

Wednesday, 14 June 2023

(10.00 am)

LADY HALLETT: Good morning. Today we will complete the opening submissions of the core participants and then turn to hearing evidence.

Mr Bowie, I'm sorry I cut you off yesterday.

**Submissions on behalf of Public Health Scotland by
MR BOWIE KC**

MR BOWIE: Thank you, my Lady, and good morning, everyone.

The following opening statement is made on behalf of Public Health Scotland, or PHS for short.

At the outset, we wish to say that we're very grateful to the Inquiry for its considerable work in getting to this important milestone, the start of the Module 1 hearings, and for our having been afforded an opportunity to participate in and contribute to this module of the Inquiry's work.

We are well aware it is only by dint of the huge amount of work and effort by you, my Lady, Counsel to the Inquiry and the rest of your team, that the core participants, including PHS, and the wider public, are now on the verge of being able to listen to the first of many important witnesses to this Inquiry give their oral testimony.

In short, PHS is grateful and pleased to be here on

1

and intention is to speak not only to the Inquiry but to the public also, in particular the Scottish public, especially those who have an interest in the work of PHS. It goes without saying that I am very much also speaking to the Scottish Covid-19 Bereaved Families for Justice, who have such an important place in this Inquiry. It is our hope that what I say today is helpful to all of those with an interest in PHS.

I want to say something now about PHS, the organisation.

Public Health Scotland is what's termed a special health board, and is the lead national organisation in Scotland for improving and protecting the health and wellbeing of Scotland's population. It was created after a public health reform programme in Scotland which was designed, amongst other things, to strengthen national leadership in public health. The organisation draws upon a range of expertise within its staff to deliver these objectives, including healthcare consultants, nursing staff and healthcare scientists.

Health, social care policy and funding, including public health policy, are devolved matters. This means that PHS operates in a different context to its counterparts in the other UK nations. PHS is committed to helping the Inquiry navigate the complexities that

3

this historic and important day.

PHS, its legal team and I look forward to participating over the coming weeks in these hearings and assist you, my Lady, and your team in whatever way we can.

PHS sincerely believes it has much to contribute and share by way of experience and expertise, but equally important from PHS's perspective we are here to learn, to learn from the Inquiry what can be done better to protect the people of Scotland from future threats to their health. PHS is committed to that.

For several months now, PHS has been working hard to produce all of the information the Inquiry has asked of it. To date, the organisation has produced detailed statements, chronologies, narratives and other documents across a number of the Inquiry's modules. It's hoped the documentation produced has been informative and has assisted the Inquiry in gaining a fuller understanding of who PHS is and the work it does.

During this process, we have very much been speaking to the Inquiry and although, as a result, the Inquiry will now, we hope, have a much better idea of who PHS is, we're very conscious that the wider public who are watching and listening today may very well not.

Hence in this opening statement our strong desire

2

this will inevitably create for a UK-wide investigation.

In terms of its relationships with others, PHS is accountable to both Scottish Government and local government, reflecting the fact that public health in Scotland is viewed as a shared endeavour of both local and national government.

Indeed, PHS is uniquely sponsored by Scottish Government and the Convention of Scottish Local Authorities, COSLA, on behalf of local government. On a day-to-day level, PHS collaborates across public and third sectors.

It's important to note that PHS is a relatively young organisation. It came into existence legally in December 2019, becoming operational on 1 April 2020 at around the start of the pandemic, and at the time of the first UK-wide lockdown.

It will be apparent that, consequently, during the period with which this module of the Inquiry is concerned, PHS was not operational. Responsibility for protecting the Scottish public from infectious diseases and environmental hazards fell to a different organisation, Health Protection Scotland, or HPS for short.

When PHS was created, many of the staff and functions of HPS were transferred over to PHS.

4

1 Moreover, it's important to understand that because of
2 the pandemic, at the time of PHS's launch, there
3 required to be a rapid rethinking of a number of plans
4 in relation to the organisation which had been put in
5 place over a number of years previously.

6 It's fair to say that the organisation faced
7 a number of coalescing and difficult challenges at that
8 time.

9 Despite the pressure of being very much on the
10 front line of the nation's response to dealing with the
11 pandemic, in September 2020 PHS published a three-year
12 strategic plan setting out its goals for Scotland,
13 focusing on four cross-cutting areas: Covid-19,
14 community and place, poverty and children, and mental
15 wellbeing.

16 The original strategy was strengthened in
17 November 2022 with the publication of a new three-year
18 plan. This plan built on the 2020 strategic plan and
19 set out PHS's purpose, as Scotland's national public
20 health body, to lead and support work across Scotland,
21 to prevent disease, prolong healthy life and promote
22 health and wellbeing.

23 PHS's publicly stated values include: respect,
24 collaboration, innovation, excellence and integrity.
25 PHS undertakes that going forward it will continue to do

5

1 curtailed their own lives and businesses to help protect
2 others.

3 The Government Office for Science and the current
4 and former Government Chief Scientific Advisers for whom
5 we speak wish to commit publicly to what we understand
6 to be the common goal of those participating in this
7 Inquiry, to examine what happened in order to inform and
8 improve the country's collective response to future
9 pandemics.

10 In these brief opening remarks, we thought it may
11 assist to deal with two topics. First, an overview of
12 what the Government Office for Science and SAGE are,
13 and, perhaps just as importantly, what they are not; and
14 second, an outline of the work that has been done to
15 learn lessons from the pandemic and some of the themes
16 that have been identified in that work.

17 Turning to the first of these topics, the Government
18 Office for Science, GO-Science as it's known, is a small
19 organisation. At its head is the Government's Chief
20 Scientific Adviser, the GSCA, who reports to the Cabinet
21 Secretary. Together, GO-Science and the GSCA provide
22 science advice to the Prime Minister and the Cabinet,
23 and promote and support the provision of science advice
24 in all government departments.

25 During government-wide emergencies, GO-Science

7

1 everything in its power to assist the Inquiry with its
2 work in whatever way it can. It will endeavour to
3 approach the Inquiry with openness, respect and candour,
4 underpinned by a genuine desire to learn and do better.
5 As a public body, PHS understands the responsibility it
6 owes, not only to the Inquiry but to the people of
7 Scotland, and it will do everything it can to meet those
8 responsibilities.

9 Thank you for listening.

10 **LADY HALLETT:** Thank you very much.

11 Now I think it's Mr Hill.

12 **Submissions on behalf of the Government Office for Science**
13 **by MR HILL**

14 **MR HILL:** My Lady, I represent the Government Office for
15 Science.

16 It is right to acknowledge at the start of this
17 Inquiry the enduring loss suffered by those affected by
18 the pandemic: those bereaved as a consequence of
19 Covid-19, those who were separated from their loved ones
20 and were not reunited, those who continue to live with
21 the life-altering effects of long Covid.

22 It is also right to acknowledge the wider public,
23 who took their own altruistic steps to counter Covid-19:
24 those who volunteered for clinical trials, those who
25 supported vulnerable people during lockdown, those who

6

1 convenes and provides secretariat support for SAGE, the
2 Scientific Advisory Group for Emergencies. SAGE is
3 generally chaired by the GSCA. During the pandemic it
4 was co-chaired by Sir Patrick Vallance, then GSCA, and
5 the Chief Medical Officer, Sir Chris Whitty.

6 SAGE is not a permanent standing committee, and it
7 does not have members. It exists only when it is
8 activated by COBR in response to an emergency. Its role
9 is to bring together experts relevant to that emergency,
10 to inform science advice in a way that is co-ordinated,
11 comprehensive and comprehensible.

12 Those who participate in SAGE and its sub-groups are
13 experts drawn from across the country, from inside and
14 outside government. Those who attend give independent
15 advice, their analysis drawn from their expertise and
16 experience.

17 It is important to note a few key points.

18 First, GO-Science, the GSCA and SAGE are not the
19 only formal sources of science advice to government,
20 even during an emergency. Different government
21 departments lead on different areas, which are related
22 to their own work and expertise. As we have heard, for
23 pandemic planning the Department of Health and
24 Social Care is the lead department and draws on its own
25 network of scientists, clinicians, public health experts

8

1 and so forth to inform its work.

2 Most government departments have their own Chief
3 Scientific Officers and their own structures and
4 processes by which science advice is provided internally
5 to senior civil servants and ministers. Organisations
6 such as the United Kingdom Health Security Agency
7 provide operational science and advice.

8 SAGE and the GSCA do not, could not, and would not
9 wish to establish a monopoly on science advice.

10 Second, the GSCA and SAGE do not make policy. They
11 provide evidence and advice to policymakers who weigh it
12 against other sources of evidence and advice, economic,
13 legal, ethical, political and, on occasion, national
14 security advice, in order for policy decisions to be
15 made.

16 In our democratic system, elected politicians make
17 those decisions and, in making them, are accountable to
18 Parliament and the electorate.

19 During the pandemic, at Sir Patrick's insistence,
20 SAGE published its minutes and its papers. Other areas
21 of advice were not made public and thus were not
22 subjected to the same level of debate and scrutiny.

23 A potential consequence of SAGE's transparency may
24 be that the science advice arising from SAGE was given
25 particular prominence in the minds of the media and the

9

1 self-examination and challenge began in the early stages
2 of the pandemic. In April 2020, Professor Sir Ian Boyd
3 was invited to observe SAGE meetings in order to provide
4 the chairs with feedback on group-think, optimism bias
5 and other matters. This was followed shortly after by
6 a review undertaken by Sir Adrian Smith, now president
7 of the Royal Society, at the request of the then GSCA.

8 These were the first of many reviews, all of which
9 are set out in the witness statements provided to
10 the Inquiry. The work is ongoing, in the form of the
11 SAGE development programme, which is designed to embed
12 the lessons learned in ways of working.

13 A number of documents, papers and reports touching
14 on a wide range of matters have been produced and
15 brought to the Inquiry's attention. Two may be
16 considered to be of particular significance. The first
17 is the technical report of the Covid-19 pandemic in the
18 UK published on 1 December 2022 that was produced by the
19 Chief Medical Officers and others, including
20 Sir Patrick.

21 The second is the 100 Days Mission, a document
22 produced under Sir Patrick's leadership as part of the
23 UK's Presidency of the G7, which addressed the specific
24 question of how to accelerate the discovery and
25 development of diagnostics, vaccines and therapeutics.

11

1 public in relation to policy.

2 It was, of course, an important input, but it was
3 never the only consideration, nor should it have been.

4 Third, the GSCA and SAGE are not responsible for the
5 operational delivery of science. For example,
6 establishing a testing programme. Nor are they
7 responsible for the way in which the science advice is
8 implemented in practice. For example, putting in place
9 procedures to lessen the risk of infection in schools,
10 hospitals or care homes. Those matters fall to other
11 departments and other organisations.

12 Fourth, the processes I've described are intended to
13 deal with all aspects of science advice in government at
14 all times. It must not be forgotten that most of the
15 work of the GSCA and GO-Science relates to a wide
16 variety of non-emergency matters.

17 Further, the pandemic was atypical, even for
18 an emergency situation, and was unprecedented in its
19 duration. There were 105 SAGE meetings over two years.
20 The most previously was 22 over seven months.

21 The scale and duration of the response posed
22 challenges and, at points, revealed vulnerabilities in
23 the way in which SAGE and GO-Science operated.

24 That brings me to the second topic, lessons learned.
25 The work of the GSCA and GO-Science on critical

10

1 GO-Science will listen carefully to the evidence
2 that is adduced, and that evidence and your Ladyship's
3 reports will inform its further work. It maintains
4 an open mind. It may be helpful, though, to share some
5 of the initial observations that have emerged from the
6 work undertaken to date. This is not intended as
7 an exhaustive list, and it is restricted to matters
8 relating to science and science advice, rather than
9 a wider assessment of factors that affected the course
10 of the pandemic.

11 First, the existence of SAGE and its sub-groups was
12 beneficial to the UK's response. Not every country had
13 an equivalent of SAGE and many of those that did not
14 sought to emulate it.

15 Second, while there may be an argument to establish
16 equivalent advisory groups on matters such as economics,
17 SAGE should continue to concern itself only with
18 science. It would be better for SAGE and any additional
19 groups to convene separately and present their distinct
20 outputs to politicians and decision-makers; it is for
21 them, and not the experts, to weigh the competing
22 factors against one another, made the trade-offs and
23 come to decisions on policy.

24 Third, those scientific areas in which the UK was
25 strong going into the pandemic were those in which it

12

1 did well: the quality and breadth of its science base;
2 expertise in genomic sequencing; expertise in
3 pharmaceuticals and vaccines; and the ability to mount
4 large-scale national clinical trials.

5 Conversely, areas of national weakness led to
6 vulnerability: the absence of a major domestic
7 diagnostic industry and difficulties in scaling up the
8 manufacture of diagnostics; the underlying health
9 inequalities and comorbidities within the UK population;
10 the lack of excess capacity in the NHS, even in normal
11 times; and challenges in scaling and operations of the
12 public health infrastructure, which raised questions
13 about the investment made in that system in preceding
14 years, and whether it had responded effectively to
15 previous pandemic threats.

16 You have heard from others the need to address
17 weaknesses. We agree and would add that there is also
18 a need to maintain strengths, including advances made
19 during the pandemic.

20 Fourth, and related, access to reliable and relevant
21 data is critical in responding to a pandemic, or indeed
22 any major emergency. Initially this was an area of
23 weakness, data were not available or were not shared or
24 could not be collated and analysed rapidly. This
25 hampered advice and resulted in underinformed decisions.

13

1 Unless I can assist further, my Lady, that's our --
2 **LADY HALLETT:** No, you're been very helpful, thank you,
3 Mr Hill.

4 Right, now I think it's Ms Scolding.

5 **Submissions on behalf of the Department of Health and**
6 **Social Care by MS SCOLDING KC**

7 **MS SCOLDING:** Good morning, my Lady. I appear together with
8 Mr Stein KC and we represent the Department of Health
9 and Social Care in this Inquiry.

10 We wish to start by expressing our heartfelt
11 condolences and deepest sympathies to all the families
12 who have lost loved ones to this pandemic, had their
13 lives disrupted and who have suffered the after-effects
14 on both their mental and physical health.

15 The pandemic touched every family in the nation, and
16 in many cases brought change, losses or absences which
17 can never be fully repaired. The department recognises
18 that the guidance it put in place often meant that
19 family and friends were unable to see their loved ones
20 for long periods of time, causing profound loneliness,
21 pain and anguish, the effects of which still endure for
22 many today and were so powerfully reminded to us by the
23 accounts given in the video yesterday.

24 In particular, people were unable to visit and
25 comfort loved ones who were unwell or dying, and were

15

1 This weakness was addressed and data collection, usage
2 and presentation improved markedly. A central question
3 for this Inquiry and for society as a whole is to
4 determine which data will be required in the event of
5 an emergency, how they can be shared, and how to
6 establish and maintain structures to achieve this.

7 Your Ladyship will see that these observations
8 reflect the three themes of the 100 Days Mission: timely
9 and continued investment in research and development;
10 maintaining capacity and best practice by embedding it
11 in everyday work; and agreeing in advance the rules of
12 the road, for example on which data is to be shared and
13 how.

14 These do not purport to be an entire answer to how
15 to prepare for a pandemic, but they are a necessary
16 starting point.

17 Finally, it would not be right to conclude without
18 acknowledging the extraordinary efforts of the many
19 scientists, academics and clinicians who assisted SAGE
20 and its sub-groups. The workload was formidable and the
21 pressure intense. They stepped forward voluntarily and
22 at considerable cost to personal and family lives. They
23 did so not for personal advancement or financial gain,
24 but to help. Their work saved many lives, and the
25 country was fortunate to be able to call upon them.

14

1 unable to undertake the important rituals surrounding
2 death which are so vital for catharsis and expressing
3 a shared grief. Not being able to attend and say
4 goodbye at a family funeral was a nightmare for so many
5 of us. The stoicism and forbearance shown and the
6 sacrifices made by so many will never be forgotten.

7 The department also wishes to thank each and every
8 person working within its own staff, in health and
9 social care, in hospitals, care homes and in the
10 community, in public health bodies, in local government,
11 in the armed forces, in charities and the voluntary
12 sector, as well as the hundreds of thousands of family
13 carers who sought to keep their loved ones safe at
14 considerable cost to their own physical and mental
15 health in very many cases. The dedication and
16 compassion shown by these individuals at very short
17 notice and the efforts they made to provide comfort and
18 support were nothing short of heroic, and we salute
19 them.

20 We must also thank each and every person who changed
21 their behaviour to protect those who were most at risk
22 of being affected by the pandemic. The advice the
23 department gave and the measures it was required to
24 recommend needed the consent of the population.

25 Everyone who stayed at home, often to the detriment of

16

1 their mental health, their financial health, their
 2 education and their personal and professional
 3 relationships, helped keep us all safer. Without this
 4 agreement, many more people would have lost their lives.
 5 The resilience, determination and swift response by the
 6 population made a tremendous difference. The aim of the
 7 department and those working in it was at all times to
 8 save lives, minimise serious illness and protect health
 9 and care. Particularly during the first six months of
 10 the pandemic, when less was known about the virus and
 11 its transmission, there was frequently a need to issue
 12 guidance or create policies where there were, in
 13 reality, no good options.

14 The department recognises the strength of feeling
 15 amongst some that certain of the decisions made by us
 16 were wrong. For example, some people feel that lockdown
 17 should have been introduced earlier and for longer.
 18 Others hold an opposite and contrary view. What the
 19 department was often faced with were a choice between
 20 a series of wholly unpalatable options, all of which
 21 were certain to have negative impacts on the citizens of
 22 the United Kingdom in one way or another. Decisions
 23 were often extremely finely balanced. Contrary
 24 decisions could rationally have been made, resulting in
 25 a very different set of outcomes. The department will

17

1 framework of the Department of Health and Social Care,
 2 to which I have no doubt many people shall be relieved.
 3 Our role is predominantly to support ministers to help
 4 people lead more independent, healthier lives for
 5 longer. Its job is to set in place the framework so
 6 that our NHS can function and deliver exceptional
 7 healthcare to the population, and to provide care
 8 services for the most vulnerable in our society.

9 The organisational framework for delivering such is
 10 complex and dispersed amongst a large number of bodies
 11 in central government, in arm's length bodies related to
 12 central government, in local government, in charitable,
 13 voluntary and for-profit organisations. At the time of
 14 the pandemic, for example, there were 152 local
 15 authorities, 213 hospital trusts, 191 clinical
 16 commissioning groups, 34,000 general practitioners, and
 17 around 25,800 registered adult social care
 18 establishments, by which I mean both domiciliary,
 19 ie non-residential, and residential services.

20 The demands on both health and social care services
 21 have increased greatly over the past 20 years, as people
 22 live longer and breakthroughs in treatment and
 23 technology enable those with disabilities to thrive in
 24 an ever broader range of activities. Seeking to manage
 25 and provide guidance, support, equipment, services and

19

1 not seek, during the course of this Inquiry, to say that
 2 it did everything right or that it would necessarily
 3 have made the same decisions today, in 2023, with the
 4 benefit of hindsight. We will, however, propose that it
 5 is necessary to recognise that the context of the time,
 6 particularly in respect of pandemic preparedness, was
 7 very different to what we know now, and would ask you,
 8 my Lady, not to impose what we shall call a retro-scope
 9 upon decision-making.

10 Covid-19 has not gone away. The department and all
 11 of those providing health and social care in Britain are
 12 still fighting it, even though effective vaccines and
 13 treatments mean that its impact is very much reduced.
 14 There are new variants which require further work to be
 15 undertaken and people are still becoming ill, sometimes
 16 seriously. Those with clinical vulnerabilities are also
 17 leading more restricted lives in some cases. The
 18 after-effects of Covid are profound on the mental and
 19 physical health of the nation, as I've mentioned, and
 20 not least on those whose treatment may have been paused
 21 for other diseases and illnesses because of the
 22 pandemic.

23 The job of the department is to remain vigilant and
 24 to keep caring for those who require it.

25 I shall not, my Lady, be setting out a detailed

18

1 policies during the pandemic was a Herculean task and
 2 was the greatest challenge ever faced by the NHS and the
 3 adult social care sector.

4 You will hear the department referring to various
 5 documents as "battleplans" or "operations" precisely
 6 because it was an all-consuming period akin to a war,
 7 and mobilisation was required in every organisation in
 8 the United Kingdom and with every person.

9 We approach this Inquiry with humility. We know
 10 that there are valuable lessons to be learned. We are
 11 open-minded to learn what others say about our processes
 12 and procedures both before and during the pandemic and
 13 the decisions we took.

14 By the end of 2020, everyone was thoroughly sick of
 15 the word "unprecedented", but that is the most accurate
 16 description of what happened. This module is dealing
 17 with the plans that were put in place in advance of that
 18 period of time. Before the pandemic started, they were
 19 regarded by various international bodies as
 20 world-leading. Some of those plans did help during the
 21 pandemic, and our evidence to this Inquiry points out
 22 where that is the case. An obvious example was the work
 23 which had been undertaken following the Ebola outbreak
 24 in 2015 to put additional money into vaccine research,
 25 and the setting up by the previous Chief Medical

20

1 Officer, Dame Sally Davies, of the National Institute
2 for Health and Care Research, which brought together and
3 aided research funding, again enabling a vaccine to be
4 developed quickly by the UK's scientists.

5 Operation Cygnus, which was the exercise you heard about
6 yesterday, undertaken in 2016, about planning for a flu
7 pandemic, was also instrumental as it allowed the
8 United Kingdom to have draft legislation which was then
9 easily adapted for use during 2020.

10 However, the department does wish to identify areas
11 where, in particular, it has sought to learn from what
12 went well and also what did not go well in respect of
13 preparedness, to enable it to prepare better for future
14 pandemics and other catastrophic risks to the nation's
15 health and well-being. These are best encapsulated by
16 the following five issues.

17 First, we need a toolkit of capabilities which can
18 adapt to deal with whatever public health risk emerges,
19 rather than a fixed plan against specific threats or
20 viruses. Plans are important, but they are only as good
21 as the core capabilities upon which they are based.
22 This is the case for all measures which need to be taken
23 during pandemics. For example, the provision of
24 scientific advice, research, surveillance and data; the
25 development of vaccines, diagnostics, testing and

21

1 level of built-in resilience, for there to be a good
2 pipeline of medical supplies and for a workforce with
3 the experience and numbers to cope.

4 The underlying health of the population and health
5 inequalities also matter in the ability of our country
6 to respond to new health threats. For example, the
7 increasing age profile, levels of obesity, smoking or
8 pre-existing comorbidities.

9 Third, any pandemic planning must include the
10 ability to surge and scale up quickly in the first few
11 months. Planning for preparedness and response
12 capability in the future must address areas which have
13 to be prepared in advance, for example, stockpiles of
14 antivirals, stockpiles of therapeutic measures,
15 stockpiles of PPE, whilst we learn more about the
16 disease and start to develop specific medical
17 countermeasures.

18 Planning must also consider provision in areas where
19 an immediate response is required, for example the
20 ability to buy disease-specific vaccines or to establish
21 large-scale trials very quickly. We need to consider
22 how we cope in the first few months of a pandemic so
23 that our resources can be mobilised effectively and
24 scaled up to meet the country's needs.

25 Fourth, diagnostic surge capacity was a particular

23

1 therapeutics; the system of regulation of medicines and
2 medical products; stockpiles of medicines, vaccines and
3 other material, including PPE; the maintenance of
4 manufacturing capacity for testing, therapeutics, PPE
5 and other pieces of equipment and medicine which is
6 sited within the United Kingdom; and a legislative
7 framework to enable actions to be implemented swiftly.
8 Areas where the UK has relative strengths performed well
9 during this pandemic. Where there was weakness or
10 fragility, the response was not as good.

11 Secondly, the underlying resilience of the health
12 and social care system really matters, because a strong
13 system of public health and social care is needed to
14 fight future risks effectively. Indeed, a resilient
15 system, limited health inequalities, and a generally
16 healthy population will be more likely to be able to
17 cope with shocks of any kind. Levels of core capacity
18 for day-to-day health and care services which must be
19 resilient need to include specialist laboratories which
20 can be expanded to meet demand rapidly, NHS general,
21 critical and intensive care beds, with bed occupancy
22 levels at a sustainable level, and appropriate and safe
23 staffing.

