	<b>utilise</b> [1] 99/1	<b>Viral</b> [1] 115/4
<b>undertaken</b> [2] 75/24 76/7	<b>unravelling</b> [3] 15/8 16/24 17/4	<b>utility</b> [1] 121/23	<b>virtue</b> [2] 82/3 85/4
<b>undoubtedly</b> [3] 62/11 62/23 124/2	<b>unsustainably</b> [1] 91/6	<b>V</b>	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>unfortunately</b> [2] 9/23 40/16	<b>untangle</b> [1] 16/7	<b>vaccination</b> [4] 142/9 145/24 146/22 146/24	<b>viruses</b> [8] 64/6 113/12 115/10 115/13 115/16 116/21 119/13
<b>unhelpful</b> [1] 60/1	<b>until</b> [8] 4/11 12/14 29/3 89/10 117/7 138/12 142/13 153/9	<b>vaccine</b> [15] 15/11 57/16 116/1 116/4 116/24 118/7 118/8 118/9 119/9 126/20 146/10 146/14 146/16 146/20 147/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>unified</b> [1] 26/16	<b>up</b> [51] 1/14 3/15 4/7 7/12 11/10 11/25 12/6 12/14 13/1 13/4 14/19 17/24 18/4 18/9 20/4 24/21 26/11 27/21 29/3 31/11 40/9 48/1 56/6 56/7 61/1 63/20 67/24 68/2 88/15 92/24 94/14 97/23 104/13 108/10 110/18 111/17 115/9 119/7 119/11 124/14 131/9 134/1 142/19 143/1 143/1 143/3 143/9 143/17 143/24 144/15 146/1	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>unintended</b> [1] 134/22	<b>updated</b> [2] 78/24 79/11	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>unit</b> [1] 89/15	<b>upfront</b> [1] 93/22	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>unitary</b> [3] 34/24 35/18 37/17	<b>upon</b> [13] 43/3 58/7 77/9 97/13 122/6 125/25 130/4 133/18 133/18 136/1 136/13 138/25 139/6	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>United</b> [32] 5/16 15/2 17/6 22/11 33/6 34/11 40/20 42/5 63/3 68/11 70/18 70/22 71/13 71/19 72/7 73/20 73/24 108/3 108/19 108/21 111/3 115/9 118/3 125/24 126/1 129/20 136/2 140/18 141/1 148/25 149/9 150/15	<b>upper</b> [3] 34/23 35/15 35/16	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
<b>United Kingdom</b> [26] 5/16 15/2 17/6 22/11 33/6 34/11 40/20 42/5 63/3 70/18 70/22 71/13 71/19 72/7 73/24 108/3 108/21 111/3 115/9 118/3	<b>urbanisation</b> [1] 112/25	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
	<b>urbanised</b> [1] 111/22	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
	<b>urgent</b> [2] 119/20 120/9	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
	<b>urgently</b> [1] 25/3	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11
	<b>us</b> [46] 3/7 5/7 11/8 17/12 32/5 34/16 36/9 36/14 47/21 48/22 48/25 49/22 51/15 52/5 58/24 59/7 66/7 66/21 67/23 68/3 73/7	<b>vaccines</b> [9] 77/14 115/18 116/16 116/17 118/5 118/20 142/9 145/18 146/2	<b>virus</b> [12] 44/20 61/25 111/23 114/18 116/8 116/9 127/2 127/13 128/4 128/11 147/18 148/11