24 There is also a need for social care services both
25 at home and in residential settings to maintain a high

22

1 weakness in the past pandemic. The initial scientific
2 and technical responses by way of genomic sequencing of
3 the virus and the development of the test was good,
4 reflecting our exceptional scientific community's hard
5 work and collaboration. Our end position of being able
6 to provide over 1 million tests a day was amongst the
7 best in the world, but it was very difficult to scale up
8 testing in the first stages of this pandemic to the
9 number and speed required, and it was an area of
10 significant weakness compared to our international
11 competitors and comparators.

12 Fifth, pandemic preparedness in the future should
13 take account of and be responsive to all five routes of
14 transmission of communicable disease: respiratory,
15 touch, oral, blood, or by vector, for example an insect.

16 Covid-19 and flu are both respiratory diseases. The
17 last major pandemic within the UK was HIV, which was
18 sexually transmitted and required a very different
19 response, and unfortunately there is still no effective
20 vaccine for it. We need, as Professor Van Tam
21 infamously said, very many shots at the goal the next
22 time round.

23 We must recognise that future pandemics will be
24 unexpected and will present new challenges. We need to
25 be prepared for the worst by maintaining the resources

24

1 and core capabilities that underpin a resilient health
2 and care system, and a healthy population, alongside
3 contingency arrangements to scale up quickly.

4 The department recognises that the role of the
5 government is not just to ensure that the UK is
6 prepared, but also to assist other countries with
7 pandemic preparation and support, including
8 surveillance, therapeutics and vaccines, to limit the
9 spread of future diseases. This is not entirely
10 altruistic, but must be seen as part of the strategy to
11 protect the United Kingdom.

12 Finally, the department is well aware that many will
13 argue that extra resource in health and care is part of
14 the answer to improved pandemic preparedness. It is
15 this department's role to advise on strategies and
16 policies to help, as I have already said, people live
17 more independent, healthier lives for longer, and to
18 deliver health and social care support that they need in
19 a way which is of the highest quality, efficient and
20 cost-effective.

21 It is, however, the job of the government as a whole
22 to make and implement decisions on the level of
23 resourcing, balanced against competing demands from
24 other departments. In this regard, fiscal and economic
25 resilience will always be vital to the country's ability

25

1 The question is one that requires a timely answer,
2 and it is a significant achievement of this Inquiry that
3 Module 1 has been brought so swiftly to a hearing.

4 The scale of the preparation by the Inquiry team and
5 the core participants is considerable, and it bodes well
6 for the efficient completion of the hearings in line
7 with the timetable you have recently announced.

8 As Mr Keith's opening statement illustrated, the
9 question about the adequacy of this country's
10 preparedness will not be a straightforward one to
11 answer. Much turns on an assessment of structures,
12 policies and procedures in the four nations, and
13 although they shared some institutional arrangements and
14 framework strategies and policies, such as the UK's 2011
15 pandemic influenza strategy, there were material
16 differences between them all and their application by
17 the devolved governments.

18 Much will also depend on whether the assessment
19 contained in the UK National Risk Register that the
20 pandemic influenza was the greatest risk confronting the
21 country was reasonable.

22 In addressing the question whether the UK was
23 adequately prepared, the Welsh Government has
24 co-operated fully with the Inquiry and will continue to
25 do so. Scrutiny may sometimes be difficult, even

27

1 to resource the needs of its citizens, both in ordinary
2 life and in future crises of this nature.

3 In short, the department welcomes the work of this
4 Inquiry, recognises its importance in shaping future
5 preparedness, and in assessing the numerous decisions
6 taken in meeting the demands of the Covid pandemic. The
7 department is here to assist with the work of the
8 Inquiry in whatever way we can, and the department is
9 committed to making sure that this country is ready to
10 face the challenges presented by any and all future
11 diseases.

12 Thank you for listening.

13 **LADY HALLETT:** Thank you very much indeed.

14 Mr Kinnier.

15 **Submissions on behalf of the Welsh Government by**
16 **MR KINNIER KC**

17 **MR KINNIER:** My Lady, good morning. I appear on behalf of
18 the Welsh Government before you today.

19 The pandemic touched the lives of everyone, but none
20 more so than those who lost loved ones. As was so
21 powerfully demonstrated in yesterday's impact film, the
22 bereaved are rightly seeking an answer to the question
23 which lies at the heart of this module: were the
24 governments of the United Kingdom adequately prepared
25 for the Covid-19 pandemic?

26

1 uncomfortable, but it is necessary. That is because
2 fair but unsparing scrutiny is vital to make sure that
3 the four nations of the United Kingdom are best prepared
4 for any future health emergency.

5 The Welsh Government made clear at the outset that
6 it would play its full part in helping and supporting
7 the Inquiry's work. To that end, in addition to giving
8 very significant disclosure, the Welsh Government has
9 provided 18 statements in Module 1 alone. Five
10 statements came from present ministers, including the
11 First Minister of Wales, and former ministers, and
12 13 were given by past and present senior officials.

13 Their statements answer the questions that
14 the Inquiry asked, and each and every one of the makers
15 of those statements is ready to help your work further.
16 Indeed, a number have been called to give oral evidence
17 in due course.

18 As you know, the Welsh Government's statements
19 address in detail the resilience and preparedness
20 structures in Wales, the NHS in Wales, and its links to
21 preparedness and resilience and the provision of
22 scientific, technical and medical information in Wales.
23 Those matters were addressed at length as well as
24 the Inquiry's questions about what was considered to
25 have worked well in relation to preparedness and,

28

1 equally, what was thought not to have worked well. The
2 detail of those views will surely be considered further
3 in examination.

4 The Welsh Government did not wait for the Inquiry's
5 call for evidence and hearings to examine what had
6 worked and what did not work. Before the first wave of
7 the pandemic started to retreat, in June 2020, the
8 Welsh Government started critically to examine its own
9 response and to identify recommendations for
10 improvement.

11 The resulting analyses have all been disclosed to
12 the Inquiry. Undoubtedly the conclusions of those
13 analyses will inform Counsel to the Inquiry's
14 examination of Welsh Government witnesses and your
15 report in due course.

16 The Inquiry's work may also be assisted by the work
17 of others who have analysed the substance of the
18 Welsh Government's response to the pandemic.
19 For example, Parliamentary consideration of the
20 Welsh Government's response by the various committees of
21 the Senedd, reviews by Welsh regulatory bodies such as
22 Estyn, the inspectorate of training and education in
23 Wales, Healthcare Inspectorate Wales, the Care
24 Inspectorate Wales and the Equality and Human Rights
25 Commission, and, finally, audit work carried out by the

29

1 broader socio-economic inequalities.

2 One important point that Mr Keith drew out yesterday
3 is the broad question of resilience, that is to say the
4 country's ability to respond to and to recover from
5 a whole system emergency such as Covid-19.

6 It is much more than an analysis of structures,
7 policies and procedures, although they are important.
8 It is concerned with whether the country has invested
9 sufficiently, both in terms of people and resources, to
10 weather and recover from an emergency such as the
11 pandemic.

12 The Welsh Government's evidence makes clear that
13 a central element, in its view, of Wales' resilience was
14 the policy of steadily increasing investment in the
15 Welsh NHS in the years before 2020, and in
16 an environment where austerity significantly limited the
17 available funding.

18 That important point of context will be
19 a significant feature in the assessment of preparedness.

20 Another feature of resilience was the
21 well established and effective working relationships
22 that had developed between the Welsh Government, local
23 health boards and Welsh local authorities in the years
24 before the pandemic, as was reflected in the Welsh Local
25 Government Association's submissions yesterday

31

1 independent body, Audit Wales, particularly in relation
2 to PPE.

3 The Inquiry will undoubtedly examine
4 Welsh Government witnesses on the substance of the
5 lessons learned from its responses to the pandemic and
6 what they may say about the strengths and weaknesses of
7 preparedness arrangements in January 2020.

8 One theme which emerges from the evidence is that
9 those arrangements provided a useful foundation for the
10 Welsh Government's response. That said, when the
11 pandemic started, adaptability and flexibility were
12 required of decision-makers and all those responsible
13 for carrying out the response.

14 The Inquiry will examine whether the degree of
15 adaptability and flexibility that was required could or
16 indeed should have been reasonably anticipated before.

17 The Inquiry will also rightly shine a light on the
18 extent to which detailed consideration was given to the
19 impact of the pandemic and the response on health and
20 other inequalities.

21 Although the general impact on vulnerable persons
22 was considered, it is fair to say that more detailed
23 work could have been done to identify the particular
24 effect of a pandemic and its response on those with
25 particular health or impairment issues, as well as

30

1 afternoon.

2 Those good working relationships were an essential
3 and necessary feature of effective preparedness and they
4 greatly assisted the response to the pandemic in Wales.
5 That too may be an issue that will be explored in due
6 course.

7 The Inquiry investigation in Module 1 is rightly
8 alive to the overarching political context in which the
9 adequacy of preparedness will come to be assessed in the
10 years before 2020. A significant and arguably the
11 dominant factor of that context will be the preparations
12 for the United Kingdom's departure from the
13 European Union and in particular the planning for
14 a no-deal exit.

15 The extent to which Brexit-related preparation and
16 planning consumed the attention of all four governments
17 in the UK from 2017 onwards cannot be underestimated.
18 It is clear that Brexit preparations were the reason why
19 the work of the UK's pandemic influenza review board was
20 substantially paused in 2018. That said, it is also
21 clear that preparations for a no-deal departure required
22 both ministers and officials to consider the
23 consequences of a whole system emergency, work which
24 bore fruit when the pandemic struck.

25 My Lady, may I finally turn to the question of

32

1 recommendations.

2 A fundamental part of this Inquiry's work is the
3 formulation of efficient and effective recommendations
4 that put right any deficiencies or flaws that are found
5 to exist. The Inquiry provides an invaluable forensic
6 context in which to identify and analyse the merits of
7 proposed measures.

8 My Lady will know better than most, from her
9 experience following the 7/7 bombings, that some
10 proposals may, at first blush, seem attractive or indeed
11 consistent with a perception of common sense but which,
12 on analysis, are found to be unlikely to address the
13 identified problem effectively, or indeed transfer the
14 risk elsewhere, or maybe even heighten that risk.

15 Consideration of recommendations may not therefore
16 be a straightforward exercise. How the Inquiry will
17 identify and consider them will be an important feature
18 of your work, in which the Welsh Government stands ready
19 to help.

20 At this stage, one matter which the Inquiry may wish
21 to consider is whether, and if so to what extent,
22 intergovernmental arrangements for the sharing and
23 commissioning of expert advice may be improved.

24 Some institutional reforms have already been
25 implemented, primarily addressed at enhancing the nature

33

1 My theme this morning is one of commitment,
2 commitment to the Chair, to the Inquiry process, and to
3 the people of Scotland. That commitment is to assist
4 and to co-operate with the Inquiry, to listen to the
5 evidence and to learn lessons that might flow from that
6 evidence.

7 Before going any further, on behalf of the
8 Scottish Government I would like to recognise the loss
9 suffered by the people of Scotland and the wider UK
10 population during the pandemic.

11 Everyone suffered, and many thousands lost their
12 lives. That loss is felt, understood, and acknowledged
13 by the Scottish Government. Indeed, how could it be
14 otherwise?

15 The people of Scotland are resilient, they responded
16 to the challenges of Covid-19, and together Scotland
17 emerged from the pandemic. Yet the cost was high.
18 Certain sections of Scottish society suffered more than
19 others. Legitimate questions arise as to whether the
20 suffering needed to have been quite so great.

21 The continuing goal of the Scottish Government is to
22 build a resilient Scotland that is able to protect all
23 its citizens from risks that emerge to threaten the
24 safety of modern day society. Therefore, let me repeat
25 one of the commitments that I have already given: the

35

1 and quality of intergovernmental liaison between the
2 heads of government of the four nations.

3 However, the clear and consistent evidence is that
4 Welsh Government was unable to draw more directly upon
5 the UK Government's very considerable and comparatively
6 greater expert scientific resources so as to better
7 inform their own decision-making.

8 My Lady, in conclusion, we come before you
9 recognising that there will be lessons to be learned in
10 relation to preparedness. Finally, thank you for the
11 work that you and your team have already undertaken and
12 for the very much more substantial work that is to come.
13 The Welsh Government will continue to assist the Inquiry
14 in any which way it can.

15 **LADY HALLETT:** Thank you very much indeed.

16 Now, I think we have Mr Mitchell for the
17 Scottish Government.

18 **Submissions on behalf of the Scottish Government by**
19 **MR MITCHELL KC**

20 **MR MITCHELL:** Good morning, my Lady. I appear at these
21 public hearings on behalf of the Scottish Government.
22 I appear along with my juniors, Fiona Drysdale and
23 Jennifer Nicholson-White, and we are instructed by
24 Caroline Beattie of the Scottish Government Legal
25 Directorate.

34

1 Scottish Government comes here to listen and is eager to
2 learn how its processes, structures and policies on
3 preparedness could be improved.

4 Let me say something about Scotland's resilience
5 system, which Mr Keith touched on briefly yesterday.

6 The Scottish Government has taken an approach over
7 many years to build resilience capacity to deal with any
8 risks faced by the country, including preparing for
9 a pandemic. The Scottish Government approached pandemic
10 risks in the way that it approached any risk. Often
11 they prepared in partnership with the UK Government and
12 other devolved administrations, on what is sometimes
13 called a four nations basis.

14 It may be helpful if I take some time here to set
15 out in brief terms the resilience system as it exists in
16 Scotland.

17 In general terms, the development of resilience in
18 Scotland has focused on consequences, not causes. In
19 other words, an all-risks approach is adopted whereby
20 planning can be adapted readily to fit a wide range of
21 issues.

22 Within the Scottish Government there are, broadly
23 speaking, two functions to preparedness. The first is
24 a central managerial function. Here, a central
25 resilience division of Scottish Government works with

36

1 different branches of the government and public bodies
2 to assess a whole range of risks, whether that be a risk
3 of flooding or a risk of terrorism.

4 In the case of the assessment of a pandemic risk,
5 there is close co-operation between the resilience
6 divisions, the health and social care department of
7 Scottish Government, and NHS boards. Should an incident
8 or emergency arise, the Scottish Government Resilience
9 Room can meet to co-ordinate and direct actions designed
10 to respond to the incident. During the Covid-19
11 pandemic, the Resilience Room met on a regular basis and
12 a frequent basis and was often chaired by either the
13 First Minister or the Deputy First Minister.

14 The second function supports the development and
15 delivery of the plans that deal with risks and
16 emergencies. This is underpinned by the Civil
17 Contingencies Act of 2004, of which we have already
18 heard. That seeks to minimise disruption in the event
19 of an emergency, and to ensure that the UK is better
20 prepared to deal with these emergencies.

21 Whenever there is an emergency in Scotland,
22 different organisations work together to tackle it.
23 Depending on the nature of the incident this might
24 include Police Scotland, the Scottish Fire & Rescue
25 Service, health boards or local authorities.

37

1 have long acknowledged and valued the contribution to
2 national resilience that is made by the wide range of
3 bodies in the third sector, the private sector, and
4 community groups which activate in response to emergency
5 events.

6 To support collective discussion around the
7 all-risks approach to preparedness and response
8 arrangements, the Scottish Government hosts regular
9 meetings of the voluntary sector resilience partnership.
10 This partnership brings these parties together to build
11 connections, relationships and an understanding of each
12 other's capacity and capabilities to enable better
13 planning and co-ordination around emergency response
14 arrangements.

15 In this way, and assisted by Scottish Government
16 guidance contained in a series of documents entitled
17 "*Preparing Scotland: Scottish Guidance on Resilience*",
18 which was published from 2016, organisations within
19 Scotland are able to plan for emergencies at a local and
20 regional level. This is, in fact, a simple and easily
21 understood structure. It was within this structure that
22 pandemic preparations were made.

23 With mention of pandemic preparation, it may be
24 useful for interested observers to know a little about
25 the Scottish Government's preparation for a pandemic.

39

1 These organisations form something called
2 a "resilience partnership", which structure allows them
3 to co-ordinate, collaborate and to share information.
4 The structure which supports multi-agency co-ordination
5 is the regional resilience partnership. There are three
6 regional resilience partnerships, in the north, in the
7 east and in the west of Scotland. Within each regional
8 partnership sits several local resilience partnerships,
9 the composition of which are determined by the regional
10 partnerships. The regional partnerships and the local
11 partnerships bring together all the relevant
12 organisations in an area to develop an effective
13 approach in dealing with emergencies.

14 Also supporting the second function of development
15 and delivery is the Scottish Resilience Partnership.
16 This is a core group of the most senior statutory
17 responders and key resilience partners. The group acts
18 as a strategic policy forum for resilience issues,
19 providing assurance to ministers that statutory
20 responders and key resilience partners are aware of any
21 significant resilience gaps and priorities, and that
22 they are addressing these. It provides advice to the
23 resilience community on how best to ensure that Scotland
24 is prepared to respond effectively to major emergencies.

25 The Scottish Government and statutory responders

38

1 The Scottish Government's approach to pandemic
2 planning was guided by three things: firstly, advice
3 from scientists and experts from the UK and the World
4 Health Organisation; secondly, by best practice; and
5 thirdly, by prior experience.

6 Preparations were, again, made at a national,
7 regional and local level. Some preparations were also
8 made at a four nations level, thus, for example, the
9 Scottish Government collaborated in the development of
10 the UK Influenza Pandemic Preparedness Strategy from
11 2011, of which we have heard already.

12 This document provided background information and
13 gave guidance to organisations for developing plans.
14 Further, close links existed and continue to exist
15 between the Chief Medical Officer for Scotland and the
16 Chief Medical Officer for the other nations, thereby
17 allowing the exchange of information on pandemic risk.
18 In addition, Scottish officials participated in
19 a UK government-led pandemic readiness flu board.

20 Turning to plans made at a Scottish national,
21 regional and local level, the Scottish risk assessment
22 published in 2018, which we have also heard of,
23 supplements the UK national risk assessment. It
24 identified and analysed ten actual risks facing
25 Scotland, including pandemic influenza, which was

40

1 identified as having a high likelihood of occurring.
 2 The risk assessment provided a means by which local and
 3 regional organisations could prepare and respond to the
 4 risks identified.

5 In 2017, the Scottish Government established its own
 6 pandemic flu preparedness board designed to drive
 7 forward particular aspects of pandemic preparation in
 8 Scotland, often on devolved matters.

9 The Scottish Government participated in a UK-wide
 10 pandemic influenza exercise, Exercise Cygnus, in 2016.
 11 In 2015, it ran its own Scottish-wide pandemic influenza
 12 exercise called Exercise Silver Swan, and in 2018
 13 Exercise Iris assessed NHS Scotland's response to
 14 a suspected outbreak of Middle East Respiratory
 15 Syndrome.

16 The combined effect of these and other preparations
 17 was that across Scotland the Scottish Government,
 18 together with organisations from health boards to local
 19 authorities, had in place influenza pandemic
 20 preparedness plans.

21 Now, of course it has to be recognised that such
 22 plans were not an exact match for a coronavirus
 23 pandemic. However, many of their features could be
 24 adapted, and the lessons learned while preparing for
 25 an influenza pandemic were of great benefit when

41

1 COSLA, the result was a single authoritative source of
 2 information and advice, a one-stop shop, if you will,
 3 that public and private sector leaders could call upon.
 4 This was invaluable during the Covid-19 pandemic.

5 The second measure that I should mention was
 6 a series of protocols for the management of public
 7 health incidents including infectious diseases. First
 8 published in 2003 and updated thereafter, the *Management*
 9 *of Public Health Incidents: Guidance on the Roles and*
 10 *Responsibilities of NHS led Incident Management Teams*
 11 contained information that NHS boards and local
 12 authorities could use when preparing for or in response
 13 to a public health or environmental event or incident.

14 These were well established protocols that were of
 15 great practical benefit during the pandemic.

16 In summary, therefore, my Lady, the
 17 Scottish Government has incrementally built on its
 18 pandemic resilience capability over many years. It has
 19 thought carefully about potential risks and has prepared
 20 to the best of its ability. But, of course, the
 21 devastating effect of the Covid-19 pandemic has shown
 22 that there are many lessons to be learned and
 23 improvements that can be made. The Scottish Government
 24 has already taken steps to address this, in part through
 25 the setting up of the Standing Committee on Pandemic

43

1 responding to the Covid-19 pandemic.

2 It should also be recognised that for much of this
 3 period the Scottish Government had to make budgetary
 4 decisions within a climate of austerity and with many
 5 other competing demands on the public purse from across
 6 different policy areas of government and the Scottish
 7 Parliament.

8 Further, in 2018 and 2019, pandemic preparations had
 9 to compete with preparations for a possible no-deal
 10 departure from the EU for the attention of experienced
 11 resilience personnel.

12 Before leaving this topic I should mention two
 13 measures that helped greatly with management of the
 14 pandemic. The first is the reform of public health
 15 structures. In April 2020 a series of reviews, co-led
 16 by the Scottish Government and the Convention of
 17 Scottish Local Authorities, or COSLA, culminated in the
 18 establishment of Public Health Scotland, and we heard
 19 first thing this morning from Mr Bowie, who represents
 20 Public Health Scotland. This unique body brought under
 21 one roof responsibility for the collection of
 22 health-related data, the thinking to address society's
 23 health issues, and the making of improvements to the
 24 health system.

25 Jointly accountable to the Scottish Government and

42

1 Preparedness. This is an advisory group bringing
 2 together scientists and technical experts to advise the
 3 Scottish Government preparing for future risks from
 4 pandemics.

5 Yet it is not only in the field of science where
 6 improvements can be made. The pandemic revealed in
 7 stark terms that a healthy and prepared nation is one
 8 where inequalities are not tolerated. The eradication
 9 of inequalities in health and social care and the
 10 building of a healthier Scotland has been a priority for
 11 the Scottish Government for several years now.

12 The Christie Commission on the Future Delivery of
 13 Public Services, from 2011, the Public Bodies (Joint
 14 working) (Scotland) Act 2014, and the *Review of Public*
 15 *Health in Scotland: Strengthening the Function and*
 16 *re-focusing action for a healthier Scotland*, from 2015,
 17 are all evidence of the Scottish Government's commitment
 18 in this area.

19 Yet more remains to be done. We would submit that
 20 the candour displayed in the witness statements which
 21 have been produced to the Inquiry on behalf of the
 22 Scottish government are testament to the
 23 Scottish Government's willingness to listen, to learn
 24 and to adapt.

25 The Scottish Government is grateful to my Lady for

44

1 the opportunity to make this opening statement. It has
2 been a necessarily brief and high-level overview of the
3 resilience system in Scotland and the pandemic
4 preparation that took place. We hope it has been of
5 assistance to the Inquiry, but we also hope that to
6 those listening and watching the Inquiry process it has
7 provided some insight into some areas that they may not
8 have heretofore known about.

9 My team and I hope that we can be of assistance to
10 my Lady and to her team in the weeks to come.

11 Thank you.

12 **LADY HALLETT:** Thank you very much indeed.

13 We'll break now. I shall return at 11.20.

14 (11.05 am)

(A short break)

16 (11.20 am)

17 **LADY HALLETT:** Right, now we have Mr Sharpe.

18 **Submissions on behalf of The Executive Office Northern
19 Ireland by MR SHARPE KC**

20 **MR SHARPE:** Good morning, my Lady.

21 I'm afraid I'm hidden from direct vision by the
22 pillar on your left, but I can assure you that I am
23 present and here.

24 **LADY HALLETT:** I thought we were going to try to make sure
25 that those who speak weren't behind a pillar, Mr Sharpe,

45

1 The model of devolution in Northern Ireland is
2 radically different to others in the UK or, indeed,
3 Westminster.

4 The remit of the Executive Office is to contribute
5 to and oversee the co-ordination of executive policies
6 and programmes in order to improve the economic, social
7 and environmental well-being of the population.

8 Within this remit, TEO has policy responsibility for
9 civil contingency planning matters, specifically for the
10 co-ordination of civil contingencies and emergency
11 planning, including the wider consequences of disease
12 outbreaks, as in this catastrophic case.

13 The First Minister and deputy First Minister are
14 joint ministerial heads of the Executive Office. They
15 are accountable to the Northern Ireland Assembly for
16 their policies and programmes, and for the activities of
17 the department, including its arm's length bodies.

18 All civil servants in the Executive Office operate
19 under their direction and control in discharge of their
20 functions.

21 The Head of the Northern Ireland Civil Service, also
22 referred to as HOCS, was the Permanent Secretary to the
23 Executive Office during the period under investigation
24 in this module. In June 2021, the Northern Ireland
25 Civil Service created a new Permanent Secretary role

47

1 I'm sorry.

2 **MR KEITH:** My Lady, I think that really is beyond
3 unfairness.

4 Would you like to move?

5 **MR SHARPE:** Perhaps I can move across, yes.

6 (Pause)

7 **LADY HALLETT:** I knew from the outset these pillars were
8 going to be a problem.

9 (Pause)

10 Right, now you need to make sure you've got
11 a microphone. Yes.

12 (Pause)

13 **MR SHARPE:** Thank you very much for all of the assistance
14 offered by my colleagues.

15 My Lady, thank you for this opportunity to address
16 the Inquiry and all those who have been touched by the
17 tragedy of the UK Covid-19 pandemic.

18 I represent the Executive Office, which I will also
19 refer to as the TEO. One of the nine government
20 departments in Northern Ireland, TEO supports the
21 Northern Ireland Executive, which is made up of five
22 different political parties in a mandatory coalition.
23 Each of the nine departments are independent, and
24 matters only come to the Executive for decision-making
25 if they are significant, controversial or cross-cutting.

46

1 within the TEO to lead the policy agenda and delivery.
2 Dr Denis McMahon was appointed as Permanent Secretary on
3 26 July 2021.

4 My Lady, we will hear from Dr McMahon in due course
5 during this module.

6 During the response period the Head of the Civil
7 Service chaired the Civil Contingencies Group, or CCG.
8 The CCG is the principal preparedness body for the
9 public sector in Northern Ireland.

10 The one thing that is important to note, my Lady, is
11 that you will have seen that there were no ministers in
12 government in Northern Ireland between 16 January 2017
13 and 11 January 2020. The Executive Office performed its
14 functions during that period within the constitutional
15 confines that applied. In this respect, my client was
16 acutely aware of the importance placed by the Inquiry on
17 the question of any impact of the absence of
18 an Executive in that period.

19 The ministers returned to office on 11 January 2020,
20 and the Minister of Health attending the first COBR
21 meeting on 29 January 2020. Clauses for the inclusion
22 in the Coronavirus Act were discussed at the Executive
23 meeting on 17 February 2020. There was a special CCG
24 Covid-19 officials meeting on 20 February 2020, and
25 advice went to ministers on 3 March 2020 setting out the

48

1 command, control and communications -- or C3 --
2 arrangements that would apply.

3 It's also relevant to mention EU exit. TEO has also
4 noted the evidence provided in terms of EU exit and the
5 interest of the Inquiry in this issue. The EU exit
6 arrangements, including Operation Yellowhammer, had
7 a number of very significant impacts on contingency
8 planning arrangements across the UK. Given the unique
9 circumstances which applied to Northern Ireland and the
10 political sensitivities, the effects were more
11 pronounced.

12 Austerity. The impact of austerity has also been
13 raised in the evidence to date. This is an important
14 aspect of the Inquiry which can help to set the context
15 for TEO's evidence, specifically in terms of reduced
16 staffing in the Northern Ireland Civil Service and also
17 in terms of wider public service sustainability.

18 The Executive Office is determined that the
19 knowledge, recommendations and lessons identified by
20 this Inquiry will be treated with the utmost seriousness
21 and importance. TEO can guarantee you and those who
22 have suffered such profound loss that the department
23 will not be found wanting in responding to and
24 comprehensively addressing changes recommended by
25 the Inquiry.

49

1 their needs are incorporated into future plans; and
2 simplifying organisational design, leadership and
3 delivery of high quality public services for everyone.

4 This week marks the outward commencement of your
5 investigation, my Lady, to understand exactly what
6 happened, when it happened and why it happened. The
7 Covid-19 pandemic has had and continues to have such
8 a profound effect upon society in so many ways. Those
9 affected must be given truthful answers to the questions
10 they have asked since the earliest days in March 2020.

11 Those whose lives were irreparably damaged by the
12 pandemic will rightly wish to know how future
13 contingency planning in Northern Ireland can be designed
14 to avoid any future failures.

15 We share that quest to learn and will not be afraid
16 to acknowledge when it is clear that government could
17 have done better.

18 My Lady, those are my opening comments, and I'm very
19 grateful for you listening to them.

20 **LADY HALLETT:** Thank you very much indeed, Mr Sharpe.

21 Mr Strachan, sorry you have had to wait so long.

22 **Submissions on behalf of the Cabinet Office by**

23 **MR STRACHAN KC**

24 **MR STRACHAN:** Good morning, my Lady. I appear on behalf of
25 the Cabinet Office today with Mr Harland, who sits to my

51

1 The written evidence from the families of the
2 bereaved has had a striking effect upon all who have
3 heard it, not least TEO's team charged with preparing
4 for the contribution to this hugely important Inquiry.
5 Further, the Module 1 impact film demonstrates the depth
6 of loss for people who were touched by the Covid-19
7 pandemic. It is impossible to view the film and not be
8 moved.

9 The Inquiry's role in highlighting the perspective
10 and lived experience of the victims of the pandemic as
11 well as the experiences of all those involved is
12 crucial. There is no substitute for this. We thank you
13 and your team for the extent to which you have conveyed
14 that moving experience.

15 The modular approach, as well as the Chair's
16 commitment to produce reports on each module, means that
17 TEO can apply lessons from those as soon as possible.
18 This means, in practice: identifying and learning from
19 the best practice, mistakes and systemic issues that
20 emerged during the pandemic; demonstrating the
21 importance of good governance in support of
22 decision-making, particularly when decisions have such
23 a crucial role in promoting the well-being of the people
24 who TEO serves; engaging directly with people across all
25 of society, including the equality groupings to ensure

50

1 right.

2 My Lady, the Cabinet Office would like to start by
3 expressing its deepest sympathy to all those who lost
4 loved ones during the Covid-19 pandemic. It
5 acknowledges the huge personal sacrifices which were
6 made by families across the country and the dignity and
7 bravery of all those who continue to live with the
8 effects of Covid-19.

9 The Cabinet Office pays tribute to the efforts and
10 courage of public servants and all those who played
11 a role in the response to the pandemic, from those on
12 the front-line of health and social care to the
13 scientists who worked on the vaccine and all those
14 across society who kept the country running.

15 The impacts of the pandemic went far beyond the many
16 whose health suffered directly. The virus and the
17 measures taken in response affected the economy and
18 society profoundly. This Inquiry will rightly focus on
19 Covid-19's profound effect on the United Kingdom, but it
20 is right to remember that this was a global pandemic.
21 It affected the lives of everyone. No country was left
22 untouched, and each government had to make extremely
23 difficult choices in mitigating the suffering and
24 hardship caused to its citizens.

25 The UK Government established this independent

52

1 public inquiry under the Inquiries Act 2005 to provide
2 the United Kingdom with what may be the most ambitious
3 inquiry into Covid-19 undertaken worldwide. As the
4 former Prime Minister stated when announcing
5 the Inquiry, it is essential the government's actions,
6 its structures, processes and judgments are examined
7 rigorously, candidly and objectively, so every possible
8 lesson from this terrible global event as it affected
9 the United Kingdom is learned and remembered.

10 To prepare properly for a future pandemic of this
11 kind, such reflection and learning is essential, and it
12 will build on the scrutiny that the government has
13 received through Parliamentary inquiries and the
14 National Audit Office.

15 My Lady, the pandemic was the biggest peacetime
16 crisis our country faced in decades. Its consequences
17 will be felt for decades to come. But it's important to
18 recognise the many sacrifices that have been and will
19 continue to be made across our country as a result of
20 this virus, and although the pandemic had profound
21 consequences for all, its enduring impact on
22 individuals, families, communities and groups will vary
23 significantly, and the Cabinet Office welcomes
24 the Inquiry's role in considering the different impacts
25 on all parts of our society, including those with

53

1 Covid-19. Lessons can and must be learned. For
2 a global event of this kind, it will certainly be the
3 case that things could or should have been done
4 differently. The Cabinet Office's overriding aim is to
5 learn all the lessons it can from such scrutiny and to
6 make changes where appropriate to improve this country's
7 resilience against such events in the future. Both
8 history and science sadly tell us all of the need to
9 prepare for future challenges to come. This Inquiry
10 offers us the chance to face them with an open mind and
11 the best information possible.

12 The Cabinet Office therefore remains steadfast in
13 its dedication to supporting the Inquiry in its vital
14 work.

15 In response to the Inquiry's requests for
16 information in relation to Module 1, which, as Mr Keith
17 has identified, concern the period dating back to 2009,
18 the Cabinet Office has provided eight corporate
19 statements from senior officials currently working in
20 key positions in the Cabinet Office. In addition, the
21 Cabinet Office has supported nine witnesses to provide
22 Module 1 witness statements in their personal
23 capacities, in which they set out their own views,
24 reflections and suggestions for improvement in light of
25 the requests from the Inquiry to do so.

55

1 protected characteristics under the Equality Act
2 of 2010.

3 Thanks largely to the vaccines, Covid-19 has now
4 been brought under control, though the pandemic placed
5 huge strain on our public services and we are still, as
6 individuals and as a society, dealing with the longer
7 term consequences. The government is seeking to address
8 those consequences, for example supporting those with
9 long Covid, including funding research to understand
10 better its causes, symptoms and treatment, and putting
11 in place the elective care recovery plan to tackle the
12 Covid-19 backlog in the NHS.

13 The government is also taking actions to improve the
14 UK's resilience, as set out in the UK Government
15 Resilience Framework.

16 The Cabinet Office welcomes the role of the Inquiry
17 in investigating the response of the Cabinet Office, as
18 well as all other relevant government departments, to
19 this crisis. The Inquiry should help us all understand
20 what went well, and what did not, so as to improve the
21 response should a pandemic threaten our country again.

22 There will be much to learn from scrutinising, with
23 the full benefit of hindsight, what happened, first in
24 terms of preparation and then by examining the response
25 to the breadth and scale of the crisis created by

54

1 These include the former Prime Minister
2 David Cameron, Cabinet ministers, former heads of the
3 civil service, and a number of these witnesses will
4 assist the Inquiry by giving oral evidence during the
5 forthcoming hearings.

6 The findings of your Inquiry will enable the country
7 to be better prepared for any future pandemic and the
8 Cabinet Office is keen to use its conclusions to build
9 and improve upon the changes it's already implemented to
10 enhance crisis management structures.

11 The Cabinet Office recognises that continuous
12 learning is vital to maintain effective resilience.

13 The remainder of my opening statement covers just
14 two main areas. First, the role of the Cabinet Office
15 at the centre of government, as Mr Keith has referred to
16 in his opening remarks; and second, a high level summary
17 of the learning of lessons which the Cabinet Office has
18 carried out so far and the actions it is already taking
19 forward to enhance resilience for the future.

20 So, first, if I may, just something on the role of
21 the Cabinet Office.

22 The Cabinet Office is a ministerial department of
23 His Majesty's Government. Its ministers currently
24 include, among others, the Prime Minister, the Deputy
25 Prime Minister and The Chancellor of the Duchy of

56

1 Lancaster and the Minister for the Cabinet Office.
 2 The Cabinet Office is responsible for providing
 3 support to the Prime Minister and the Cabinet, and to
 4 ensure the government works together to deliver for the
 5 people of the United Kingdom.
 6 The Cabinet Office has a broad and fluid remit. Its
 7 key responsibilities include supporting collective
 8 government decision-making through the Cabinet and the
 9 Committee system, as you have heard, supporting national
 10 security, and co-ordinating the government's response to
 11 crises, and promoting efficiency and reform across
 12 government, and monitoring and driving the delivery of
 13 priorities by other departments.
 14 As such the Cabinet Office has a unique role in
 15 government which shifts in focus over time in response
 16 to priorities and challenges as they evolve. Within the
 17 Cabinet secretariat, for example, the Cabinet Office
 18 houses teams that co-ordinate policy, manage
 19 decision-making and look at issues that affect the whole
 20 of government or do not sit neatly within any individual
 21 department.
 22 A range of cross-government functions are based in
 23 the Cabinet Office. The cross-government functions,
 24 also comprising multiple agencies and public bodies,
 25 support departments and civil servants across government

57

1 Turning briefly to Cabinet government. In general
 2 the vast majority of decisions in government are made
 3 within individual departments, but some decisions, such
 4 as where the subject matter affects multiple
 5 departments, need to be made collectively at Cabinet or
 6 at Cabinet committee, either at a meeting or through
 7 what is referred to as a write-round to a
 8 Cabinet committee.
 9 The Prime Minister of the day, with the advice of
 10 the Cabinet Secretary, decides the overall structure of
 11 the Cabinet committee system and there are broad
 12 principles and protocols set down in the Cabinet manual,
 13 but there is no definitive list of decisions which must
 14 be taken by collective agreement.
 15 The Cabinet Office Briefing Room -- or COBR --
 16 committee is the mechanism for managing the central
 17 response to major emergencies which have international,
 18 national or multiregional impact and are of a scale and
 19 complexity to require central government co-ordination.
 20 Consistent with its need to provide an adaptive
 21 response, depending on the emergency, there is no fixed
 22 membership of COBR. In general, the chair will be the
 23 Secretary of State of the government department with
 24 lead responsibility for the issue being considered.
 25 However, with reference to some of the comments already

59

1 to be professional, capable and efficient, delivering
 2 strong value for money for taxpayers, mitigating and
 3 managing risks to operations and ultimately helping
 4 departments deliver what ministers want.
 5 One such function is the government commercial
 6 function, which includes the Crown Commercial Service.
 7 The Equality Hub was created within the Cabinet Office
 8 in September 2020, when the Race Disparity Unit,
 9 Disability Unit and the Government Equalities Office
 10 were brought together. The Social Mobility Commission
 11 secretariat joined the Equality Hub in April 2021, and
 12 the Cabinet Office has overall responsibility for the
 13 budget and resourcing of the Equality Hub. This is
 14 discharged in agreement with the Minister for Women and
 15 Equalities. All of the ministers with equality
 16 responsibility sit outside the Cabinet Office, and each
 17 has policy responsibility and decision-making authority
 18 on their specific equality issues.
 19 Whilst it's grown in recent years with changes in
 20 the machinery of government, at around 7,000 full-time
 21 equivalent staff, the Cabinet Office is smaller than
 22 some of the departments with large scale delivery
 23 responsibilities. Since its work is not orientated
 24 towards tackling one individual issue or risk, its
 25 structure and resourcing model adapt as needed.

58

1 made about the role of the lead government department,
 2 and also that of flexibility, it's also important to
 3 note that invitees will generally include
 4 representatives from those departments or regions
 5 affected by the crisis under discussion, as appropriate.
 6 As to the framework for emergency preparedness in
 7 the United Kingdom, risks are managed by systems in
 8 which departments and organisations from the public,
 9 private and voluntary sectors work together at the
 10 local, regional and national level.
 11 The principal role of the Cabinet Office with
 12 regards to emergency preparedness is to set and operate
 13 the overarching framework for risk assessment,
 14 preparedness, response and recovery. The framework is
 15 founded in the Civil Contingencies Act of 2004, to which
 16 reference has already been made, and the Inquiry will be
 17 considering. This sets out, among other things, the
 18 role of local resilience forums as a mechanism for
 19 co-ordinating local emergency preparedness. The
 20 framework has evolved through time with associated
 21 regulations and guidance, which is also shaped by other
 22 relevant legislation such as the Equality Act of 2010.
 23 The Cabinet Office carries out a wide range of
 24 activities aimed at understanding and enhancing
 25 preparedness for emergencies across the board, and this

60

1 is underpinned by an assessment framework encompassing
2 the most serious national risks facing the
3 United Kingdom.

4 Mr Keith has referred to that part of the framework
5 which includes the National Security Risk Assessment,
6 the published National Risk Register and, prior to its
7 amalgamation with the National Security Risk Assessment
8 in 2019, the National Risk Assessment processes.

9 The National Security Risk Assessment is the
10 government's main tool for identifying and assessing the
11 most serious risks facing the United Kingdom or its
12 interests overseas over a multi-year period. As will no
13 doubt be appreciated, the National Security Risk
14 Assessment cannot anticipate every possible risk that
15 might occur across the United Kingdom, but instead
16 brings together groups of risks of a similar nature in
17 order to facilitate the planning required to respond to
18 those risks.

19 The risks included in the National Security Risk
20 Assessment are proposed by lead government departments
21 based on their own expert internal advice. The National
22 Security Risk Assessment process also includes panels of
23 experts assessing the risks. The assessment is
24 published and is subject to public scientific scrutiny.
25 It underpins the development of national resilience

61

1 government departments in this sphere, but the
2 Cabinet Office did carry out work which was intended to
3 inform other bodies of their capabilities and to enhance
4 preparedness planning.

5 This has included work, I don't think referred to as
6 yet, such as: resilience capabilities surveys, which
7 were responded to by the local resilience forums; the
8 Resilience Capabilities Programme, which sought to
9 assess how certain workstreams were being prepared for;
10 sector security and resilience plans, which allowed lead
11 government departments to set out their approach to the
12 resilience of their critical national infrastructure;
13 and a National Resilience Standards, which were intended
14 to allow local resilience forums and others to benchmark
15 their works against a consensus view of good and leading
16 practice.

17 Where potential impacts are sufficiently severe or
18 wide-ranging across departmental responsibilities, the
19 Cabinet Office may convene and co-ordinate across
20 government, and that might include co-chairing official
21 boards with the lead department to help ensure that
22 wider system impacts are considered.

23 The pattern and intensity by which Cabinet Office
24 supports lead departments with their planning for
25 specific risks varies by risk and through time, and, as

63

1 planning assumptions. These set out the common
2 consequences of the National Security Risk Assessment
3 risks, and these are then shared with local and national
4 responders to assist them in their planning to deal with
5 the major national as well as more localised
6 emergencies.

7 The focus on these common consequences rather than
8 solely on specific risks is indeed intended to enable
9 a flexible response to the widest range of scenarios.

10 The National Security Risk Assessment is
11 periodically reviewed. Reference has been made to the
12 fact that specific risks and capabilities that are
13 identified in the National Security Risk Assessment, or
14 the national risk assessments, are managed -- the way
15 they're managed by lead departments. They are
16 influenced by the broader strategic context for that
17 department, such as related policy programmes, spending
18 decisions and international factors. Lead departments
19 carry out cross-government co-ordination, chairing
20 meetings as appropriate as needed to deliver their
21 responsibilities.

22 Other government departments also prepare for risks
23 that the National Security Risk Assessment process has
24 flagged up and attend preparation meetings.

25 My Lady, the Cabinet Office does not audit other

62

1 is typical for the centre of government, ministers and
2 senior officials will have to decide what level of
3 support they should provide to other government
4 departments, based on what's known about the
5 capabilities of that department, what needs other
6 departments have, and the resources that central
7 government can commit.

8 The latter is informed by overall resourcing
9 decisions and the landscape of emergencies and
10 contingencies that the government is tackling at any one
11 time.

12 The Cabinet Office also has its own role in leading
13 certain aspects of a response, if one is required,
14 for example organising COBR.

15 While it can never be optimally positioned to
16 respond to one individual risk, the Cabinet Office has
17 channelled resources to meet specific emerging needs,
18 and, over the time period with which Module 1 is
19 concerned, the most pressing risks at any one time
20 ranged from civil contingencies to national security
21 threats, and wide-ranging policy and operational
22 challenges.

23 In the period immediately preceding Covid-19
24 pandemic, the dedicated team on the UK's exit from the
25 European Union was the biggest single formation in the

64

1 Cabinet Office. In 2020, those resources were
2 re-assigned to Covid-19 as the pandemic emerged, and by
3 the end of that year the Covid-19 taskforce had more
4 than 300 people in it.

5 This taskforce was wound down in the spring of 2022,
6 after emerging from the pandemic, and the focus moved on
7 to Russia's invasion of Ukraine.

8 In terms of devolution, the government works closely
9 with the devolved administrations to promote effective
10 emergency planning and response that is as far as
11 possible aligned across the United Kingdom whilst
12 respecting devolved choices.

13 Turning to the Cabinet Office's role in pandemic
14 preparedness during the Module 1 timeframe, the work
15 undertaken by the Cabinet Office in respect of pandemic
16 preparedness is described in detail in the witness
17 statements already provided to the Inquiry, and as I've
18 already described, the Cabinet Office co-ordinated the
19 risk assessment process with input from lead government
20 departments. Pandemic influenza was identified as the
21 top risk throughout the relevant period. New and
22 emerging infectious diseases were also included in the
23 risk assessments and registers, and throughout the
24 relevant period, health sector preparedness was managed
25 by the Department of Health and Social Care.

65

1 Cabinet Office has also commissioned a number of reviews
2 and made a range of changes to improve resilience and
3 preparedness more broadly, with further improvements in
4 train. As I'll briefly explain, continuous learning and
5 improvement are an in-built and vital part of the
6 United Kingdom's resilience mechanisms.

7 In terms of formal reviews, beyond the crisis,
8 whilst respecting the Inquiry's process and without
9 prejudice to the Inquiry's own conclusions, the
10 Cabinet Office has carried out formal reviews in respect
11 of resilience and preparedness, including the following:

12 First, the Boardman review of Cabinet Office
13 communications procurement, which reported in
14 December 2020, considering the preliminary results of
15 a fact-finding exercise into the award of contracts for
16 Covid-19 communications services made by the
17 Cabinet Office in March 2020. It made three
18 recommendations in relation to existing procurement
19 policy and legislation, 13 recommendations in relation
20 to Cabinet Office processes and governance, and
21 12 recommendations in relation to conflicts of interest
22 and bias. The Cabinet Office accepted all of these
23 recommendations.

24 Second, in January 2021, the Civil Contingencies
25 Secretariat commissioned the Royal Academy of

67

1 Beyond the Module 1 period, but noted here for
2 completeness, in July 2021 the Department of Health and
3 Social Care and the Cabinet Office jointly established
4 the Pandemic Diseases Capabilities Board to enhance the
5 cross-government and cross United Kingdom approach to
6 preparing for a broader range of pandemics, including
7 but not limited to pandemic influenza.

8 If I may turn to lessons learned and actions taken
9 to improve preparedness, I've already noted that the
10 government set up this Inquiry to conduct a thorough and
11 objective assessment of its handling of the Covid-19
12 pandemic, with the aim, ultimate aim, of ensuring that
13 all of the available lessons are brought to light, so
14 the country is better prepared when the next pandemic
15 hits.

16 Covid-19 developed quickly from an acute emerging
17 threat to a pandemic requiring the whole of government
18 to respond to a chronic challenge, and the
19 Cabinet Office will support the Inquiry to capture every
20 lesson for our emergency frameworks and pandemic
21 preparedness, including both where we need to build on
22 existing strengths or address weaknesses in the
23 United Kingdom's response.

24 But the government has sought to learn and improve
25 throughout the course of the pandemic in real time. The

66

1 Engineering to undertake an independent external review
2 of the National Security Risk Assessment methodology.

3 The Royal Academy of Engineering was asked to
4 address a number of priority questions focused on
5 scenarios, concurrent and compound risks and
6 interdependencies, assessment timescales and
7 cross-cutting issues such as data, expert input and
8 diversity and inclusion.

9 It was also asked to deliver evidence-based
10 practical and implementable recommendations for
11 improvement, and its report "*Building Resilience*" was
12 published on 21 April 2023, and the Royal Academy of
13 Engineering's review was conducted alongside an internal
14 review by the Civil Contingencies Secretariat, and the
15 Royal Academy of Engineering's review made 13 final
16 recommendations and the Cabinet Office accepted and has
17 or is implementing the majority of these.