<b>W</b>	121/11 123/8 128/24 129/1 129/8 129/9 132/20 141/4 142/15 145/7 145/21 146/5 146/5 146/12 151/10	132/10 146/25 148/9 148/10 152/17 <b>where [39]</b> 16/3 16/6 17/22 20/6 20/21 21/18 22/4 31/18 35/25 36/10 37/13 53/6 60/21 60/24 61/17 67/25 72/2 72/11 77/19 79/20 83/24 85/17 86/4 86/10 86/11 86/11 87/12 88/19 92/12 100/2 104/18 105/23 110/8 115/11 115/17 117/24 131/2 151/10 151/19	105/16 116/7 120/15 120/16 121/22 121/23 121/24 123/25 127/17 145/11 <b>wide [4]</b> 12/10 128/12 131/5 143/5 <b>wide-ranging [1]</b> 12/10 <b>widely [1]</b> 29/16 <b>widening [1]</b> 95/1 <b>wider [10]</b> 1/25 3/25 73/4 76/17 77/24 78/8 79/18 79/22 84/25 136/5 <b>widespread [4]</b> 130/9 131/18 131/23 133/13 <b>wifi [1]</b> 31/10 <b>wilderness [1]</b> 144/1 <b>will [43]</b> 22/7 24/4 36/22 41/9 41/11 41/23 41/24 42/2 42/4 43/17 43/20 43/21 43/24 44/12 44/13 44/25 45/13 45/15 45/16 45/17 45/18 45/19 62/23 69/20 75/9 88/15 94/1 94/14 96/5 97/3 98/25 101/11 119/1 122/3 138/10 146/10 146/16 146/17 147/12 147/13 147/23 148/8 148/10 <b>willingness [1]</b> 69/9 <b>winning [2]</b> 124/21 124/23 <b>wisdom [1]</b> 8/11 <b>wish [2]</b> 1/23 36/15 <b>withdrew [4]</b> 32/7 69/19 106/14 153/5 <b>within [33]</b> 2/18 4/18 6/11 10/9 10/13 10/21 10/22 11/2 11/4 11/7 15/18 18/20 20/3 36/6 37/2 37/9 37/23 37/25 37/25 51/9 71/3 71/5 74/13 81/19 81/19 105/9 113/19 126/3 129/17 131/5 146/14 151/5 151/9 <b>without [6]</b> 20/2 56/17 80/5 109/12 121/19 148/15 <b>withstand [1]</b> 61/11 <b>witness [26]</b> 1/4 1/16 13/22 32/7 32/8 34/11 42/20 49/17 53/23 61/3 69/19 69/20 70/6 73/18 74/18 76/22 78/16 82/19 82/20 88/3 91/2 106/14 106/23 134/20 145/5 153/5 <b>won't [1]</b> 89/21 <b>wonder [2]</b> 28/25	30/23 <b>wonderful [1]</b> 49/13 <b>wondering [2]</b> 31/17 111/9 <b>Woolhouse [12]</b> 24/4 24/9 24/19 25/8 25/15 25/19 25/21 106/24 107/1 107/5 152/25 154/19 <b>word [1]</b> 30/10 <b>wording [1]</b> 122/7 <b>words [2]</b> 1/20 122/11 <b>work [36]</b> 14/6 16/23 20/7 38/23 45/21 46/6 48/10 50/21 51/1 54/5 55/14 57/24 60/15 61/19 69/2 69/9 73/6 74/23 80/24 85/18 87/18 96/1 98/10 104/6 109/6 110/7 116/4 133/25 134/6 134/16 134/16 135/15 142/12 143/3 146/7 147/3 <b>worked [11]</b> 2/3 6/22 11/15 11/17 70/20 85/14 107/14 107/15 112/23 141/25 148/14 <b>worker [1]</b> 80/9 <b>workers [2]</b> 16/16 49/2 <b>workforce [8]</b> 82/15 83/12 95/15 95/18 95/22 96/14 96/22 98/13 <b>workforces [1]</b> 60/13 <b>working [22]</b> 5/7 5/12 9/25 17/20 19/16 30/19 35/9 54/19 58/11 60/3 61/17 80/19 82/6 90/13 93/2 96/1 100/4 123/9 135/7 138/8 146/6 152/1 <b>works [1]</b> 112/22 <b>world [16]</b> 4/1 5/13 15/16 45/22 108/16 110/1 111/22 120/22 120/23 127/6 127/7 127/8 128/9 136/10 147/10 147/10 <b>Wormald [1]</b> 89/5 <b>worry [1]</b> 36/14 <b>worrying [2]</b> 123/6 128/1 <b>worse [3]</b> 53/16 61/14 85/3 <b>worst [2]</b> 61/21 113/1 <b>worth [1]</b> 22/12 <b>would [124]</b> 1/20 1/21 3/12 5/1 5/23 6/9 6/12 6/20 7/7 8/7 9/6 9/6 10/1 10/1 11/6
----------	--	--	--	--