18 Thirdly, the Boardman Review of Government
19 Procurement ... Covid-19, which reported on 7 May 2021,
20 covered five key parts of the government procurement in
21 response to the pandemic, and identified lessons to be
22 learned for future procurement, and it made
23 28 recommendations which the government has accepted,
24 and implementation of these has mostly been completed
25 and has been subject to review by the Government

68

1 Internal Audit Agency.

2 Fourth, in June 2021, the National Security Adviser
3 commissioned a review into crisis capabilities in
4 government, which reported in February 2022, and that
5 review drew on lessons learned from recent crises,
6 including Covid-19, and aimed to provide an examination
7 of central government's approach to crises, and that
8 made 23 final recommendations, which the Cabinet Office
9 has accepted in full and has implemented them or is in
10 the process of doing so.

11 The Cabinet Office has also contributed to other
12 third party reviews and publications in respect of
13 lessons to be learned from the pandemic, and general
14 resilience arrangements, including those conducted or
15 submitted to Parliament, which sit outside the scope of
16 this Inquiry. And more widely the Cabinet Office's role
17 is shaped by other significant government reviews such
18 as the 2021 *Integrated Review of Security, Defence,*
19 *Development and Foreign Policy.*

20 As to actions to improve preparedness, as a result
21 of these reviews and publications, as well as internal
22 lessons exercises, the Cabinet Office has already made
23 significant changes to the way government deals with
24 resilience and crisis management. Amongst other things,
25 the Crisis Capabilities Review recommended that a new

69

1 collaboration on risk and help align emergency
2 preparedness activity.

3 In 2022, the Cabinet Office published the findings
4 and recommendations from its review of the Civil
5 Contingencies Act, and also promulgated a new version of
6 the National Security Risk Assessment.

7 My Lady, the government published its new resilience
8 framework on 19 December 2022, and the development and
9 publication of that was a key commitment made in the
10 integrated review, and it was prepared following
11 a public consultation, with input from across central
12 government, the devolved administrations, local
13 government, the private and third sectors, and of course
14 the public.

15 It sets out the United Kingdom Government's plans to
16 strengthen resilience to 2030, and the measures set out
17 in the resilience framework include, first of all:

18 "Delivering a new UK Resilience Academy [built out
19 from the Emergency Planning College] making world class
20 professional training available to all that need it."

21 Secondly, the creation of a new Head of Resilience
22 position, responsible for guiding best practice,
23 encouraging adherence to best practice and setting
24 guidance.

25 Thirdly, introducing an annual statement to

71

1 permanent Cabinet Office crisis team should be
2 established, with its responsibilities to include owning
3 and implementing plans for scaling up central
4 government's response in the face of major crises.

5 Following this, the Civil Contingencies Secretariat
6 was split into two: the COBR unit now focuses on the
7 government's response to emergencies, and the Resilience
8 Directorate has been established to lead on longer term
9 resilience issues.

10 The pandemic exposed a need for a material
11 improvement in how government generates and interrogates
12 data to support decision-making in a crisis, and as
13 a result the National Situation Centre, based in the
14 Cabinet Office, was established and became operational
15 in October 2021, and it now serves as a focal point for
16 data and an analysis in emergencies.

17 COBR facilities themselves have been modernised and
18 upgraded, including new physical office space and
19 improved information and communication technology
20 provision.

21 The Cabinet Office has established the UK Resilience
22 Forum, which met for the first time in July 2021,
23 bringing together national, regional and local
24 government, private and voluntary sectors and other
25 interested parties, to improve communication and

70

1 Parliament on civil contingencies risks and the
2 United Kingdom Government's performance on resilience.

3 Fourthly, clarifying United Kingdom Government roles
4 and responsibilities for each National Security Risk
5 Assessment risk.

6 Fifthly, growing the UK Government's pool of
7 advisory groups of experts to inform risk planning and
8 provide external challenge.

9 Sixthly, strengthening local resilience forums in
10 England.

11 Seventh, building private sector resilience by
12 providing guidance on risk in order to help the
13 businesses to meet new standards on resilience.

14 Eight, continuing to deepen and strengthen the
15 government's relationships with the voluntary and
16 community sector in England so as to better understand
17 and integrate their capabilities at the local and
18 national levels.

19 Nine, developing a measure for social vulnerability
20 as an indicator of socio-economic resilience, and how
21 risk impacts across communities and vulnerable groups in
22 order to inform decision-making.

23 Ten, updating guidance with local responders, the
24 voluntary and community sector, and communities to
25 support them working with vulnerable groups.

72

1 Eleventh, conducting an annual survey of public
2 perceptions of risk, resilience and preparedness.
3 And, twelfth, establishing a comprehensive national
4 exercising programme focused on priority National
5 Security Risk Assessment risks to test key capabilities
6 and provide a stronger framework to capture and track
7 lessons learned identified across government.
8 Alongside the publication of the resilience
9 framework, the Prime Minister formed a subcommittee of
10 the National Security Council chaired by the Deputy
11 Prime Minister specifically to consider matters relating
12 to the United Kingdom's resilience.
13 The government recognises there is always work to be
14 done to ensure that the United Kingdom is well prepared
15 for future crises, and to this end the Cabinet Office
16 will listen carefully to the evidence and contributions
17 from other core participants in Module 1, and looks
18 forward to the Inquiry's report and recommendations in
19 due course.

20 Thank you very much.

21 **LADY HALLETT:** Thank you, Mr Strachan.

22 I gather I mispronounced your name, please forgive
23 me. You're not the first and I fear you may not be the
24 last. So, please, anybody, if I do mispronounce your
25 name, please tell me. I won't be at all offended. On

73

1 an afternoon break if we're still going, but if you need
2 anything or you need a break, will you please let us
3 know.

4 You have prepared a joint report.

5 Could we please have it on the screen.
6 INQ000196611.

7 On page 2 of that report, you've both signed it.
8 Professor Whitworth on 5 June, Dr Hammer on 2 June.

9 You have both confirmed, is this right, that the
10 report is your own work, the facts are within your own
11 knowledge, and you believe anything else which relates
12 to your report on which you have relied, and you
13 understand your duty to this Inquiry to provide
14 independent evidence, and no doubt you will seek to
15 comply with that duty.

16 My Lady, may I ask for your permission for the
17 report to be published?

18 **LADY HALLETT:** Certainly.

19 **MR KEITH:** Professor Whitworth and Dr Hammer, I'm going to
20 put general questions. They're not directly related to
21 one or other of you. Please decide amongst yourselves
22 who will answer the question based upon your
23 specialities and what I understand to be your
24 consideration in advance of the areas about which I'm
25 going to ask you.

75

1 the contrary, I would welcome being corrected. So thank
2 you very much.

3 **MR STRACHAN:** Not at all, my Lady, I've got used to
4 answering to both pronunciations.

5 **LADY HALLETT:** I can imagine, yes!

6 Right, that completes the submissions of the
7 core participants.

8 Mr Keith.

9 **MR KEITH:** Well, my Lady, ahead of schedule, may I please
10 call Professor Jimmy Whitworth and Dr Charlotte Hammer
11 to give evidence.

12 **PROFESSOR JIMMY WHITWORTH (sworn)**

13 and

14 **DR CHARLOTTE HAMMER (affirmed)**

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

16 **MR KEITH:** Good morning, Professor Whitworth and Dr Hammer,
17 thank you very much for the preparation of your joint
18 report.

19 As you give evidence, could I please ask you to keep
20 your voices up. It's important that what you say is
21 recorded, and more important perhaps still that
22 everybody in the room can hear what you have to say.

23 If you don't understand a question, please ask me to
24 repeat it.

25 There will be a break at lunchtime, there may be

74

1 Your report, and your own expertise, concerns
2 biosecurity. Could one of you please tell the Inquiry
3 in very general terms what biosecurity is concerned
4 with?

5 **DR HAMMER:** Yes, I will take that. Thank you, Mr Keith.

6 So, in very general terms, biosecurity are those
7 questions that relate to the biological security safety
8 of populations, individuals and societies. So these are
9 things like outbreaks, so outbreaks of infectious
10 diseases, for example, going all the way to pandemics,
11 as we are discussing today. These are also things
12 related to biological terrorism and biological warfare.

13 **MR KEITH:** Are you both experts in that field of
14 biosecurity, so the forecasting of epidemic trends, the
15 transmission of diseases, particularly zoonotic
16 diseases, biosecurity countermeasures and the like?

17 **PROFESSOR WHITWORTH:** We are.

18 **DR HAMMER:** Yes.

19 **MR KEITH:** In the report you have set out for us, at page 1,
20 if we could have page 1 of the report, please, a short
21 CV of your most distinguished histories, setting out
22 your expertise.

23 Professor Whitworth, you are an emeritus professor
24 at the London School of Hygiene and Tropical Medicine.
25 You retired, I think, in 2022, but you were the

76

1 Professor of International Public Health between 2015
2 and 2022. Is that right?
3 **PROFESSOR WHITWORTH:** Yes.
4 **MR KEITH:** You were chair of the ethics committee, you have
5 a vast experience of working in the field of
6 biosecurity, both abroad and in the United Kingdom, you
7 are a fellow of the Royal College of Physicians, the
8 Academy of Medical Sciences and the Faculty of Public
9 Health, and you were also or you are now president elect
10 of the Royal Society of Tropical Medical and Hygiene.
11 Were you at one stage a member of the World Health
12 Organisation European Advisory Committee on Health
13 Research?
14 **PROFESSOR WHITWORTH:** I was, yes.
15 **MR KEITH:** May I ask you one or two questions, please, in
16 relation to your work for the World Health Organisation,
17 because it finds reflection in a later part of your
18 report, and it's an area that one of the
19 core participants has raised questions about, or sought
20 to ask questions about.
21 Were you a member of something called the
22 Prioritization Committee?
23 **PROFESSOR WHITWORTH:** I was, yes.
24 **MR KEITH:** And was that a committee that undertook, in 2018,
25 a review of the prioritisation of diseases for what was

77

1 **PROFESSOR WHITWORTH:** Indeed.
2 **MR KEITH:** Dr Hammer, you are the Everitt Butterfield
3 Research Fellow at Downing College, University of
4 Cambridge. You're based in the Department of Veterinary
5 Medicine, and you're a member of the Steering Committee
6 of Cambridge Infectious Diseases directorate.
7 You specialise in the epidemiology of emerging
8 high-consequence infectious diseases, and in health
9 emergency preparedness and response.
10 So essentially your speciality lies in global health
11 security and public health consequences?
12 **DR HAMMER:** Indeed.
13 **MR KEITH:** And in 2022, of most relevancy, were you and in
14 fact a consultant epidemiologist to the World Health
15 Organisation Covid-19 Epidemic Intelligence team?
16 **DR HAMMER:** Yes.
17 **MR KEITH:** And you've worked also for another notable and
18 important international network called GOARN, the Global
19 Outbreak Alert and Response Network?
20 **DR HAMMER:** I was a deployed consultant with them.
21 **MR KEITH:** Thank you.
22 So in relation to this report, you were instructed
23 in January of this year, on 20 January, and at pages 3
24 and 4 of the report, we can see the broad areas of
25 instruction, page 3 firstly, issues concerning

79

1 called the World Health Organisation Research and
2 Development Blueprint?
3 **PROFESSOR WHITWORTH:** Indeed, yes.
4 **MR KEITH:** Was it essentially concerned with trying to
5 identify and then research and develop countermeasures
6 against the most highly pathogenic, that's
7 disease-like -- or those diseases which pose the
8 greatest concern, including coronaviral diseases?
9 **PROFESSOR WHITWORTH:** Yes, indeed. That is looking to
10 identify those diseases that we're most worried about
11 from the public health point of view for which we don't
12 currently have good tools.
13 **MR KEITH:** How long did you undertake that work for, for
14 that committee?
15 **PROFESSOR WHITWORTH:** Since 2015.
16 **MR KEITH:** And did it report?
17 **PROFESSOR WHITWORTH:** Yes.
18 **MR KEITH:** When was that?
19 **PROFESSOR WHITWORTH:** After each meeting there would be
20 a report that came out. I think the most recent
21 was 2018.
22 **MR KEITH:** Thank you very much.
23 You've also published over 250 scientific papers and
24 you have provided a link to a selection of your most
25 recent articles in the report.

78

1 biosecurity threats, priority diseases, forecasting and
2 epidemic intelligence, international processes dealing
3 with surveillance and the control of infectious
4 diseases.
5 Over the page, please.
6 Then you turn in your conclusions to the
7 improvements that you suggest be made in infectious
8 disease surveillance to prepare the United Kingdom for
9 future pandemics.
10 Hot off the press, in fact this week, did
11 the United Kingdom Government publish its Biological
12 Security Strategy?
13 **PROFESSOR WHITWORTH:** Indeed.
14 **MR KEITH:** Have you been able to review that and to consider
15 the improvements and recommendations that the
16 United Kingdom Government itself advances against the
17 ones that you have suggested in your report?
18 **PROFESSOR WHITWORTH:** Yes, though to some extent since it
19 only came out this week.
20 **MR KEITH:** Yes, indeed, but your report, of course, preceded
21 that strategy and its publication, but you've
22 nevertheless been able to look at it.
23 **PROFESSOR WHITWORTH:** Yes.
24 **DR HAMMER:** Indeed.
25 **MR KEITH:** Thank you.

80

1 Could we please turn to page 5 of the report and the
2 commencement of the substance. May I ask you: what is
3 a pandemic?
4 **DR HAMMER:** So, a pandemic in essence is a big epidemic. So
5 an outbreak of proportions that span the world.
6 **MR KEITH:** Are they a new development?
7 **DR HAMMER:** Pandemics as far as we know have existed as long
8 as humanity.
9 **MR KEITH:** And is it self-evident that pandemics may range
10 in -- although they are necessarily worldwide, they may
11 range in impact, in their scope and severity?
12 **DR HAMMER:** Indeed.
13 **MR KEITH:** You've set out in the first few paragraphs of
14 your report a number of reasons why we need to be more
15 concerned about pandemics than perhaps hitherto had been
16 the case, because you describe why the potential for
17 infectious disease has in recent years greatly
18 heightened.
19 Could you please set out the broad reasons why you
20 believe that the potential has heightened?
21 **DR HAMMER:** Certainly.
22 Now, most severe biological threats that we are
23 facing are transmitted originally from animals to
24 humans, so that's what we call zoonotic diseases, and
25 the risk for a disease to be initially transmitted from

81

1 an animal virus, or are there places in the world where
2 it's more likely to occur?
3 **DR HAMMER:** Generally speaking this can happen wherever
4 an animal has a disease that is suitable to infect
5 a human, and then has contact with a human. There are,
6 historically speaking, some places where this has
7 occurred more often, but that does not mean that this is
8 not possible in other places.
9 **MR KEITH:** At paragraph 5 of your report, towards the bottom
10 of the page on the screen, you've identified, in fact,
11 a longer list of major drivers. So "microbial
12 adaptation and change", what does that mean?
13 **DR HAMMER:** So when we're talking about microbial adaptation
14 and change, that is, broadly speaking, which species
15 a microbe can infect, so that would be the potential to
16 actually jump to humans, because at the end of the day
17 we're just one of a whole range of species, and that is
18 also hinting at antimicrobial resistance, which is
19 another large biosecurity concern.
20 **MR KEITH:** We'll come back to that in a moment.
21 "Ecological changes favouring the multiplication of
22 a specific microorganism."
23 What is that a reference to?
24 **DR HAMMER:** So there we are seeing things like, for example,
25 changes related to climate change and also changes

83

1 an animal to human increases with increasing contact
2 between humans and animals, particularly if these
3 animals and these humans did not have contact
4 beforehand, so they did not share pathogens, diseases
5 beforehand.

6 Now, with a more and more interconnected world, we
7 do have more contacts with animals, we do have movement
8 of people and animals, meaning new animals are
9 encountering new humans, but we are also impacting what
10 is happening after a disease has jumped from an animal
11 to a human, that is how much contact that human has, how
12 high the likelihood is of that disease then causing
13 wider spread.

14 **MR KEITH:** So are there then two broad areas of concern?
15 One is -- we may call it the animal environment, the
16 interface between animals and humans, which gives rise
17 to the risk of a virus being transmitted into the human
18 race; and then, secondly, once transmission has
19 occurred, there's the concern about population density,
20 migration, travel and trade which encourages greater and
21 wider transmission?

22 **DR HAMMER:** Absolutely.

23 **MR KEITH:** Can that transmission -- can the infection point
24 occur at any time, or in any place, zoonotically, that
25 is to say the movement or infection of humans by

82

1 related to things that are also mentioned in the further
2 point of land use change, so what kind of environment we
3 have around ourselves, and that impacts both the animals
4 as well as the pathogens, and in between those two also
5 vectors, so think about insects, for example, that have
6 a different range with climate change.

7 **MR KEITH:** Is a vector -- does the word "vector" mean the
8 means by which a disease may be transmitted to humans,
9 so it could be by way of a flea or an animal or indeed
10 even, perhaps, a surface, or airborne or whatever it
11 might be?

12 **DR HAMMER:** There are two meanings to the word "vector"
13 here, the first being what you just described, so where
14 it could also be a surface, so a means of transmission.
15 The second, which is what I was more referring to just
16 now, is usually an insect or a similar entity in which
17 a pathogen can exist, but is not infected. So it
18 wouldn't be an animal that is infected, but it would be
19 something like certain species of fleas, it would be
20 something like certain species of mosquitoes, that
21 depends on the pathogen.

22 **MR KEITH:** All right.

23 Why is climate and climate change of relevancy?

24 **DR HAMMER:** So as you probably are already seeing, these are
25 all interconnected, and climate and climate change are

84

1 driving certain ecological changes and changes in vector
2 ranges specifically.

3 **MR KEITH:** Further down the page, please, or over the page,
4 you've referred to "increasing international travel and
5 commerce" already.

6 Then there are "direct human influences including
7 technology", which have impact upon agriculture and
8 land.

9 "Increasing human population", with urbanisation.

10 "Human behaviour", again you've covered that.

11 "Immunosuppression in a substantial group of
12 individuals ..."

13 What is the relevancy of that?

14 **DR HAMMER:** So if we have a group of individuals, especially
15 a group of individuals who are in contact with each
16 other, who are particularly vulnerable because they are
17 immunosuppressed, we simply have a higher likelihood of
18 spread.

19 **MR KEITH:** You have referred to the word "pathogen" or
20 "pathogenic"; what does that mean?

21 **DR HAMMER:** So when we talk about a pathogen, we talk about
22 a microorganism, so that could be a virus like
23 SARS-CoV-2, which is the virus causing Covid-19, that
24 could be a bacterium, it could be a fungus, and so
25 these -- we group those and together we call them

85

1 That, of course, is what became known as
2 Spanish flu; is that right?

3 **DR HAMMER:** Indeed.

4 **PROFESSOR WHITWORTH:** Yes.

5 **MR KEITH:** We can see, and the most important part of it,
6 the most important information, is towards the
7 right-hand side of the chart, where information is
8 provided in relation to the number of UK deaths, and the
9 case fatality rate as well as the transmission route.

10 What is the case fatality rate, as you understand
11 it?

12 **DR HAMMER:** So the case fatality rate means the proportion
13 of individuals who have become ill who die.

14 **MR KEITH:** Therefore, does the case fatality rate indicate
15 the severity --

16 **DR HAMMER:** It does.

17 **MR KEITH:** -- of the disease?

18 Influenza H1N1 Spanish flu was a respiratory
19 disease; is that correct?

20 **DR HAMMER:** Yes.

21 **MR KEITH:** Further down, the next entry on the chart is:

22 "1957-59 ... H2N2"

23 We'll come back in a moment to what the H and the N
24 signify, but was that Asian flu?

25 **DR HAMMER:** I believe so.

87

1 pathogens.

2 **MR KEITH:** All right, thank you.

3 Now, it's also necessary to set out some other
4 building blocks concerning the field of biosecurity and
5 pathogenic research.

6 Could we please have on the screen INQ000207453.

7 **(Pause)**

8 Professor Whitworth and Dr Hammer, this is a
9 reference table of previous pandemics and major
10 epidemics prepared, in fact, by the Inquiry team. I'm
11 sorry that you haven't been provided, I don't believe,
12 with a hard copy. But essentially it sets out the major
13 pandemics and epidemics, obviously, and a certain amount
14 of information relating to each.

15 I want to just take you through the list, please,
16 very briefly, in order that we may begin to understand
17 the names of and recognise some of the major pathogenic
18 threats that we and the world have faced over time, in
19 order to put coronavirus SARS-CoV-2 in its proper
20 context.

21 So, commencing towards the top of the page, you will
22 see:

23 "1918-20, Influenza - H1N1"

24 We don't, I think, need to zoom in, because we're
25 going to look at the table as a whole.

86

1 **MR KEITH:** On the right-hand side of the page, we can see
2 the case fatality rate was very much lower, at
3 0.017-0.1%, but again a respiratory pathogen.

4 "1968-70, Influenza - H3N2"

5 That was known as Hong Kong flu.

6 What does the H in the lettering indicate, and what
7 does the N indicate?

8 **PROFESSOR WHITWORTH:** The H is hemagglutinin, and the N is
9 neuraminidase, so they're referring to different
10 elements of the influenza virus.

11 **MR KEITH:** I knew you'd know the answer, Professor.

12 Does the H or the N indicate, in broad terms, the
13 source of the genetic make-up of the virus? So,
14 for example, does H indicate that the virus emanated
15 originally from a mammal or a bird or something of that
16 sort?

17 **PROFESSOR WHITWORTH:** In broad terms, yes. But you can't be
18 confident whether it came from a bird or a mammal just
19 from the H and the N nomenclature.

20 **MR KEITH:** Right.

21 Then we can see:

22 "1977-78, Influenza - H1N1"

23 That was an influenza that had its possible origins
24 in China or Russia. It became a global pandemic also
25 called Russian flu.

88

1 Then:
2 "2002-03, Coronavirus - SARS-CoV-1"
3 So SARS plainly stands for Severe Acute Respiratory
4 Syndrome. CoV, coronavirus. 1, this was the first
5 coronavirus; is that correct?

6 **PROFESSOR WHITWORTH:** Yes.

7 **MR KEITH:** A moment or two on SARS-CoV-1.
8 It commenced in 2002; is that correct?

9 **PROFESSOR WHITWORTH:** Yes.

10 **DR HAMMER:** Yes.

11 **MR KEITH:** It spread throughout 2003, I think starting in
12 Hong Kong. It was notified to the world by
13 an organisation called ProMED, about which we'll hear
14 more later.

15 Towards the middle of the page, it killed 774 people
16 worldwide. In the United Kingdom, there were four cases
17 and no deaths. But the case fatality rate was
18 around 9.6%. So in terms of the severity, it was very
19 much more severe than the preceding influenza and other
20 pandemics to which I've made reference?

21 **DR HAMMER:** Yes.

22 **PROFESSOR WHITWORTH:** Yes.

23 **MR KEITH:** "2009-10, Influenza - H1N1"

24 Was that swine flu?

25 **DR HAMMER:** It was.

89

1 that coronavirus, MERS, the Middle East Respiratory
2 Syndrome, and Covid-19 in terms of whether or not it
3 differed, in terms of whether it was symptomatic or
4 asymptomatic, or whether or not -- and whether or not,
5 as a disease, there were different methods of
6 transmission? So, for example, whether or not it was
7 a disease transmitted more by aerosol or droplets from
8 the higher respiratory tract or lower down in the chest?

9 **DR HAMMER:** Yes. So, I believe Professor Heymann will go
10 into more detail on this tomorrow as well, but,
11 generally speaking, MERS is transmitted quite
12 differently. We are -- there's two main routes. So
13 MERS is entering the human population primarily from
14 camels, dromedarian camels, so one route of transmission
15 is very close contact with an infected
16 dromedarian camel, who, as far as I understand it, can
17 have MERS asymptotically.

18 The other route of transmission, which is the route
19 that the larger MERS outbreaks have gone through, is
20 within a healthcare setting. Again, very close contact.
21 And there you can have either transmission from patient
22 to patient or from patient to healthcare worker.

23 **MR KEITH:** But the degree of human-to-human transmission for
24 MERS was very different to that of Covid-19?

25 **DR HAMMER:** Yes, indeed.

91

1 **MR KEITH:** Swine flu struck the United Kingdom, amongst
2 other countries. If we go to the right, the middle of
3 the page, global deaths were assessed to -- have been
4 assessed at 284,000.

5 In the United Kingdom, there were 28,000-odd cases,
6 and, tragically, 457 deaths. But the case fatality rate
7 was, by comparison to coronavirus SARS-CoV-1, very much
8 lower, at 0.01-0.02%.

9 **DR HAMMER:** Yes.

10 **MR KEITH:** Is that why the review into that swine flu
11 pandemic and the British Government's response and the
12 press and scientific reports have generally described
13 that influenza pandemic as a mild one, at least insofar
14 as the United Kingdom was concerned?

15 **DR HAMMER:** Yes.

16 **PROFESSOR WHITWORTH:** Yes.

17 **MR KEITH:** "2012- Coronavirus - MERS CoV"

18 Is that the Middle East Respiratory Syndrome
19 coronavirus?

20 **DR HAMMER:** It is.

21 **MR KEITH:** Global deaths: 866; UK cases: 5; UK deaths: 3.

22 But the case fatality rate was very, very much higher
23 at 34.3%. Again, a respiratory disease.

24 **PROFESSOR WHITWORTH:** Yes.

25 **MR KEITH:** Can you say anything about the difference between

90

1 **MR KEITH:** So although it could be transmitted human to
2 human, it was only in those very confined healthcare
3 settings that it actually took place.

4 Then Ebola at 2013 to 2016. So far the highest case
5 fatality rate, 62.9%, but it's not an epidemic or
6 a pandemic that has afflicted the United Kingdom. There
7 have been three cases and no deaths.

8 Then finally down to "Coronavirus - SARS-CoV-2", our
9 Covid-19.

10 To put that terrible disease in its context, we can
11 see in the middle of the page global deaths range from
12 an upper figure of 30.6 million to a lower figure of
13 6.9 million. Of course there are different ways of
14 measuring deaths.

15 In the United Kingdom, more than 90% of the
16 population is assessed to have been infected by the
17 disease, to have caught it, and there we have official
18 figures recounted being 225,668 deaths.

19 The infection fatality rate is something different
20 to the case fatality rate, is it not?

21 **DR HAMMER:** It is, yes.

22 **MR KEITH:** What is the difference?

23 **DR HAMMER:** So the case fatality rate takes the proportion
24 of cases, so people who have become ill, whereas the
25 infection fatality rate takes the proportion of infected

92

1 people, including those asymptotically infected.
 2 **MR KEITH:** So essentially case fatality rates rest upon
 3 a confirmed case of infection, there has to be
 4 an identified case, whereas an infection fatality rate
 5 is an assessment based on those who have become
 6 infected, whether or not that has been confirmed in some
 7 way or not?

8 **DR HAMMER:** Yes and no.

9 **MR KEITH:** Of course.

10 **LADY HALLETT:** I think I'm going to need you to run it past
 11 me again, I'm afraid, Mr Keith.

12 **MR KEITH:** Doctor.

13 **DR HAMMER:** I'll try my best to do that.

14 So with a case fatality rate we usually specify what
 15 cases we mean. Do we mean only confirmed cases? If so,
 16 confirmed how? Laboratory confirmed or confirmed by
 17 a clinician? Or do we also include, for example,
 18 probable cases or suspected case?

19 With the infection fatality rate, this becomes
 20 a little more complicated, because it is very difficult
 21 to assess the extent of infection, especially with
 22 diseases that can occur asymptotically, which also
 23 means that, in many cases, our confidence in the
 24 infection fatality rate is lower than in the case
 25 fatality rate, because there is a certain amount of

93

1 **MR KEITH:** What does "endemic" mean, to which you referred?

2 **PROFESSOR WHITWORTH:** Endemic means that it is constantly
 3 within the human population.

4 **MR KEITH:** Does the fact that there have been three
 5 coronavirus pandemics in relatively short order in this
 6 century indicate anything at all?

7 **DR HAMMER:** That is a very good question.

8 **MR KEITH:** I'm very glad to hear that.

9 **DR HAMMER:** Probably one that can't be answered with full
 10 certainty.

11 Now, certainly it does point to the issues we
 12 covered before in terms of increasing human-animal
 13 interfaces, but beyond that it's probably very difficult
 14 to say anything.

15 Indeed, what we haven't covered, what is on the top
 16 of this page, but going further back even, we can't with
 17 certainty say how many coronavirus pandemics there have
 18 been throughout history.

19 **MR KEITH:** Could we then put that chart aside, please, and
 20 return to your report at INQ000196611, and page 5. If
 21 you could zoom in, please, on paragraph 2.

22 As you might expect, Professor and Dr, the
 23 United Kingdom Government, as with many other
 24 governments, has long acknowledged the risk posed by
 25 biological or zoonotic diseases and disease generally,

95

1 estimation of the total number of infections.

2 **MR KEITH:** All right, thank you.

3 Standing back and looking at that chart, in 2019,
 4 SARS-CoV-2 was therefore the third coronavirus pandemic
 5 but the second SARS pandemic. There had been one SARS
 6 pandemic, the coronavirus SARS-CoV-1 in 2002, and then
 7 the coronavirus MERS pandemic or epidemic in 2012, and
 8 therefore Covid-19 the third in 2019.

9 Are coronaviruses common in animals such as bats and
 10 civet cats and camels and so on?

11 **DR HAMMER:** Indeed, they are.

12 **MR KEITH:** Are there hundreds?

13 **DR HAMMER:** I believe so.

14 **PROFESSOR WHITWORTH:** If not thousands.

15 **MR KEITH:** If not thousands. But not all of them infect
 16 humans?

17 **PROFESSOR WHITWORTH:** No.

18 **MR KEITH:** Do a significant proportion?

19 **PROFESSOR WHITWORTH:** There's, I think, four endemic
 20 coronaviruses that affect humans, and they cause mild
 21 common cold symptoms, and then there are these three
 22 more recently experienced coronaviruses that have caused
 23 epidemics in the human population. So of these
 24 thousands of coronaviruses there have been just seven
 25 that we're aware of that affect humans.

94

1 and the international nature of biological threats has
 2 long been classified as what is called a Tier 1 risk by
 3 the United Kingdom government.

4 Is it obvious that, therefore, such risks have long
 5 been part of the United Kingdom's preparedness planning?

6 **DR HAMMER:** I would assume so.

7 **MR KEITH:** All right.

8 You turn, further down the page, to the three broad
 9 categories of biosecurity threat that we currently face,
 10 and at paragraph 4 you set them out as being in three
 11 categories: zoonotic spillover, antimicrobial
 12 resistance, and human-origin biosecurity risks.

13 Zoonotic spillover you have already described as
 14 being a leak, if you like, or a transmission between
 15 animal and human over the zoonotic interface, but what
 16 is antimicrobial resistance?

17 **DR HAMMER:** So, antimicrobial resistance is a natural
 18 phenomenon of microorganisms, so, for example, bacteria,
 19 viruses, adapting to broadly speaking their environment.
 20 And that environment for these microorganisms includes
 21 drugs we use on them. So things like antibiotics. So
 22 that then means that those microorganisms adapt and
 23 learn how to deal with those drugs, which brings
 24 considerable harm, as it means that things which we
 25 thought we could treat become less treatable, even

96

1 untreatable, and also because large parts of modern
2 medicine, particularly surgery, rely on us being able to
3 control bacterial risks.

4 **MR KEITH:** The third category, the deliberate and accidental
5 release of pathogens, the human-origin biosecurity
6 risks, is self-evident, and we'll come back to the
7 detail of that in a moment. So with those three
8 categories broadly in mind, can we just focus, please,
9 for a moment on zoonotic spillover.

10 Does zoonotic spillover present a range of risks or
11 effects? Can it be that following a zoonotic spillover
12 that there may be limited or no risk for the human race,
13 or can it have and does the evidence show that it has
14 had potential pandemic impact?

15 **DR HAMMER:** Yes.

16 **MR KEITH:** Is there anything that can be said about the
17 degree of risk? So, for example, can it ever be known
18 in relation to a zoonotic spillover whether or not the
19 impact will be towards the bottom end of that chart of
20 impacts, or towards the upper end, towards the pandemic
21 end?

22 **DR HAMMER:** So we see the whole range, and even within
23 individual pathogens, we can see a broad range. If we
24 take for an example -- stepping back from coronaviruses,
25 if we take Ebola as an example, we see quite a number of

97

1 (12.4 pm)

(The short adjournment)

3 (1.45 pm)

4 **MR KEITH:** May we please have the reference table of
5 previous pandemics back up on the screen, INQ000207453,
6 please. Professor and Dr, I wanted to return to
7 an issue that we explored this morning, and just ask you
8 one or two further questions on it, please.

9 Are the number of deaths caused in any pandemic the
10 result of differences in both transmission of a disease
11 and the severity of the disease?

12 **DR HAMMER:** They certainly are. They are also a result of
13 changes in overall population across the planet.

14 **MR KEITH:** But once a disease infects the human race and,
15 let's assume it spreads, the number of deaths will be
16 determined by how transmissible the disease is and how
17 severe the disease is?

18 **DR HAMMER:** Yes.

19 **MR KEITH:** So on the one hand you may have a disease that
20 doesn't transmit very well, but if you get it you are in
21 very deep trouble indeed, or you may have a disease that
22 transmits extremely easily but is less dangerous, less
23 severe, and therefore less likely to kill you, and
24 therefore there is a better prospect you'll survive?

25 **PROFESSOR WHITWORTH:** Indeed.

99

1 spillovers of Ebola where we have a handful of cases,
2 and then we also see large outbreaks like the one
3 referenced in the table, the 2013 to 2016 outbreak in
4 West Africa, or the more recent 2018 to 2020 outbreak in
5 the Democratic Republic of the Congo. So there we see
6 even within one pathogen we have considerable variance.

7 **MR KEITH:** Can such zoonotic spillovers be viruses or
8 coronaviruses or ...?

9 **DR HAMMER:** Well, they can be viruses. They can also be
10 bacteria, so this is not just viruses. If we take,
11 for example, the plague, some of you may know that as
12 the Black Death from the Middle Ages, that is a zoonotic
13 organism as well, so I think most of us will probably
14 know the stories from the Middle Ages, a plague coming
15 from rats -- with a flea in between, probably -- so
16 there you see another example of a zoonotic pathogen,
17 this time a bacterium.

18 **LADY HALLETT:** Mr Keith, forgive my interrupting you,
19 I think you have been pushing your luck with our very
20 patient stenographer, so would you like to choose
21 a moment?

22 **MR KEITH:** That's an ideal moment, my Lady.

23 **LADY HALLETT:** Thank you all. Thank you very much,
24 Professor and Dr Hammer. We will return at 1.45,
25 please.

98

1 **MR KEITH:** So MERS, for example, 2012, as you were saying
2 earlier -- if we could just highlight -- thank you very
3 much -- MERS was a virus, I think, originally from local
4 bats, but the reservoir, the carrier of the virus was
5 camels, and camels could then infect humans.

6 There weren't very many cases worldwide, and there
7 were certainly very few cases in the United Kingdom, and
8 three deaths, but the chains of infection, that is to
9 say the way in which people infected other people,
10 tended to die out after a few cases, and you could only
11 get MERS, couldn't you, from very limited scenarios?
12 For example, a healthcare worker treating somebody who
13 was infected with MERS and was capable, therefore, of
14 infecting the healthcare worker?

15 **DR HAMMER:** Yes.

16 **MR KEITH:** There was known as stuttering transmission, the
17 transmission didn't flow easily, there wasn't widespread
18 human-to-human transmission, and therefore the overall
19 numbers were, relatively speaking, very, very low,
20 although of course each death is terrible tragedy, but
21 there was no widespread transmission.

22 But if you happened to get MERS, the fatality rate,
23 whether judged by the number of overall cases or judged
24 by the number of unconfirmed infections, was very high
25 indeed. Is that the position?

100

1 **DR HAMMER:** Yes.

2 **PROFESSOR WHITWORTH:** Yes.

3 **MR KEITH:** Whereas, by contrast, swine flu, 2009 influenza
4 H1N1, had a very much lower case fatality rate, and
5 although it tended to spread more easily -- it was
6 a flu, it was an influenza pandemic -- it had a very
7 much lower case fatality rate. Doesn't really matter
8 whether it's a case fatality rate or an infection
9 fatality rate. If you became infected with it there was
10 a very, very, very much greater chance that you would
11 survive?

12 **DR HAMMER:** Correct.

13 **PROFESSOR WHITWORTH:** Correct.

14 **MR KEITH:** So the disease to avoid is a disease that is both
15 transmissible and severe?

16 **DR HAMMER:** Yes.

17 **PROFESSOR WHITWORTH:** Indeed.

18 **MR KEITH:** And that, of course, is the disease that must be
19 prepared for.

20 **PROFESSOR WHITWORTH:** Yes.

21 **MR KEITH:** My Lady, I hope that answers the question that
22 you posed.

23 **LADY HALLETT:** Thank you.

24 **MR KEITH:** Turning back to your report, please,
25 INQ000196611, at page 7, you describe in your report how

101

1 **MR KEITH:** So, putting it another way, is it a method
2 perhaps of focusing the mind more sharply on a potential
3 future but very real risk?

4 **DR HAMMER:** You could say that.

5 **MR KEITH:** Has there always been a proper understanding of
6 disease X, or has this approach of trying to identify or
7 focus on a hypothetical disease been a more recent
8 development?

9 **DR HAMMER:** So, the idea of preparedness inherently has
10 an understanding of something unexpected potentially
11 happening. Now, if you want to put it like that,
12 operationalising that into disease X has happened within
13 the last decade and a half.

14 **MR KEITH:** By that do you mean scientific bodies both in the
15 United Kingdom and abroad, and the World Health
16 Organisation in particular, has started to focus much
17 more on what disease X might be and therefore to try to
18 sharpen its focus on how best to take steps to prevent
19 against what that disease may turn out to be?

20 **PROFESSOR WHITWORTH:** Yes.

21 **MR KEITH:** Professor Whitworth, you mentioned the
22 Prioritization Committee for the World Health
23 Organisation and your membership of the committee. In
24 a sense, was that committee, by prioritising attention
25 on particular diseases, including coronaviral diseases,

103

1 there are coronaviruses, and we've heard something about
2 the three major coronaviruses which have been of the
3 greatest concern, and you discuss influenza. But you
4 refer in paragraph 8 to something called "disease X",
5 which you describe as a hypothetical future disease with
6 the potential to cause a global pandemic.

7 Now, disease X isn't a real disease, as you say,
8 it's a hypothetical scenario. What is the benefit in
9 terms of prevention or countermeasures or preparedness
10 of identifying a hypothetical disease which is called
11 disease X? What benefit does that give us?

12 **DR HAMMER:** So basically the idea behind disease X is that
13 it is not unreasonable that we will encounter a large
14 outbreak, maybe a pandemic, from a disease that we did
15 not previously know the properties of. Obviously
16 preparing for something that we do not know the
17 properties of, if we don't have a concept of that, is
18 very difficult. And therefore we have disease X as this
19 hypothetical disease that we don't know the properties
20 of, just like we might not know the properties of
21 a future pandemic disease.

22 In a way, then, disease X is supposed to teach us
23 how to prepare for unexpected things, and how not to
24 fall into the trap of preparing for something that we
25 already know and that has happened in the past.

102

1 trying to identify what that disease X might be and
2 therefore trying to guard against that possibility?

3 **PROFESSOR WHITWORTH:** Yes, that would be true. If we think
4 about coronaviruses, we know there are many thousands of
5 those. We had had experience of two coronaviruses, SARS
6 and MERS, getting into the human population during the
7 21st century, and it was a reasonable bet that another
8 one might come into the human population, which we've
9 seen with Covid here. It's also very plausible that
10 another one might come along in the future.

11 **MR KEITH:** If you don't know whether or not disease X is
12 going to be a coronavirus or a virus or zoonotic or
13 whatever it might be, whatever it might turn out to be,
14 what is the practical benefit to us all of focusing on
15 disease X?

16 Obviously the precise means of protecting ourselves
17 against a disease depends to a very large extent on
18 what that disease turns out to consist of.

19 **PROFESSOR WHITWORTH:** I think two-fold. I think, one, it
20 encourages us to be flexible in our approach and not to
21 very slavishly think about what we did for the last
22 epidemic or the last series of epidemics like the ones
23 you've shown on your chart. But also it allows us to
24 develop a sort of generic framework of how we would deal
25 with a disease that was spread, say, by the respiratory

104

1 route, was of a certain level of transmissibility,
2 certain level of severity, and think about what measures
3 we would need to put in place to be able to control such
4 a disease.

5 **MR KEITH:** Professor, the United Kingdom, like many
6 countries, on the onset of Covid-19, focused its
7 attentions on an influenza pandemic but was struck,
8 of course, by a coronavirus. So, from the viewpoint of
9 December 2019, that coronavirus, Covid-19, was the
10 disease X, it was the disease which struck us. Was
11 there a failure, do you think, by many countries around
12 the world, to identify that possibility? Therefore,
13 that they did over-slavishly focus on influenza and not
14 what the other disease might turn out to be?

15 **PROFESSOR WHITWORTH:** I think that's a fair criticism, but
16 I think we have to remember that when this first struck,
17 we knew very little about the biological properties of
18 this disease, and so at that stage, while we were
19 scrambling to get more information, it would be best to
20 start with a plan of something that was relatively
21 similar but to keep in mind that we need to be flexible
22 to change that as the evidence emerged.

23 **MR KEITH:** Quite so, but much of what you've said,
24 of course, is concerned with being able to respond and
25 to be flexible sufficiently to be able to respond. But

105

1 it not? You know that you've got flu, and you therefore
2 know that you might have to take a step to isolate
3 yourself and go home or go to bed and stop it being
4 passed on?

5 **PROFESSOR WHITWORTH:** Mostly. But as we've discussed, there
6 was a swine flu epidemic where we had very large numbers
7 of cases and there were many people who didn't know that
8 they were infected.

9 **MR KEITH:** So in fact if you -- even if you were to focus on
10 an influenza pandemic, to the exclusion of all other
11 pandemics, you would necessarily have to prepare for
12 both asymptomatic and symptomatic versions of that
13 pandemic?

14 **PROFESSOR WHITWORTH:** Indeed, yes.

15 **MR KEITH:** But bringing you back to the debate about
16 disease X, if in the scientific community for some time
17 now there was an appreciation of the importance of
18 focusing on the hypothetical disease X to make sure that
19 you weren't blindsided by an unexpected virus, or
20 pathogen, disease, why then was that perhaps excessive
21 focus on influenza pandemics as opposed to coronaviral
22 or some other form?

23 **PROFESSOR WHITWORTH:** I think because that is where we had
24 had the most experience before in dealing with influenza
25 epidemics that occurred previously, and to use that as

107

1 in terms of not seeing, not appreciating, perhaps, the
2 nature of the disease which ultimately struck us, do you
3 believe that there was too great a focus -- not
4 exclusively a focus but too great a focus -- on
5 a different type of disease? We prepared in the main
6 for an influenza pandemic and that wasn't the pandemic
7 that struck.

8 **PROFESSOR WHITWORTH:** Yes, I think that's a fair criticism.
9 With the two coronavirus epidemics that had occurred
10 previously, there was quite a divergence in the
11 epidemiological features of that, the transmissibility
12 and the severity and the amount of symptomatic versus
13 non-symptomatic cases that were there, which means that
14 it would be hard to predict exactly what would happen
15 with a new coronavirus that we hadn't experienced
16 before.

17 **MR KEITH:** You've explained to us what transmissibility is.
18 Can I ask you, please, to say a little more about what
19 asymptomatic and symptomatic viral infection means?

20 **PROFESSOR WHITWORTH:** Certainly.

21 If one thinks about people who are infected with
22 a virus, they might show symptoms and have disease, or
23 they might not. And if they don't, but they're simply
24 infected but otherwise well, they are asymptomatic.

25 **MR KEITH:** So flu, influenza, in the main is symptomatic, is

106

1 a starting point of how you would approach a coronavirus
2 epidemic was reasonable while we gathered further
3 information.

4 **MR KEITH:** Into that mixture, what about the fact that there
5 had been in very recent history two coronaviral
6 pandemics?

7 **PROFESSOR WHITWORTH:** That's true. That really ought to be
8 factored in as well. But remember that those two were
9 quite divergent in their effects on the human
10 population. So it wasn't as if you could say, "Ah, this
11 is a coronavirus, this is the plan we need to follow."

12 **MR KEITH:** Thank you. Well, that's very clear.

13 Then may we turn, please, to the second of your
14 large -- your major categories of risk, antimicrobial
15 resistance, which you address in detail at paragraph 16
16 of your report.

17 I want to ask you, please, about the risk posed by
18 antimicrobial resistance. You refer there to the fact
19 that antimicrobial resistance has two features to it.
20 There is, firstly, the issue of transmissibility. That
21 is to say, if you have a disease, a pathogen that can't
22 be controlled by, for example, antibiotics, then there
23 is the concern that the particular disease or pathogen
24 could spread easily, transmissibility; and also that
25 there is the further issue of transmissibility of

108

1 resistance genes between pathogens. What does that
2 second reference mean, the "issue of transmissibility of
3 resistance genes between pathogens"?

4 **DR HAMMER:** So this is a specific feature particularly of
5 bacteria that develop resistance, and between
6 themselves, by the way of how a bacterium works
7 biologically, there is a possibility of the ability to
8 detect and counter an antibiotic can be shared between
9 bacteria.

10 **MR KEITH:** And therefore that has an impact upon the line or
11 the degree of resistance as well as on the future
12 development of the pathogen or the disease?

13 **DR HAMMER:** And of the spread of resistance in general.

14 **MR KEITH:** So it's a cascading effect?

15 **DR HAMMER:** Indeed.

16 **MR KEITH:** All right.

17 The third broad area of biosecurity -- oh, I'm
18 sorry, I should have asked you. In paragraph 16 you
19 refer to the fact that AMR, antimicrobial resistance,
20 has gained the label silent pandemic and that in 2016 it
21 was predicted to kill about 10 million people per year
22 by 2050.

23 You make the point that the precise future course of
24 antimicrobial resistance is uncertain, but is the point
25 that you make in the paragraph that potentially there

109

1 I don't know, malicious use of a pathogen or a disease,
2 or an accident in a laboratory?

3 **DR HAMMER:** So if we look at accidents first, these have
4 happened in the past. So we are aware of four
5 incidents. Involving the first SARS, SARS-CoV-1,
6 for example. The 2007 foot-and-mouth disease outbreak
7 in the UK, which some of you might still remember, that
8 was a laboratory leak. That was an accidental release.
9 Then the largest one that we are aware of was in 2019,
10 and that was a brucella outbreak in China, again
11 associated with a laboratory accident.

12 **MR KEITH:** All right.

13 Now, whether or not a disease infects the human race
14 by virtue of a laboratory accident or malicious use,
15 deliberate infection, bio-warfare, does that matter? In
16 terms of properly preparing ourselves, does it matter
17 whether the infection of humans starts from a zoonotic
18 spillover or an accident or malicious use? The fact is
19 that the transmission has started and must be then
20 addressed.

21 **DR HAMMER:** That is absolutely true, and the further along
22 you go, the less it matters. At the point where we have
23 a pandemic, it probably does not matter at all anymore
24 where the first -- very first case came from, at least
25 in terms of addressing that particular pandemic.

111

1 could be catastrophic consequences from AMR as well?

2 **DR HAMMER:** Yes.

3 **MR KEITH:** Has that risk changed over the last few years, at
4 least since the prediction of 10 million people by 2050
5 was made in 2016?

6 **DR HAMMER:** I think it has changed in both directions, so it
7 is probably very difficult to quantify that change, but
8 we have both an increased awareness and, resulting from
9 that increased awareness, increased what we call
10 antimicrobial stewardship, so trying to slow down the
11 spread of resistance, but on the other hand we also
12 still have significant use of antimicrobials that speed
13 up the levels of resistance.

14 So I would not want to speculate what that would
15 mean for that estimated number.

16 **MR KEITH:** All right.

17 The third broad area of biosecurity threat you
18 identify is what you call human-origin risks, and you
19 deal with that at page 11 -- it commences at page 10,
20 I'm sorry, page 10, paragraph 18.