<p><b>W</b></p> <p><b>would... [109]</b> 11/17 13/3 13/5 13/15 14/13 15/21 16/8 17/1 17/18 20/4 20/5 21/3 21/4 23/14 23/21 25/12 28/13 28/18 28/20 29/18 30/1 30/12 31/12 31/21 31/22 37/6 41/3 41/7 41/12 41/13 44/9 44/18 45/6 46/2 46/2 47/7 48/4 49/5 50/11 52/12 56/13 56/17 57/20 59/20 59/20 60/2 60/18 63/12 64/9 65/5 65/12 66/17 69/5 75/15 77/6 77/8 77/9 77/10 77/20 77/22 77/25 78/3 79/15 79/17 85/6 89/9 95/24 101/6 105/4 111/12 112/1 113/7 118/23 123/13 123/14 123/15 124/8 124/14 124/15 124/21 125/8 125/9 127/10 127/15 127/19 128/6 128/13 130/7 130/13 130/21 130/22 132/20 132/25 135/9 135/14 135/19 137/8 137/22 140/9 140/11 140/11 140/14 140/22 142/16 143/10 144/2 144/3 145/2 148/4 <b>wouldn't [8]</b> 14/23 17/2 26/22 44/20 118/11 133/3 142/20 148/14 <b>writing [1]</b> 144/10 <b>written [3]</b> 7/6 52/8 134/18 <b>wrong [2]</b> 84/5 133/5 <b>wrote [5]</b> 24/25 25/15 58/17 108/15 138/14</p>	<p>21/13 27/19 28/11 29/6 31/23 33/7 33/11 34/4 34/13 35/20 36/2 37/24 38/9 38/20 46/2 46/3 46/24 51/11 55/10 59/17 65/12 66/13 67/10 67/10 68/16 70/2 71/20 76/11 77/3 79/2 83/15 86/9 87/25 88/1 103/13 107/10 107/22 109/11 112/20 113/22 114/17 117/1 118/23 119/16 120/11 120/25 121/6 122/7 122/25 125/7 125/15 132/9 132/21 135/8 136/7 141/2 149/13 149/16 149/17 149/22 150/3 150/6 150/10 150/11 150/20 150/21 150/22 150/23 151/8 151/20 151/21 151/23 152/3 152/8 152/11 152/12 152/17 152/20 <b>yesterday [1]</b> 89/16 <b>yet [5]</b> 46/15 120/22 133/2 136/9 147/2 <b>you [423]</b> <b>you know [3]</b> 101/6 139/24 152/17 <b>you very [1]</b> 106/9 <b>you'd [1]</b> 125/7 <b>you'll [1]</b> 129/25 <b>you're [30]</b> 33/3 44/21 73/23 85/4 85/15 85/15 85/15 85/17 90/20 97/17 101/10 101/14 101/20 103/16 103/23 104/12 104/14 107/19 108/13 108/14 110/17 111/8 124/2 124/10 138/13 139/18 140/18 146/12 149/12 152/18 <b>you've [36]</b> 4/2 11/24 21/11 22/10 26/9 27/2 31/8 32/23 35/14 38/11 41/22 53/25 54/11 55/12 57/2 60/23 64/21 65/1 67/10 70/5 70/6 72/3 83/13 85/10 91/15 93/8 97/18 99/22 101/3 104/8 107/7 107/25 148/3 150/12 151/2 152/25 <b>young [1]</b> 77/12 <b>your [93]</b> 1/9 1/11 1/13 1/15 1/17 2/21 4/2 4/8 13/7 13/21 15/1 15/5 18/1 18/7 19/5 25/25 27/20 30/19 32/12 32/16</p>	<p>32/19 33/10 34/11 39/6 40/9 40/14 41/10 42/20 49/17 51/3 53/23 54/23 55/5 60/24 61/3 61/24 63/18 63/21 65/14 65/23 66/8 67/9 68/7 68/20 69/17 70/1 70/9 70/14 71/12 72/2 72/3 73/18 75/5 75/13 76/22 76/24 78/16 80/3 81/13 82/19 83/25 84/8 86/5 86/5 87/14 88/3 90/6 90/6 90/11 90/24 94/20 94/23 101/10 101/13 101/17 106/11 107/3 107/6 107/8 111/16 119/1 124/10 124/13 124/15 124/25 125/11 136/11 137/7 137/10 142/22 145/5 147/9 153/2 <b>yourself [2]</b> 115/5 150/14 <b>yourselves [1]</b> 66/4</p>		
<p><b>Y</b></p> <p><b>year [10]</b> 5/19 32/24 53/2 70/9 108/16 121/2 123/2 138/1 138/4 145/23 <b>years [18]</b> 7/6 72/9 80/12 82/3 82/25 84/10 107/16 108/1 117/7 127/8 135/7 135/13 136/24 140/6 143/22 143/22 150/13 151/25 <b>years' [1]</b> 20/12 <b>Yep [1]</b> 120/11 <b>yes [89]</b> 1/19 2/13 2/20 4/5 4/10 4/18 9/5 9/23 11/18 12/3 13/13</p>		<p><b>Z</b></p> <p><b>Zika [3]</b> 114/18 120/4 147/21 <b>Zika virus [1]</b> 114/18 <b>ZOE [2]</b> 141/7 143/4 <b>ZOE project [1]</b> 141/7 <b>zoomed [1]</b> 29/4 <b>zoonotic [1]</b> 122/4</p>		