21 You describe how there is a "non-zero risk of
22 a pandemic originating from either deliberate or
23 accidental human behaviour".

24 Have there in the recent past been any significant
25 incidents of human-origin leak, that's to say by way of,

110

1 It does obviously matter in terms of prevention,
2 trying to stop these outbreaks from happening at all.
3 But in terms of the preparedness and response for if it
4 happens, it actually matters very little.

5 Now, obviously if we talk about things like altered
6 pathogens, there might be slight changes, but then again
7 that would probably fall under disease X again.

8 **MR KEITH:** All right. So whereas doctrinally there may be
9 some purpose to be gained in identifying one of these
10 three broad biosecurity threats as being human-origin
11 behaviour, a leak or deliberate use, in terms of
12 focusing on what we can do to protect ourselves and
13 countermeasures and so on, that broad area of risk is of
14 less significance?

15 **DR HAMMER:** Well, I think the importance of knowing where
16 something came from is predominantly in finding out if
17 this is an avenue that we can shut down for the future.
18 So is this -- for example, on the naturally occurring
19 side, is this a common interaction between humans and
20 animals which can be made safer? On the laboratory
21 side, is this something that we have overlooked in our
22 procedures? Then, obviously, when we talk about
23 malicious use, there are other forensic and security
24 implications.

25 **MR KEITH:** All right.

112

1 Now, a government in any country, when faced with
2 the outbreak of a disease or a pathogen, however it
3 commences, is faced with a number of conundra, is it
4 not, there are all number of considerations which have
5 to be taken into account when deciding how to react?
6 You set some out at paragraph 22 on page 11 of your
7 report.

8 I'd like you, please, just to run very briefly
9 through the considerations which you've set out there,
10 because they all have an impact on how any government
11 will respond, and of course, therefore, one has to have
12 an eye to them when formulating recommendations or how
13 better to respond in the future.

14 So the first bullet point:

15 "A small cluster of infections has variable
16 potential to become widely established in the
17 population, and this is challenging to predict
18 accurately in advance."

19 Is that a way of saying that when any outbreak
20 starts, you just don't know whether it's going to become
21 an epidemic or a pandemic or how wide it will go, you
22 don't know whether it's going to go in that direction or
23 that direction, whether it's a problem or whether it can
24 be ignored?

25 **DR HAMMER:** Yes.

113

1 **DR HAMMER:** Yes.

2 **MR KEITH:** -- because they can't follow every possible
3 alert, and every time they cry wolf everybody else's
4 sense of preparedness will diminish.

5 So why then is surveillance important? You go on to
6 describe in detail the various different ways in which
7 worldwide global surveillance mechanisms are in place.
8 If we cannot respond significantly or fully to every
9 single alert, why does knowing that there are more and
10 more alerts out there help us?

11 **DR HAMMER:** So the idea is that what we want is an early
12 alert. The earlier your alert, the more likely you can
13 actually respond to it, because the response will be
14 much, much smaller, and a much smaller response can be
15 mounted more often. It's less likely to be seen, as you
16 put it, as crying wolf and more like a routine
17 investigation into a case or a cluster of cases. It
18 will also require a different capacity, because
19 obviously when we're talking about early response here,
20 we're not talking about the response as we've seen over
21 the past couple of years, we're talking about a small
22 local team investigating.

23 **MR KEITH:** To find out what has happened and, if there is
24 a pathogen on the loose, to take steps locally to make
25 sure that it doesn't become a crisis?

115

1 **MR KEITH:** How, therefore, do governments prepare, in
2 a general sense, against outbreak of disease? When --
3 putting aside the inability to be able to prepare for
4 every single risk and every single disease, when they're
5 alerted to an outbreak somewhere in the world, how do
6 they know whether or not it requires them to press the
7 red button or whether or not they can say, "Well, let's
8 just see how it goes"?

9 **DR HAMMER:** Initially, with an initial cluster, you might
10 not know. And the response will then vary over time.
11 Initially you will have a team on the ground, a local
12 team, investigating that outbreak, and if possible
13 trying to control and shut it down. Obviously if that
14 fails, you kind of move along that progression.

15 At the international level there are established
16 mechanisms for determining if something requires you to,
17 as you put it, push that red button.

18 **MR KEITH:** The more surveillance you carry out and the more
19 you alert yourself, as a government, to knowing what's
20 going on in the rest of the world and how many outbreaks
21 are occurring, presumably the greater the risk -- or the
22 greater proportion of those will be false alarms. The
23 more alerts there are of which nothing comes, the more
24 false alarms there will have been. So that adds
25 an additional pressure on governments --

114

1 **DR HAMMER:** Indeed, and in fact one of the very first things
2 we do in an outbreak investigation is to verify there
3 actually is an outbreak.

4 **MR KEITH:** That, or any system of global surveillance and
5 local response to prevent, I don't know, a drama
6 becoming a crisis, requires, therefore, visibility or
7 transparency around the world, because we all have to
8 know, therefore, what's going on in some other part of
9 the world where outbreaks are occurring.

10 Is that what you mean when you refer in the next
11 paragraph to the "spirit of One Health", so ensuring
12 that in general terms response systems are
13 interdisciplinary, they are well funded, that they're
14 global, that they take account holistically of the whole
15 system, so that we're not blindsided by something we
16 didn't see coming?

17 **DR HAMMER:** One Health is a bit more specific than that. So
18 One Health is specifically collaborative multi-sectoral
19 transdisciplinary approaches across humans, animals and
20 the environment. So it is the working together of these
21 three sectors particularly.

22 **MR KEITH:** Why is a spirit or an approach of One Health of
23 practical assistance to us?

24 **DR HAMMER:** Now, if we look at sort of two of the three
25 biosecurity threats that we've outlined, zoonotic

116

1 diseases and antimicrobial resistance, both of those
 2 happen at the intersection between humans, animals and
 3 the environment, and, for example, if you think about
 4 a zoonotic disease, it is not unreasonable to think that
 5 you might see something in the animals first. But if
 6 the animal health sector and the human health sector do
 7 not talk to each other, this becomes very difficult.
 8 Whereas if these are integrated systems, if they speak
 9 the same language, if they feed into a common system,
 10 it's much more possible to have those early alerts, even
 11 potentially before we see the first human cases.
 12 **PROFESSOR WHITWORTH:** If I may just add to that?
 13 **MR KEITH:** Yes, please.
 14 **PROFESSOR WHITWORTH:** If you took a view of human health in
 15 a population and you focused it just on what's happening
 16 in hospitals, or just what's happening in GP surgeries,
 17 you'd get a very biased picture, because you wouldn't
 18 see that much wider picture of the interaction in the
 19 environment and with other animals.
 20 **MR KEITH:** So, in essence, it is about trying to understand
 21 more broadly but more clearly what's going on out there
 22 and ensuring an early opportunity to intervene to stop
 23 a bad position becoming a great deal worse?
 24 **DR HAMMER:** Yes.
 25 **PROFESSOR WHITWORTH:** Indeed.

117

1 surveillance systems feed into international
 2 surveillance. International surveillance, at least if
 3 we're talking about traditional surveillance, so not
 4 looking at media alerts, for example, cannot stand on
 5 its own, because it requires lab capacity in every
 6 country, it requires clinicians notifying in every
 7 country. So you can't really take the two apart and say
 8 we only need one or we only need the other.
 9 **MR KEITH:** All right.
 10 Was there an independent panel for pandemic
 11 preparedness and response convened in 2001? Are you
 12 aware of that panel?
 13 **DR HAMMER:** Erm --
 14 **MR KEITH:** It's not something, I confess, that you've
 15 addressed in your report, but it relates to some of the
 16 matters that you've covered. If you haven't got it to
 17 hand, then don't worry.
 18 **DR HAMMER:** Yes, so that is the report from the independent
 19 panel that you are referring --
 20 **MR KEITH:** For pandemic preparedness and response.
 21 **DR HAMMER:** Indeed.
 22 **MR KEITH:** Is that something that you're able to discuss?
 23 I don't know, Dr, whether or not you happen to have
 24 a copy there.
 25 **DR HAMMER:** Yes, we do.

119

1 **MR KEITH:** You describe, in the context of surveillance,
 2 a number of different methods of surveillance and alert
 3 systems. You describe something called syndromic
 4 surveillance and horizon scanning, epidemic
 5 surveillance. Are there a number of international and
 6 alert systems, and are there a number of different ways
 7 of carrying out surveillance?
 8 **DR HAMMER:** Yes, on both counts.
 9 **MR KEITH:** Now, in relation to Covid-19, the United Kingdom
 10 and the world became -- were informed at I think round
 11 about the same time, they became informed from doctors
 12 in China, they became informed from an entry on the
 13 surveillance system ProMED, and the WHO China office
 14 also issued an alert. This was all at the end of
 15 December 2019.
 16 Provided there is at least one working comprehensive
 17 effective surveillance system or alert system, is there
 18 a need for more surveillance systems or multiple
 19 surveillance systems? And if there is an international
 20 surveillance system, does the United Kingdom have to
 21 have its own surveillance system? Ultimately the
 22 United Kingdom was, with the rest of the world, informed
 23 at the end of December 2019 that there was an outbreak.
 24 **DR HAMMER:** So, taking sort of the national and
 25 international, a lot of information from national

118

1 **MR KEITH:** We have in our system -- could we have
 2 INQ000183545, please.
 3 **DR HAMMER:** It's number 3 in the witness ...
 4 **MR KEITH:** There it is, "The Independent Panel", it says in
 5 the bottom left-hand corner, "for Pandemic Preparedness
 6 & Response", in very small letters.
 7 "COVID-19: Make it the Last Pandemic"
 8 Could we go forward slowly a couple of pages at
 9 a time and we'll get our bearings. So there are the
 10 contents. Recommendations were made by the panel after
 11 a review of the "devastating reality of the Covid-19
 12 pandemic".
 13 Could you please go to page 15 of what I hope are
 14 86 pages. So one of the first points that the panel
 15 made was that, before the pandemic, there was a general
 16 failure to take preparations seriously, and it says
 17 this:
 18 "In under three months from when SARS-CoV-2 was
 19 first identified as the cause of clusters of unusual
 20 pneumonia cases in Wuhan ... COVID-19 had become a
 21 global pandemic threatening every country ... Although
 22 public health officials, infectious disease experts, and
 23 previous international commissions and reviews had
 24 warned of potential pandemics ... COVID-19 still took
 25 large parts of the world by surprise. It should not

120

1 have done. The number of infectious disease outbreaks
2 has been accelerating, many of which have pandemic
3 potential."

4 Then:

5 "It is clear to the Panel that the world was not
6 prepared and had ignored warnings ..."

7 And the panel refer to the SARS epidemic, about
8 which you've spoken, in 2003, and then further, later
9 down the page, but we don't need to go to it, to MERS
10 and Ebola, as well as Zika.

11 Now, that view, which you may or may not share,
12 would tend to suggest that the prior existence or the
13 prior occurrence of SARS-CoV-1 and MERS should have put
14 the world generally into a greater state of
15 preparedness, that in that very difficult debate to
16 which you refer, about being ready for the right disease
17 but not crying wolf, not being overprepared for
18 something that doesn't come and being properly prepared
19 for something that does come, the balance may have been
20 out, that there should have been just a higher degree of
21 awareness of a coronavirus and of the possibility that
22 the next pandemic would be a coronavirus. Would you
23 agree with that general proposition?

24 **PROFESSOR WHITWORTH:** I think that by the middle of January
25 of 2020, people in the international public health
121

1 assiduous in its early dissemination of the outbreak
2 alert to countries around the world, its approach in
3 presenting the nature and level of risk was based on its
4 established principles guided by the International
5 Health Regulations ... While WHO advised of the
6 possibility of human-to-human transmission in the period
7 until it was confirmed, and recommended measures that
8 health workers should take to prevent infection, the
9 Panel's view is that it could also have told countries
10 that they should take the precaution of assuming that
11 human-to-human transmission was occurring."

12 So what the panel appeared to be saying is: when you
13 have an outbreak, assume the worst, assume it will be
14 human-to-human transmission, and therefore prepare for
15 that worst, assuming of course that the outbreak has got
16 past a certain stage and therefore requires a response
17 at all.

18 What do you say about the notion or the argument
19 that there should be a precautionary principle applied
20 so that you should assume that the next significant
21 outbreak will be human-to-human transmission or will
22 have significant human-to-human transmission? Is that
23 a sensible way to proceed in your view?

24 **PROFESSOR WHITWORTH:** I think there's a fine balance. As
25 I hope we've got across, there are very many clusters of
123

1 community were aware that this was out of the ordinary,
2 this outbreak, this wasn't just a small cluster that was
3 going to die away, this looked like it was something
4 bigger than that. And I think by the end of January,
5 people in public health, certainly in the UK, were very
6 clear that this was an impending wave that was coming to
7 the UK, and those of us who had memory of SARS, the
8 parallels with that were something that gave us shivers.
9 **MR KEITH:** SARS, of course, was something that had affected
10 other countries as well, or primarily not the
11 United Kingdom, but countries in the Far East.

12 **PROFESSOR WHITWORTH:** Yes.

13 **MR KEITH:** That gives rise, doesn't it, to their
14 preparedness, because they had been through SARS in
15 a way in which we had not?

16 **PROFESSOR WHITWORTH:** Yes.

17 **MR KEITH:** Could we look, please, at page 25.

18 The panel, in the different context of discussing
19 an approach to responding to pandemics by applying
20 what's known as the precautionary principle, that is to
21 say assuming when you first become aware of an outbreak
22 that it will have human-to-human transmission and
23 therefore be more transmissible, said this at the bottom
24 of the page:

25 "While [the World Health Organisation] was rapid and
122

1 cases which might or might not be an outbreak that we're
2 aware of on a daily basis. To take the precautionary
3 viewpoint that each one of those could turn into
4 a pandemic would be a huge waste of effort and
5 resources. To have good surveillance so we can see how
6 this is developing and we can sift and we can identify
7 those that we are worried about, until they reach
8 a certain stage, I think is a sensible approach. Once
9 they reach a stage that, "Yes, this is something that we
10 are worried about", then absolutely, I think
11 a precautionary approach then becomes required. But
12 that will be for a very small minority of all the
13 outbreaks that we are aware of. So it's quite a tricky
14 judgement call about which ones you want to focus your
15 efforts upon.

16 And certainly speaking to senior members of UK
17 public health community in late January, they were of
18 the view that they ought to overreact rather than
19 underreact to this.

20 **MR KEITH:** And the key word, then, if I may say so,
21 Professor, in your answer is "then", because you said
22 you can't treat every outbreak as serious, you've got to
23 wait to see how it develops, but you need surveillance
24 to see the outbreaks occurring, and then you can assess
25 and sift.

124

1 **PROFESSOR WHITWORTH:** Yes.

2 **MR KEITH:** But then there will be something to be said for
3 applying a precautionary principle.

4 **PROFESSOR WHITWORTH:** Agreed.

5 **MR KEITH:** So in the case of Covid-19 in your report you
6 identify that the World Health Organisation identified
7 what's known as a PHEIC on 30 January 2020, a public
8 health emergency of international concern.

9 So the outbreak had clearly required that level of
10 reaction from the WHO. It hadn't yet been declared
11 a pandemic, it wasn't declared a pandemic until March.
12 Is there, however, something to be said or would
13 something have been said for applying a precautionary
14 principle at that stage, when the world began to realise
15 there was an outbreak serious enough to call it a public
16 health emergency of international concern, and say,
17 "Well, let's assume from then on it will be likely to
18 have or must be approached on the basis it does have
19 sustained human-to-human transmission"? That's the
20 precautionary principle in action.

21 **PROFESSOR WHITWORTH:** I think in this case, in hindsight,
22 yes, I would agree with that. But again, if you declare
23 a public health emergency of international concern, or
24 WHO, then that has huge logistic and resource
25 implications for the world of having declared that

125

1 **MR KEITH:** Right.

2 **DR HAMMER:** And maybe also of note here, for something to be
3 a public health emergency of international concern, it
4 has to be of international concern; that does not mean
5 it has to affect the entire world.

6 So an Ebola outbreak, very unlikely to affect the
7 entire world, but can very well be a public health
8 emergency of international concern.

9 **MR KEITH:** Now, whilst we're looking at PHEICs and the World
10 Health Organisation, is there a legal structure called
11 the International Health Regulations (2005) which
12 underpins the WHO's approach to outbreaks of concern?

13 **PROFESSOR WHITWORTH:** There is.

14 **DR HAMMER:** Yes.

15 **MR KEITH:** Just for historical interest, primarily, is there
16 a process of assurance or testing or grading of
17 an individual country's response under the auspices of
18 the WHO and the International Health Regulations?

19 **PROFESSOR WHITWORTH:** There is.

20 **MR KEITH:** Is that what's known as the Joint External
21 Evaluation?

22 **PROFESSOR WHITWORTH:** Yes.

23 **MR KEITH:** As a matter of interest, how did the
24 United Kingdom fare in those international-based but
25 locally assessed assessment procedures, the Joint

127

1 that's the case.

2 And if you declare too many of those at any one
3 time, then you're going to divert resources, manpower,
4 time from the ones that are most important. So, again,
5 it's a bit of a judgement call.

6 **MR KEITH:** Can you say what the proportion is of outbreaks,
7 pathogen outbreaks, disease outbreaks, that are declared
8 public health emergency of international concern by the
9 WHO? So if the concern is, and it's readily
10 understandable, you can't presume human-to-human
11 transmission for every outbreak, you should only do so
12 in relation to those that are serious or significant or
13 which have the real capacity to cause damage, there
14 aren't that many diseases that are declared a PHEIC, are
15 there?

16 **PROFESSOR WHITWORTH:** Yes --

17 **DR HAMMER:** A very small number.

18 **PROFESSOR WHITWORTH:** -- that's very true, it is a very
19 small number, and one of the critiques of that system is
20 that it's, if you like, an almost all or nothing
21 declaration. It either is a public health emergency of
22 international concern or it isn't, and to have a more --

23 **MR KEITH:** Nuanced?

24 **PROFESSOR WHITWORTH:** Yes -- graded system for being able to
25 respond would be beneficial.

126

1 External Evaluations, before the Covid pandemic?

2 **PROFESSOR WHITWORTH:** The UK has never undergone, to our
3 knowledge, a formal Joint External Evaluation. It has
4 participated in the pilot scheme for this, and scored
5 highly, and it has participated in self-scoring,
6 following the same metrics as a Joint External
7 Evaluation, which, again, it has done fairly well.

8 **MR KEITH:** Was it also subject to some procedure, some
9 testing process under what's known as the Global Health
10 Security Index?

11 **PROFESSOR WHITWORTH:** Yes, that was also done, I believe, by
12 Harvard, and adopted by WHO.

13 **MR KEITH:** And again it did relatively well in that
14 assessment as well?

15 **PROFESSOR WHITWORTH:** It did.

16 **MR KEITH:** Do you happen to know how well the United Kingdom
17 has fared in any self-assessed voluntary or compulsory
18 evaluation since Covid-19?

19 **PROFESSOR WHITWORTH:** I'm not aware --

20 **DR HAMMER:** Well --

21 **PROFESSOR WHITWORTH:** -- of any since.

22 **DR HAMMER:** -- not after. So the latest self-assessment of
23 IHR indicators was in 2021.

24 **MR KEITH:** Yes.

25 **DR HAMMER:** In that the UK did fairly well, with a 93%

128

1 score, so that's 93% across 15 IHR capacity scores.
 2 **MR KEITH:** Can we then turn, please, to page 13 of your
 3 report, paragraph 27, where you deal with the issue of
 4 "Response capacity with scale-up capacity". And you
 5 make the point, which may to some degree be
 6 self-evident -- that it's critical that there is
 7 sufficient capacity to respond to any alert generated by
 8 one or more surveillance systems.

9 In the body of the paragraph, you refer to a metric
 10 or a standard, a target, of a certain number of
 11 epidemiologists per 100,000 of the population as being
 12 a standard or a metric proposed for scientific response
 13 capacity.

14 Could you just explain to us, please, how, in the
 15 context of the response to Covid-19, having more or less
 16 or the same amount of epidemiologists might have made
 17 a difference in those days of the end of December 2019
 18 and the beginning of January 2020?

19 **DR HAMMER:** Certainly.

20 So what we're talking here about are what we call
 21 field epidemiologists, so that's applied
 22 epidemiologists, that's people who run surveillance, so
 23 there is the obvious link there to actually seeing
 24 things early enough, and they are also the people who
 25 act upon alerts, who do the local outbreak

129

1 covers a few of those things, primarily surveillance and
 2 response to outbreaks, the international standard is one
 3 trained field epidemiologist per 200,000. This is
 4 a scaled-down version of the US target of one per
 5 100,000, and that is primarily to make it achievable for
 6 lower/middle income countries.

7 This is sort of the minimum standard. It is very
 8 difficult to measure how many field epidemiologists
 9 there are. There are some proxy measures that aren't
 10 particularly perfect either. I have very little doubt
 11 that we are above that threshold in the UK and that we
 12 have a fair number of field epidemiologists.

13 Other things that you mentioned, so things like
 14 clinical capacity, things like developing testing, they
 15 require a slightly different skill set. Again, from my
 16 understanding, the UK has fairly large capacity.

17 **MR KEITH:** You address in paragraph 29 on page 14 the
 18 general and obvious good sense principle of having
 19 sufficient microbiologists, social scientists,
 20 clinicians, animal health experts and so on and so
 21 forth. Again, relatively self-evident, one might think.

22 Can you express a view as to whether or not
 23 generally across that broad range of professions again
 24 we were well blessed in terms of the scientific resource
 25 and the clinical and the microbiological and the

131

1 investigations, so those local teams I referred to
 2 a moment ago. These would be primarily staffed by field
 3 epidemiologists.

4 So having those being able to address things in
 5 early stages makes a significant difference, but also,
 6 obviously, these people then go through the ranks, they
 7 will form the body of a lot of intervention strategies
 8 in terms of the epidemiological side, so that will be
 9 being able to run contact tracing and to oversee that,
 10 being able to run dedicated new surveillance systems,
 11 even being able to come up with a dedicated new
 12 surveillance system, which is not a trivial task.

13 **MR KEITH:** So in the context of the United Kingdom, and
 14 I appreciate this is a huge, huge area, can you say
 15 anything about whether or not, as a country, we were
 16 blessed -- sufficiently blessed with the right number of
 17 epidemiologists and scientists and so on to create both
 18 the research base that is required in responding to any
 19 outbreak or pandemic, and also to create the response
 20 mechanisms, diagnostic testing, vaccines, clinical care
 21 and so on and so forth?

22 **DR HAMMER:** So, a few things to take apart there,
 23 I'm afraid.

24 **MR KEITH:** Yes.

25 **DR HAMMER:** So, from the field epidemiology side, which only
 130

1 environmental expertise necessary to deal with
 2 a pandemic?

3 **PROFESSOR WHITWORTH:** I'd say that generally, yes, we were,
 4 but I think the point about co-ordinated,
 5 multidisciplinary approaches, we were not necessarily so
 6 good at. I think we had these various groups and these
 7 various pools, but they were not necessarily
 8 interconnected.

9 **MR KEITH:** Too much working in silos or the like?

10 **PROFESSOR WHITWORTH:** Indeed.

11 **DR HAMMER:** Yes.

12 **MR KEITH:** All right.

13 Well, my Lady, that's an issue which I'm setting the
 14 building blocks for which we'll be looking at in much
 15 greater detail later.

16 Could you now go forward, please, to page 17.

17 **LADY HALLETT:** Just before you do, Mr Keith, it's going back
 18 a bit, and I just wanted to check firstly with you,
 19 Professor Whitworth, that I had accurately noted what
 20 you said, and then check whether you, Dr Hammer, agree.

21 What I have noted, Professor, is that you said it
 22 was reasonable to use the plans for a flu pandemic as
 23 a starting point until we gathered more data. Is that
 24 an accurate record of what you said?

25 **PROFESSOR WHITWORTH:** Yes, my Lady.
 132

1 **LADY HALLETT:** Dr Hammer, do you agree?
 2 **DR HAMMER:** So, first of all, any plan for a respiratory
 3 outbreak will be better than none. A dedicated plan is
 4 better than one for something else. But I think
 5 Professor Whitworth has quite nicely laid out that there
 6 were certain difficulties with this with regard to
 7 coronaviruses, particularly the divergence between MERS
 8 and SARS. So from that point of view, I certainly do
 9 agree.

10 **LADY HALLETT:** Thank you very much.

11 **MR KEITH:** So page 17, please. Thank you very much.
 12 In this part of your report, you list a number of
 13 pathogens or diseases which have been prioritised by the
 14 World Health Organisation for research and development.
 15 If you scroll down over the next page, please, you
 16 list high-consequence infectious diseases which are on
 17 the list kept by a committee called the Advisory
 18 Committee on Dangerous Pathogens. That's paragraph 37.

19 You also list those pathogens or diseases in
 20 relation to which the United Kingdom Vaccine Network
 21 invests in vaccine development as a priority. Then you
 22 actually go on to deal with other lists of pathogens
 23 kept by other international bodies and by overseas
 24 bodies, for example the National Institute of Allergy
 25 and Infectious Diseases in the United States of America.

133

1 what the risks are and how one deals with those, it may
 2 be less useful to have a specific list of pathogens. It
 3 might be better, as the UK does, to say pandemic
 4 influenza and new and emerging infections that are
 5 coming up, but the follow-through for that is that one
 6 ought to have a plan that is a framework for how you
 7 would deal with a respiratory disease or
 8 a gastrointestinal disease or so on. If that's the
 9 case, that's fine not to have a list as such, but you've
 10 got a framework for how you would deal with categories
 11 of disease.

12 **MR KEITH:** So just to summarise the position, and I hope
 13 I do so correctly, Professor, the approach taken by the
 14 United Kingdom, which was and is a sensible one, is not
 15 to operate on the basis of a prescriptive list of
 16 priority diseases, identifying each disease one by one
 17 and saying, "This is how we'll prepare for that disease,
 18 this is how we'll prepare for this one"; you make plain
 19 that in the various documents and the procedures and the
 20 processes applied by the United Kingdom, there was
 21 a general preparation for a pandemic, influenza
 22 pandemic, but also a different style of preparation,
 23 although there were overlaps, for what was called a new
 24 and emerging infectious disease, the precise nature of
 25 which wouldn't be known.

135

1 Is the point about your lists and the fact that
 2 these various bodies list these particular diseases as
 3 priorities that the danger of listing diseases as
 4 a priority is that you may not see the one that comes
 5 from the left field, and/or is it the point that in the
 6 United Kingdom, in advance of Covid, whilst we had
 7 a system in place that was thought to be flexible, that
 8 coped with the possibility of a generic pandemic, we
 9 didn't as a country proceed by way of trying to identify
 10 every possible significant risk and then planning for
 11 it?

12 **PROFESSOR WHITWORTH:** I think these lists of diseases are
 13 set up for different purposes by different bodies. So
 14 with WHO, this is looking specifically to identify: what
 15 are the priority diseases for which the world needs
 16 vaccines, diagnostics, therapeutic drugs? And therefore
 17 we'll put out a call for work to be done to develop
 18 vaccines or whatever for a specific disease, to actually
 19 focus academia, industry and so on in developing
 20 vaccines for those kind of conditions.

21 The same sort of thing with the UK Vaccine Network,
 22 that had funding to start to develop vaccines for this
 23 specific list.

24 **MR KEITH:** Right.

25 **PROFESSOR WHITWORTH:** For a country to be thinking about
 134

1 So that general approach whereby you try to have
 2 a broad framework which you then apply to the
 3 eventuality, which you apply to the specifics of the
 4 disease which actually does occur, is a sensible one?

5 **PROFESSOR WHITWORTH:** Yes, I think it is sensible. It
 6 allows one to be flexible in one's approach. So,
 7 for example, the list that we'd produced for the
 8 high-consequence infectious diseases that the Advisory
 9 Committee on Dangerous Pathogens considers, we've got
 10 a list there that we ought to have plans for, but that
 11 ought to be a flexible list, and there ought to be
 12 generic plans for how one would deal with contact
 13 transmission, how one would deal with respiratory
 14 transmission.

15 **MR KEITH:** Ah, so in fact what you're suggesting is that
 16 there should be specific plans for specific pathogens on
 17 that list, but at the same time alongside those plans
 18 a general framework to deal with the unexpected outcome,
 19 the disease or the pathogen that takes us by surprise?

20 **PROFESSOR WHITWORTH:** Yes, indeed.

21 **MR KEITH:** Right. All right.

22 You then deal with expert advisory groups in the
 23 United Kingdom at page 20, and you describe them for us:
 24 the New and Emerging Respiratory Virus Threats Advisory
 25 Group (NERVTAG), about which, my Lady, we will hear

136

1 a very great deal more in Module 2; the Human Animal
2 Infections and Risk Surveillance group (HAIRS), the
3 Advisory Committee on Dangerous Pathogens (ACDP), which
4 you've just mentioned, and also the National Expert
5 Panel on New and Emerging Infections.

6 Might it be thought that we have quite a few
7 committees and groups in the United Kingdom dealing with
8 various aspects of zoonotic diseases, respiratory
9 infections, dangerous pathogens, new and emerging
10 infections and the like? Is there an argument for some
11 rationalisation of those bodies?

12 **PROFESSOR WHITWORTH:** I think it is useful, as expert
13 groups, to have them focused on the areas where their
14 expertise lies, and I think they do have robust
15 discussions and divergent opinions, so I think it's
16 useful for them to have that body of expertise to do
17 that. I think what is really important, though, is that
18 the recommendations that come from those bodies are
19 co-ordinated and synthesised within government to get
20 an overarching view of the risks.

21 **MR KEITH:** Is that because, by their very nature, by their
22 description, by their scope, each of these bodies
23 focuses in a slightly different area? So NERVTAG only
24 considers respiratory viruses, because it is the New and
25 Emerging Respiratory Virus Threats Advisory Group?

137

1 (2.50 pm)

(A short break)

3 (3.05 pm)

4 **MR KEITH:** My Lady, on a completely different subject, may
5 we have your permission, please, to publish the written
6 statements?

7 **LADY HALLETT:** You may.

8 **MR KEITH:** Professor and Dr, I was in the process of asking
9 you about a particular type of epidemic intelligence
10 ProMED, the Program for Monitoring Emerging Diseases.
11 Could you please tell us something about that process,
12 which you describe at paragraph 58 on page 23?

13 **PROFESSOR WHITWORTH:** So, ProMED is a programme that's
14 actually hosted by the International Society for
15 Infectious Diseases, so a group of scientists, and it's
16 been going for about 30 years now, and it's an internet
17 service that identifies unusual health events occurring
18 around the world. There's a network of people who
19 report these events that are happening. This happens
20 24 hours a day every day of the week, and so on, and
21 that information is then shared globally.

22 **MR KEITH:** That network of people, what sort of people are
23 they? I mean, they're focusing on social media chatter
24 or health department announcements or stories from small
25 media outlets and they bring it together?

139

1 **PROFESSOR WHITWORTH:** Exactly.

2 **MR KEITH:** The Human Animal Infections and Risk Surveillance
3 group considers only zoonotic diseases.

4 **PROFESSOR WHITWORTH:** Yes.

5 **MR KEITH:** The Advisory Committee on Dangerous Pathogens
6 doesn't include global surveillance or horizon scanning.
7 And the last body I mentioned, the National Expert Panel
8 on New and Emerging Infections, which I'm sure did
9 exactly how it described itself on the tin, has in fact
10 been disbanded?

11 **PROFESSOR WHITWORTH:** Yes, it has.

12 **MR KEITH:** All right.

13 The next area in your report is the area of
14 forecasting, modelling, horizon scanning and epidemic
15 intelligence.

16 I don't think, Professor and Dr, that we'll be
17 assisted by a description of the differences between
18 forecasting, modelling, horizon scanning and epidemic
19 intelligence, but I wanted to ask you about one
20 particular type of epidemic intelligence which you
21 describe at page 24.

22 My Lady, is that a suitable point for a break?

23 **LADY HALLETT:** Yes, of course, sorry.

24 **MR KEITH:** No, I was slightly taken by surprise.

25 **LADY HALLETT:** No, I shall return at 3.05.

138

1 **PROFESSOR WHITWORTH:** That's part of it, yes. Many of them
2 are health professionals who will have heard through the
3 course of their work that there's a few cases of what
4 apparently are related conditions occurring somewhere in
5 the country.

6 **MR KEITH:** Will an alert be issued on the basis of a single
7 piece of information, or does the system work on the
8 basis that there must be some confirmation sought before
9 ProMED, as a system, will disseminate an alert?

10 **PROFESSOR WHITWORTH:** It's moderated and edited, but
11 a single report is sufficient to be posted.

12 **MR KEITH:** What was the role of ProMED in detecting Covid
13 and alerting the world to the outbreak in China?

14 **PROFESSOR WHITWORTH:** The first report of a cluster of
15 pneumonias of unknown origin was first reported by
16 ProMED.

17 **MR KEITH:** So is ProMED a device or a source that ought to
18 be protected or perhaps better funded or nurtured, on
19 account of the self-evidently very valuable role that it
20 performed in relation to Covid?

21 **PROFESSOR WHITWORTH:** It certainly plays a very valuable
22 role. I have no insight into how robust its funding
23 health is, so I don't know.

24 **MR KEITH:** All right.

25 **PROFESSOR WHITWORTH:** But I think, as well as ProMED, there
140

1 are a number of similar reporting networks, and these
2 are increasingly being co-ordinated and brought
3 together.

4 **MR KEITH:** A different aspect of the international situation
5 is the European Union and its institutions and systems.

6 Could you look, please, at page 29, paragraph 76.

7 As we're all aware, following the EU exit, the
8 United Kingdom formally left the institutions and
9 structures of the European Union. Was one of the bodies
10 that we left the European Centre for Disease ... and
11 Control?

12 **DR HAMMER:** Yes. Sorry, I did not hear the question mark at
13 the end of that sentence.

14 **MR KEITH:** Yes, it was a question rather than me giving
15 evidence, I should say.

16 Could you tell us, please, something about the ECDC,
17 what does it do on the European frame?

18 **DR HAMMER:** Yes. So the ECDC is an EU membership -- an EU
19 agency of which membership is by EU country and also
20 some other countries, for example Norway is also
21 a member. It has a key role in co-ordinating infectious
22 diseases -- cross-border infectious disease threats
23 across the European Union, primarily the European Union.

24 Quite important to note here that obviously there's
25 quite a difference between what is needed in a situation

141

1 are working together, and for example for that we also
2 have the WHO regional offices, and the UK being a part
3 of the WHO European region, so there's another level of
4 collaboration in there as well.

5 **MR KEITH:** But the United Kingdom is party to all those
6 other non-European international structures --

7 **DR HAMMER:** Yes.

8 **MR KEITH:** -- the WHO, of course, primarily, and has its own
9 structures for surveillance and for response and
10 response capacity and so on.

11 In practice, if not in law and if not
12 constitutionally, is there an ability for the
13 United Kingdom to take any benefit from the
14 European Union's early warning and response system if it
15 wished to do so?

16 **DR HAMMER:** I believe so. I do not know the specific legal
17 context for that, but I am aware that, in the context of
18 the Covid pandemic, access to the early warning and
19 response system was granted to additional countries by
20 the European Commission and that goes by decision of the
21 European Commission, and examples of that are countries
22 on the EU enlargement scheme and other priority Eastern
23 European countries. Others I'm not aware of.

24 **MR KEITH:** All right, thank you.

25 So post EU exit, the United Kingdom has its own

143

1 like the EU, where you have a union of nation states,
2 versus an individual nation state. So ECDC can be
3 a little bit seen as the response to that additional
4 need in a union of states. So that is with regard to
5 co-ordinating surveillance, co-ordinating surveillance
6 particularly for threats that cross borders,
7 co-ordinating capacity building across borders, and
8 similar cross-border issues.

9 **MR KEITH:** But the need for such cross-border capacity and
10 response and alert systems and so on presumably is
11 mitigated to a very large extent if not completely by
12 replication of any individual country's own response,
13 alert, surveillance systems. So if the United Kingdom
14 has its own alert, surveillance and response capacities,
15 then, of course, there is no need to be part to
16 a European, pan-European structure?

17 **DR HAMMER:** I think that again touches slightly on what
18 I mentioned beforehand, that international and national
19 are running in parallel and informed by each other. So
20 every EU country will have that national structure
21 itself as well. It is just that the moment you
22 integrate countries into a union, you will need to have
23 an integrated system on top of that nation state system,
24 rather than replacing it. But that obviously, to
25 a different degree, also applies to other countries that

142

1 fully fledged substantive and comprehensive system for
2 doing all the things that it might previously have done
3 within the rubric of the European Union.

4 You talk at paragraph 79 on page 30 of how the
5 United Kingdom's approach in the form of Public Health
6 England, which of course has now been subsumed into the
7 United Kingdom Health Security Agency -- was seen
8 internationally as something as a beacon in the area of
9 public health, for incorporating health promotion with
10 other public health functions.

11 Have other countries in fact modelled their own
12 approach to this particular area of public health on the
13 United Kingdom approach?

14 **PROFESSOR WHITWORTH:** Indeed, there are examples where that
15 has happened. What Public Health England did was it
16 brought together various aspects of public health under
17 the one body, so control of infectious diseases, but
18 also control of non-communicable diseases. Also,
19 bringing together health promotion under the one body
20 was the strategy that they used in Public Health
21 England. That has certainly been used by the French,
22 Santé publique is modelled on that Public Health England
23 model, and I was recently in Singapore, where I was told
24 that their Communicable Disease Agency is also taking on
25 that model. So it is a model that has been followed in

144

1 other places.

2 **MR KEITH:** Public Health England has now been disbanded and
3 part of it subsumed into the United Kingdom Health
4 Security Agency, and I think Public Health England's
5 functions in part have been split between the
6 United Kingdom Health Security Agency and regional
7 health authorities and, in part, the
8 Department of Health and Social Care.

9 **PROFESSOR WHITWORTH:** Indeed.

10 **MR KEITH:** Has that division of functions subsequent to the
11 disbandment of Public Health England changed your
12 opinion about the way in which we went about it, in
13 terms of Public Health England, has been admired and
14 emulated? Have we gone now in a different direction to
15 that which we had before?

16 **PROFESSOR WHITWORTH:** We have gone in a different direction
17 now and health promotion is separated off from Public
18 Health England --

19 **MR KEITH:** Does that matter?

20 **PROFESSOR WHITWORTH:** I think it's a question of preference.

21 My personal opinion is that to keep them all together is
22 beneficial and that there are cross-learning to be had
23 from having communicable, non-communicable control
24 together and having your health promotion team working
25 together with your disease control teams.

145

1 expected that there will still be changes made to that
2 draft, that discussions will still go on for quite some
3 time, but also very important to note even if the
4 pandemic treaty was decided today, or even a week ago,
5 it will take time for us to see what the impact of that
6 will be. This is not something that is immediately
7 self-evident, but rather something that we have to
8 evaluate a little bit down the line.

9 **MR KEITH:** Are you able to say anything about the degree of
10 change that any such pandemic treaty, if agreed, will
11 bring about to the existing International Health
12 Regulations? For example, will it provide for very real
13 differences in terms of obligations on all member
14 countries to report outbreaks within their borders, or
15 obligations to close their borders, or obligations to
16 close one's borders to stop the influx of infection or
17 an outbreak? I mean, how far beyond the current
18 regulatory regime is the treaty likely to go, if agreed?
19 Or can you not say?

20 **DR HAMMER:** That will entirely depend on what the member
21 states of the assembly actually are able to agree on.

22 **MR KEITH:** So there's no smoke that tells us yet what
23 sort of changes they might be prepared to agree?

24 **DR HAMMER:** I think there is in the drafting an appetite for
25 significant changes, but how much of that will survive

147

1 **MR KEITH:** All right.

2 My Lady, that's an issue that we'll be looking at in
3 the context of DHSC witnesses in due course.

4 At paragraph 83 you say:

5 "... the global landscape of surveillance
6 co-ordination for infectious diseases is in flux as
7 changes are being made at several levels and it will
8 take time to gather sufficient evidence to assess the
9 impacts of these changes."

10 You go on to describe how, on a global level,
11 negotiations are under way to draw up and agree a new
12 pandemic treaty, and that pandemic treaty is designed,
13 if it comes into force and is agreed, to replace the
14 existing International Health Regulations to which you
15 referred earlier.

16 Firstly, what did you mean by the global landscape
17 of surveillance co-ordination being in flux? Are there
18 significant changes underfoot? Do they matter?

19 **DR HAMMER:** So I think the exact thing here is that we do
20 not fully know yet, that's exactly what is in flux,
21 indeed. The pandemic treaty, from what we know so far,
22 is quite more substantial than the IHR were, so there's
23 now a first draft being discussed, that is with member
24 states. But it is very, very early days. So it is very
25 difficult to say anything yet, because it can be

146

1 is, at least to me, impossible to tell.

2 **MR KEITH:** Can you give us any assistance with the likely
3 timeframe for any such treaty?

4 **DR HAMMER:** I do not know.

5 **MR KEITH:** All right.

6 Well, in light of all that, at page 31 of your
7 report, you set out the learning points from the
8 Independent Panel for Pandemic Preparedness and Response
9 which I referred you to earlier, and we can see the main
10 points set out there at 84:

11 "- stronger leadership and better co-ordination.

12 "- a more focused independent WHO.

13 "- investment in epidemic preparedness now.

14 "- stronger accountability mechanisms to spur
15 action.

16 "- improved system for surveillance and alert.

17 "- a platform for vaccines, diagnostics,
18 therapeutics and supplies with equitable delivery.

19 "- access to financial resources for preparedness
20 and response."

21 Those are all laudable aims, but pitched at, if
22 I may respectfully suggest, quite a high level of
23 generality. They're very broad.

24 In terms of the United Kingdom, have you given
25 thought to what sort of perhaps more precise

148

1 recommendations have been suggested by the scientific
2 community and what recommendations should, in your joint
3 opinion, be made? And are they at paragraph 87,
4 page 32?

5 **PROFESSOR WHITWORTH:** Yes, thank you.

6 So we've listed here a number of suggestions, some
7 of which come from the scientific community, others are
8 things that we feel ought to be considered.

9 One is that having sufficient reserve capacity
10 within the health system is very important for
11 resilience of the health system. We heard this morning
12 from the representative from the Cabinet Office talking
13 about resilience there, so maybe this is something that
14 is in process, but we don't know. And we feel this is
15 important, particularly perhaps for laboratory capacity
16 where, if there's a need to develop new tests and then
17 to run new diagnostic tests for diseases, that needs
18 specific staff. And if that pulls them away from their
19 important day jobs, then that has a knock-on effect on
20 the health service in general to continue to deliver for
21 other conditions that aren't part of that outbreak that
22 is there.

23 So in terms of resilience, we feel there does need
24 to be thought about how you create that additional
25 capacity, particularly in the laboratory.

149

1 **DR HAMMER:** I think we've seen during the Covid pandemic
2 that the impacts were not felt the same across all
3 groups --

4 **MR KEITH:** Yes.

5 **DR HAMMER:** -- and this is a response to that, and I believe
6 the Inquiry is hearing evidence on Friday on this matter
7 as well, so clearly there is a recognition that this is
8 an important issue, not so much in preventing a health
9 emergency from happening, but in softening the blow, if
10 you want to say.

11 **MR KEITH:** At (c) you refer to the need to ensure scientific
12 advisers are not only independent but autonomous. That
13 may be -- well, perhaps I'll allow you simply to develop
14 that, although it's a matter which we'll be looking at
15 in much greater detail in Module 2.

16 Why is independence and transparency of value in
17 terms of having a system that brings about quantifiable
18 benefit?

19 **PROFESSOR WHITWORTH:** I think in terms of the independence,
20 that enhances transparency and to gain community trust
21 and engagement with a clear understanding of who gave
22 advice and so on, I think that's very valuable to gain
23 community trust, which I think is important in
24 responding to any outbreak.

25 With autonomy, the issue there is that experts

151

1 **MR KEITH:** And just pausing there, resilience, as we've
2 heard, is about, I suppose, a standing capacity of
3 a country to be able to absorb a knock, to be able to
4 respond, to roll with the blows, and to recover. So
5 having extra capacity in terms of improving your
6 resilience is something more than being able to put into
7 place a surge capacity if a particular event requires
8 it; it requires more of a standing capacity than a mere
9 immediate response to an event. Is that right?

10 **PROFESSOR WHITWORTH:** That's right. I think generally there
11 are two approaches to resilience. One is that there's
12 a degree of redundancy in the system, so that there are
13 sufficient staff who can be deployed to a specific area;
14 and the other is that you have staff that are trained in
15 different roles and are able to be re-deployed
16 themselves, as required, according to the requirements
17 of the system.

18 **MR KEITH:** All right. And you've referred there, obviously,
19 to (a). At (b) you refer to:

20 "Better understanding of how to support minority
21 ethnic groups and how healthcare providers and public
22 health teams can work alongside community leaders ..."
23 In the world of biosecurity and biosecurity threats,
24 whilst that is again a self-evident and laudable aim,
25 how will that bring about practical benefit?

150

1 aren't simply responding to questions put to them by
2 government, but bring their own questions and dilemma
3 for discussion as well, and that diversity of input
4 guards against group-think, we believe, and we think
5 that would be for the benefit of developing the
6 recommendations for future epidemics.

7 **MR KEITH:** (e), you refer to the need for in-action and
8 after-action reviews. You will know that there have
9 been any number of reviews since the Covid pandemic, by
10 Parliament, by parliamentary bodies, by the government
11 itself, of course the international bodies to which
12 you've made reference, and a number of commissions, but
13 all in their own particular fields and, I might suggest,
14 far narrower in significant part than this Inquiry.

15 Has the government in the field of biosecurity very
16 recently issued a Biological Security Strategy? If you
17 could say yes, rather than nodding, that would help the
18 transcript.

19 **DR HAMMER:** I did not fully understand the question --

20 **PROFESSOR WHITWORTH:** Sorry, I wasn't nodding so much as --

21 **DR HAMMER:** Yeah, I was -- we were -- I think I was looking
22 for the document --

23 **PROFESSOR WHITWORTH:** I think by inference, we believe there
24 must be, because there is now this new Biological
25 Security Strategy that has come out and that does look

152

1 to us that it has been developed with some after-action
2 reviews.

3 **MR KEITH:** Could we have that, please, on the screen. It
4 doesn't have an INQ number, but it's been fed into the
5 system. It's the Biological Security Strategy that
6 I know was fed into the working parts earlier.

7 (Pause)

8 Ah, there we are.

9 So I think on Monday the government issued --
10 published this paper, "UK Biological Security Strategy".
11 Could we perhaps look at page 8.

12 There is the "Executive Summary". It sets out the
13 government's:

14 "... renewed mission, vision, outcomes and plans to
15 protect the United Kingdom and our interests from
16 significant biological risks, no matter how these occur
17 and no matter who or what they affect."

18 They describe how the response, on the right-hand
19 side of the page, sets out the strategic framework, the
20 four pillars of the response -- understanding,
21 preventing, detecting responding -- and what I think are
22 described as cross-cutting enablers, which run through
23 all four pillars: UK Leadership, Governance and
24 Co-ordination -- over the page, please -- UK Science
25 Base, Health and Life Science Sectors; International

153

1 **MR KEITH:** Does this implementation plan affect your
2 opinions or the recommendations which you've made?

3 **DR HAMMER:** I don't think it so much changes them as more
4 that it takes on already quite a few of those that we're
5 making.

6 **MR KEITH:** All right.

7 So we needn't trouble ourselves to try to put the
8 two together and then see to what extent whatever you
9 put in your report has been superseded by the passage of
10 time in this plan?

11 **LADY HALLETT:** Do you understand some of it? It seems like
12 a fair bit of ... I don't know, what does "to
13 effectively remediate" mean? I mean, it's classic,
14 I'm afraid. There seems to me to be rather a lot of
15 jargon and not enough plain communication, but maybe
16 I need to be a scientist like you two.

17 **DR HAMMER:** I think that is a very typical document of this
18 type.

19 **LADY HALLETT:** You're obviously used to them. Thank
20 goodness I'm not!

21 **PROFESSOR WHITWORTH:** I mean, I think there are some
22 elements of what we recommend that we feel are covered
23 here, and if it would be helpful we could explain some
24 of those?

25 **MR KEITH:** Well, I think perhaps it might be easier if we

155

1 Leadership.

2 Then, please, page 10. Could you zoom in, so that
3 we can read it. Thank you very much.

4 The government has set out a high level strategy
5 implementation plan in the short, medium and long term
6 in relation to those five doctrinal pillars, if a pillar
7 can be doctrinal: Understand; Prevent; Detect; Respond;
8 and Crosscutting.

9 There are a number of proposals set out, mainly by
10 the way of continuing to do things, continuing to
11 provide assistance, further developing other matters,
12 delivering improvements, continuing to promote and
13 develop practices, and continuing to develop
14 capabilities.

15 Have you had a chance to look at this strategy?

16 I appreciate it's only very recently been published.

17 **DR HAMMER:** Briefly.

18 **PROFESSOR WHITWORTH:** Yes.

19 **MR KEITH:** Have you been able to take into account the
20 high-level strategy implementation plan when reaching
21 a final view in relation to the recommendations that
22 you've just been talking about and which you'll continue
23 to set out?

24 **PROFESSOR WHITWORTH:** Yes, we have.

25 **DR HAMMER:** Yes.

154

1 look, go back to your report at INQ000196611 and --
2 because we've already dealt with the first handful of
3 points that you made on page 32, but we look at the
4 recommendations you make on page 33 of INQ000196611, and
5 as we go through them, where you believe that your
6 initial view has been altered or requires alteration or
7 where, in fact, it is indicative of what the government
8 itself is saying, then you can say so as we go along.

9 So it was page 33, please, thank you.

10 **LADY HALLETT:** That I understand.

11 **PROFESSOR WHITWORTH:** Right.

12 **MR KEITH:** That, I think, is not page 33, unless I'm
13 mistaken.

14 **DR HAMMER:** No, that is not.

15 **PROFESSOR WHITWORTH:** Paragraph 88.

16 (Pause)

17 **MR KEITH:** Ah, yes, the pagination in the hard copy report
18 is different from the electronic version. I apologise.

19 So paragraph 88:

20 "We also recommend that consideration is given to
21 the following:

22 "a. Ensuring that action is taken from the learning
23 points of regular simulation exercises for known and
24 unknown epidemic threats."

25 To what extent, Professor and Dr, is action not

156

1 currently taken from learning points of regular
 2 simulation exercise? In what way is the historical
 3 simulation exercise process different?
 4 **PROFESSOR WHITWORTH:** I think it can be difficult to know
 5 what the answer to that is, if one's external to the
 6 process. There are regular simulation exercises that
 7 occur, certainly for known epidemic threats. What
 8 action is taken is not entirely clear to us, and I don't
 9 think the new Biological Security Strategy really gives
 10 any further reassurance on that.
 11 **MR KEITH:** Is the point, though, that in the past all
 12 exercises have been conducted on a premised basis? So,
 13 for example, the planners will say "In this exercise
 14 we're dealing with an outbreak of MERS", or "we're
 15 dealing with an influenza pandemic", or "we're dealing
 16 with Ebola in Nottingham", whatever it might be, and
 17 then they react accordingly. Your suggestion is that
 18 further and closer attention is given to exercises which
 19 are based on presumed unknown epidemic threats?
 20 **PROFESSOR WHITWORTH:** I mean, sometimes with simulation
 21 exercises the participants don't know at the start what
 22 it is that they are dealing with. The people who have
 23 set the exercise know, but the participants have to find
 24 out what it is that they're dealing with, just like in
 25 the real world; and that is a valuable exercise to go

157

1 allowed to run away from one's own country, to run away
 2 from the control of the authorities, and the way to do
 3 that -- to make sure control is not lost -- is to have
 4 available mass diagnostic testing so that everybody can
 5 know whether or not they are infected, to have that
 6 capacity, to scale up case detection and tracing, so
 7 make sure that those people who are infected can be
 8 traced and made sure that they isolate, and then
 9 a flexible approach to risk assessment and to ensure
 10 hospitals and care homes are adequately resourced, to be
 11 able to deal with the consequences of infection?
 12 So they're all very sensible recommendations, but
 13 they all hang on the need to ensure that if you lose
 14 control you've got the wherewithal to get it back and to
 15 be able to care for your population.
 16 **DR HAMMER:** Yes.
 17 **PROFESSOR WHITWORTH:** That's right, and the other point
 18 there is that there is information, there is learning,
 19 there is best practice from outside of this country,
 20 from previous experience that can be drawn upon.
 21 **MR KEITH:** We're going to pass over (c), because I think the
 22 issue of national security and political leadership is
 23 perhaps not one for biosecurity experts, although
 24 however eminent.
 25 "d. [Strengthening] and [clarifying] scientific

159

1 through.
 2 **MR KEITH:** All right, that's very clear, thank you.
 3 "b. Learning from the experiences in China and
 4 neighbouring Asian countries during the early stages of
 5 the ... [pandemic] ..."
 6 Scaling up diagnostic testing, being able to scale
 7 up case detection and contact tracing early in
 8 an epidemic, flexible approach to risk assessment,
 9 ensuring hospitals and care homes are adequately
 10 resourced.
 11 I mean, they, if I may suggest, are all again
 12 laudable and very sensible conclusions which might
 13 readily be drawn in a general sense from
 14 an understanding of Britain's response to the pandemic.
 15 To what extent are these grounded in your own
 16 biosecurity expertise?
 17 **PROFESSOR WHITWORTH:** They are very much grounded in that,
 18 and the point here is that acting early and decisively
 19 is really important in an outbreak, to be able to keep
 20 on top of it and keep in control of it, and I think this
 21 recommendation of ours still stands.
 22 **MR KEITH:** So is the heart of your recommendation in this
 23 regard that experience from other countries highlights
 24 the need for control, it highlights the need to ensure
 25 that whatever outbreak the disease amounts to is not

158

1 leadership by reinstating the National Expert Panel ...
 2 (NEPNEI), or a similar body ..."
 3 That's the panel, to which I made reference earlier,
 4 which had been disbanded.
 5 I asked you earlier what the gain would be of
 6 reinstating that panel or a similar body, and in fact
 7 you said that whilst one could have a number of
 8 different bodies operating at different spheres and
 9 different levels, there was a need to bring all the
 10 information and learning together, perhaps at a level
 11 above it.
 12 Do you think that there is a need for this sort of
 13 body, or is it a question of bringing the intelligence
 14 and learning together in an overarching structure?
 15 **PROFESSOR WHITWORTH:** We note in the new Biological Security
 16 Strategy that they talk about developing a biothreats
 17 radar, which we believe does bring all those different
 18 elements of epidemic intelligence together in one place,
 19 and so we welcome that, seeing that, and I think that --
 20 well, it's not entirely clear what independent expert
 21 advice would go into that biothreats radar but, that
 22 caveat aside, this new body does sound to us like it
 23 would fulfil the suggestion we make here.
 24 **MR KEITH:** (e), you turn to surveillance and you say:
 25 "Bringing together surveillance for influenza, and

160

1 other respiratory viruses, with surveillance for other
2 pathogens with epidemic potential. At present, these
3 are treated separately by WHO and the [United Kingdom]."

4 You mean they're not treated separately by the WHO
5 from the United Kingdom, but both are treated separately
6 in the United Kingdom as with the WHO?

7 **PROFESSOR WHITWORTH:** Indeed.

8 **MR KEITH:** Why would bringing together the different systems
9 for surveillance, those for influenza and those for
10 other pathogens, make a difference?

11 **PROFESSOR WHITWORTH:** Because if we're thinking about the
12 biosecurity risks that there are, then influenza is not
13 separate from the other infectious agents that there
14 could be, like Covid or whatever, and so to have that
15 treated by a different body with a danger that there's
16 no cross-talking and no co-ordination, seems to us
17 not -- not a good plan, and to have a more cohesive
18 review would be beneficial. It's not clear from this
19 document to what extent these would all be incorporated
20 together, but it does sound like the biothreats radar at
21 least would co-ordinate and synthesise influenza
22 responses together with those for other new and emerging
23 pathogens.

24 **MR KEITH:** All right. (f), the United Kingdom needs to
25 be -- in short, to have:

161

1 diagnostic tests. So is that what you're referring to,
2 you're referring to the issue of mass testing of being
3 able to get the diagnostic tests out on a mass scale?

4 **PROFESSOR WHITWORTH:** Yes, indeed, yes. Yes.

5 **MR KEITH:** All right.

6 You in fact say also that there's a need to ensure
7 that the United Kingdom adequately responds in relation
8 to clinical trials. Were there not in fact a number of
9 extremely efficient and very, very large-scale clinical
10 trials conducted in the United Kingdom during the course
11 of the pandemic?

12 **DR HAMMER:** Indeed there were.

13 **PROFESSOR WHITWORTH:** There were.

14 **MR KEITH:** VIVALDI, ZOE, and so on?

15 **PROFESSOR WHITWORTH:** Yes, and we need to make sure that
16 that continues.

17 **DR HAMMER:** So this is less a recommendation of "This went
18 wrong, we need to get this better", and more, "We need
19 to continue this, and we need to keep this".

20 **MR KEITH:** Right, thank you.

21 "Engagement in this way with academic research
22 groups is needed so that key unanswered questions ...
23 can be rapidly addressed."

24 Is that a general appeal to make sure that there is
25 always the requisite level of scientific expertise so

163

1 "... the ability to adequately respond to an
2 epidemic with good epidemiological surveillance,
3 including genomic sequencing, effective engagement and
4 communication with society, rapid launch of clinical
5 trials, development of diagnostic tests, vaccines and
6 therapeutics ..."

7 That is a very broad area indeed, Professor and Dr.
8 I wonder whether the best way through that is to ask you
9 to focus perhaps on the diagnostic test side.

10 In the Covid pandemic as it happened, the
11 United Kingdom developed particularly a diagnostic test
12 and very rapidly.

13 Why do you say that the United Kingdom, by
14 implication, doesn't currently have the ability to
15 adequately respond with good development of diagnostic
16 testing and rapid launch of clinical trials?

17 **PROFESSOR WHITWORTH:** The issue with diagnostic testing is
18 that, while a test was developed very rapidly for Covid,
19 it was, if you remember, inaccessible for most people in
20 the early stages of the outbreak, that the scale of
21 testing that was feasible was inadequate for the
22 expanding epidemic.

23 **MR KEITH:** Ah, yes, you say here "development of diagnostic
24 tests", not dissemination, supply and general practice
25 in the population, or use in the population of

162

1 that governments and decision-makers can draw on
2 practical and research science in order to be able to
3 make the right decisions?

4 **PROFESSOR WHITWORTH:** Yes, I think in general this worked
5 pretty well within the Covid epidemic, and we'd like to
6 see that continue.

7 **MR KEITH:** Finally, you refer on page 35 to something that
8 you described as community based surveillance systems.
9 You say in paragraph 95:

10 "... surveillance systems are good for delivering
11 a pandemic response that is based on deaths and
12 hospitalisations, and health care consultations but less
13 good for identifying infections, illness or chronic
14 disease ...

15 "96. Consideration could be given to developing
16 stronger community-based surveillance. This could be
17 built on the model of the community-based surveillance
18 system established by the ... (ONS) ..."

19 What did you mean by community-based surveillance,
20 and what is the practical benefit of having a stronger
21 community-based surveillance system?

22 **PROFESSOR WHITWORTH:** Currently most of the routine
23 surveillance is based on hospital activity or people
24 going to GP clinics, and that's fine to an extent, but
25 to know how widely a disease is circulating with

164

1 a community, within the community, one needs to be
 2 sampling the community to be able to do that, and what
 3 our suggestion here is, is that we should build on these
 4 systems that we have at the moment to have routine
 5 surveillance going on in the community. And indeed,
 6 since we made that recommendation, we see that the
 7 Office for National Statistics has set up a new
 8 community-based respiratory illness surveillance
 9 programme called CRIS, which is Covid and Respiratory
 10 Infections Survey, and we welcome that, because we feel
 11 that while it might be sort of narrowly focused on
 12 respiratory infections, that's exactly the area that we
 13 feel we should be moving into with surveillance. So
 14 that's good.

15 **MR KEITH:** Were there to have been an extensive
 16 community-based surveillance system in January,
 17 February, March, April of 2020, of course the government
 18 would have been able to understand far better the extent
 19 of the spread, the nature of the transmission,
 20 of course, and the characteristics of the pathogen that
 21 would have assisted it to be able to respond as
 22 efficiently as possible?

23 **PROFESSOR WHITWORTH:** Yes, it would have given us a better,
 24 clearer picture rather than it being focused on
 25 hospitals entirely.

165

1 Pete Weatherby and I'm asking questions on behalf of
 2 bereaved families. Just three brief areas, two of which
 3 have been touched on, but I've got a couple of
 4 supplementary questions about.

5 Can I take you back to your paragraph 88(b) in your
 6 report, and you were asked some questions about this
 7 a few moments ago, so this is the point about learning
 8 from the experiences in China and neighbouring Asian
 9 countries.

10 Can I just check with you: which other countries did
 11 you have in mind? Korea?

12 **PROFESSOR WHITWORTH:** Yes, South Korea, Vietnam, Taiwan,
 13 Singapore.

14 **MR WEATHERBY:** Yes. Thailand, perhaps?

15 **PROFESSOR WHITWORTH:** Yes.

16 **MR WEATHERBY:** Thank you.

17 This is, of course, a recommendation looking
 18 forward, but these countries had measures to either slow
 19 the entry of the disease into their countries or to slow
 20 its infection within their countries once it had
 21 arrived; is that right?

22 **PROFESSOR WHITWORTH:** Indeed.

23 **MR WEATHERBY:** So that's what we're talking about.

24 Then contact tracing to chase down the contacts to
 25 again limit the spread of the infection within the

167

1 **MR KEITH:** That's clear, thank you.

2 My Lady, those are all the questions that I intend
 3 to put to Professor Whitworth and Dr Hammer, thank you
 4 very much.

5 My Lady, you'll know from the system in place before
 6 you in this Inquiry that the core participants have the
 7 opportunity of identifying areas that they wish
 8 the Inquiry to examine. There is then a secondary
 9 process whereby they may identify particular questions
 10 which they would wish either the Inquiry to put or which
 11 they would wish to put themselves.

12 You have provisionally indicated already the areas
 13 which Mr Weatherby, on behalf of Covid-19 Bereaved
 14 Families for Justice UK, wants to put himself. Of
 15 course that has to be revisited in light of the actual
 16 evidence given by the witnesses, but may I invite you --
 17 and I won't perhaps seek formal permission in this way
 18 in the future, but on this occasion may I invite you to
 19 formally give permission to allow Mr Weatherby to put
 20 the questions he wishes to put in light, now, of the
 21 actual evidence which has been given.

22 **LADY HALLETT:** Mr Weatherby.

Questions from MR WEATHERBY KC

23 **MR WEATHERBY:** Of course I'll be brief.

24 There are just three points. My name is
 25

166

1 country, and that of course limited the infection and
 2 bought time until vaccines were available, yes?

3 **PROFESSOR WHITWORTH:** Yes.

4 **MR WEATHERBY:** That led to better outcomes in those
 5 countries than might otherwise have been the case?

6 **PROFESSOR WHITWORTH:** Certainly in the initial wave, yes.

7 **MR WEATHERBY:** Yes, thank you.

8 Now, am I right that those countries had developed
 9 those points, those policies, because of SARS and MERS,
 10 probably, but particularly SARS? So they'd learned from
 11 what had happened 20 years before, effectively.

12 **PROFESSOR WHITWORTH:** We ourselves don't have any direct
 13 insights into the policy decisions that were made, but
 14 yes, we would believe that --

15 **MR WEATHERBY:** Yes.

16 **PROFESSOR WHITWORTH:** -- those would have been strongly
 17 influenced by their experience with SARS.

18 **MR WEATHERBY:** Yes. Of course your experience is here. Can
 19 you help us as to why there wasn't similar learning in
 20 the UK? Why is it that countries like South Korea or
 21 Thailand managed to do this and the UK didn't?

22 **PROFESSOR WHITWORTH:** I think because of their direct
 23 experience of having had large serious outbreaks of
 24 coronavirus --

25 **MR WEATHERBY:** Yes.

168

1 **PROFESSOR WHITWORTH:** -- whereas in this country it was very
 2 small numbers.
 3 **MR WEATHERBY:** Yes.
 4 **DR HAMMER:** Indeed.
 5 **MR WEATHERBY:** Okay, but the information was there.
 6 **PROFESSOR WHITWORTH:** Yes.
 7 **MR WEATHERBY:** Yes..
 8 Finally on this point, so that led in the initial
 9 stages, as you say, to a better outcome in those
 10 countries? Yes. Okay, that's all I want to ask you
 11 about that point.
 12 Can I go back to the prioritisation committee,
 13 Professor Whitworth: you were on this from 2015 to 2018,
 14 I think.
 15 **PROFESSOR WHITWORTH:** Indeed.
 16 **MR WEATHERBY:** I think you then said that the committee
 17 didn't meet after 2018.
 18 **PROFESSOR WHITWORTH:** Thinking about that, I can remember
 19 meeting in the very early stages of the coronavirus
 20 outbreak --
 21 **MR WEATHERBY:** Right. Sure.
 22 **PROFESSOR WHITWORTH:** -- so I think 2020 --
 23 **MR WEATHERBY:** I see.
 24 **PROFESSOR WHITWORTH:** -- was probably the last time we met.
 25 **MR WEATHERBY:** Yes, okay. Am I right that Sir Peter Horby,
 169

1 process?
 2 **PROFESSOR WHITWORTH:** That sounds eminently sensible.
 3 **MR WEATHERBY:** Thank you.
 4 Now, the initiative itself was to try to reduce the
 5 time between the emergence of a public health emergency
 6 from a pathogen and the time at which effective tests
 7 and mitigations could be developed; is that right?
 8 **PROFESSOR WHITWORTH:** Correct, yes.
 9 **MR WEATHERBY:** So in the initiative itself, it was referred
 10 to as the urgent need for accelerated research and
 11 development.
 12 **PROFESSOR WHITWORTH:** Yes.
 13 **MR WEATHERBY:** So that was the process.
 14 Research and development by whom?
 15 **PROFESSOR WHITWORTH:** By different groups. That would
 16 include academic groups but it would also include
 17 government scientists --
 18 **MR WEATHERBY:** Yes.
 19 **PROFESSOR WHITWORTH:** -- such as PHE, as it was at the time,
 20 and it would also include industry.
 21 **MR WEATHERBY:** Right. So was part of the initiative -- was
 22 there any follow-through from the initiative in terms of
 23 the report being referred to member states so that they
 24 would take it forward in an organised way?
 25 **PROFESSOR WHITWORTH:** As I recall, the process was that
 171

1 the chair of NERVTAG, and Miles Carroll from PHE were
 2 also on that committee?
 3 **PROFESSOR WHITWORTH:** I certainly remember Miles Carroll
 4 being on that committee, yes.
 5 **MR WEATHERBY:** All right, we can check that. But this was
 6 something that was taken very seriously by leading UK
 7 scientists in this area?
 8 **PROFESSOR WHITWORTH:** What was?
 9 **MR WEATHERBY:** The committee, the prioritisation committee.
 10 **PROFESSOR WHITWORTH:** The prioritisation committee, yes.
 11 **MR WEATHERBY:** So the point of it, to take these dangerous
 12 pathogens more seriously than had been in the past was
 13 a real priority for people like you in this field?
 14 **PROFESSOR WHITWORTH:** Indeed.
 15 **MR WEATHERBY:** Yes, and was your role, and the role of the
 16 others from the UK, was it as independent scientists
 17 with expertise in this area, or was there an official
 18 element to it?
 19 **PROFESSOR WHITWORTH:** I believe it's an individual
 20 appointment. Certainly in my case I wasn't representing
 21 an organisation as such.
 22 **MR WEATHERBY:** Yes. Do you think it would be preferable,
 23 with initiatives like this from the WHO, if there was
 24 a mechanism of reporting back to official bodies here so
 25 that that learning can fast-track, if you like, into the
 170

1 having identified priority diseases, then calls would go
 2 out for proposals for development of a MERS vaccine or
 3 SARS diagnostic test or whatever, and groups would be
 4 encouraged to develop those and to seek funding, and
 5 because that had priority from WHO, that would then give
 6 proposals for funding greater weighting.
 7 **MR WEATHERBY:** Okay, so would it be fair to describe it as
 8 an ad hoc follow-through process?
 9 **PROFESSOR WHITWORTH:** Erm ... well, the call would go out to
 10 all interested parties. Whether they responded to that
 11 would be their choice.
 12 **MR WEATHERBY:** Yes. Again, would it be better if the WHO
 13 system involved putting the call out to Member States --
 14 **PROFESSOR WHITWORTH:** Erm --
 15 **MR WEATHERBY:** -- so that the member states could ensure
 16 that there was research and development into these
 17 dangerous pathogens?
 18 **PROFESSOR WHITWORTH:** I suppose in a way that would add
 19 another party into the chain of what was happening
 20 there. I mean, it might be that some countries really
 21 don't have the capacity to develop such tests. You need
 22 to have a fairly specialist laboratory to be able to
 23 develop those and not all countries would be able to do
 24 it.
 25 I would certainly agree with you that the national
 172

1 public health authorities in that country should be
 2 aware that these calls have gone out as well as
 3 individual laboratories. Certainly that would be
 4 sensible.

5 **MR WEATHERBY:** Are you aware of any actual UK action that
 6 followed from the 2018 report, for example?

7 **PROFESSOR WHITWORTH:** Well, I believe the UK vaccine
 8 initiative that Miles Carroll led did address several of
 9 the issues that were brought up.

10 **MR WEATHERBY:** I see. So the report would have fed into
 11 that?

12 **PROFESSOR WHITWORTH:** Yes.

13 **MR WEATHERBY:** That's very helpful.

14 Now, finally on this point, you mentioned the UK
 15 pandemic flu plan, which was based on the 2011 plan.
 16 Within that, there's an acceptance with flu that
 17 measures to stop the transmission of flu once the
 18 dangerous pathogen had emerged would almost certainly
 19 fail. So there was a fatalistic approach to flu.

20 You've mentioned that having a plan is better than
 21 not having a plan for diseases such as Covid that
 22 emerge, unknown diseases that emerge. Isn't that
 23 a problem where the plan is based on not having
 24 an approach to slowing the transmission of it?

25 **PROFESSOR WHITWORTH:** I think it is, and I think that in
 173

1 **PROFESSOR WHITWORTH:** It wasn't the Covid plan, it would
 2 have been the SARS plan, at least initially, and then
 3 modified as more information came up.

4 **MR WEATHERBY:** Thank you.

5 Finally, Mr Keith asked you about the Joint External
 6 Evaluation process, and you agreed that the UK had
 7 scored quite highly on that process, and also the Global
 8 Health Security Index.

9 Can I just take you back to the WHO Independent
 10 Panel for Pandemic Preparedness and Response on Covid in
 11 2021. I'll put it on the screen, if I may.
 12 INQ000183545, and it's at page 18, please.

13 **(Pause)**

14 Bottom of the -- well, bottom of the text on
 15 page 18, at the bottom there should be a graph --

16 **LADY HALLETT:** With lots of circles.

17 **PROFESSOR WHITWORTH:** Yes.

18 **MR WEATHERBY:** With lots of circles, hoops rather than
 19 spaghetti today, I think. But the text just above that,
 20 if I can just read a few lines, it's the last few
 21 sentences:

22 "Country preparedness was also assessed under the
 23 voluntary Joint External Evaluation process, undertaken
 24 to date by 98 countries. An independent academic
 25 exercise, the Global Health Security Index, also sought
 175

1 future it would be good to have not just a pandemic flu
 2 plan but one that is more generic for respiratory
 3 infections that takes into account different incubation
 4 periods.

5 The reason why there is that fatalistic attitude
 6 towards influenza is that when you've got an incubation
 7 period of just one to three days, by the time you're
 8 aware that the disease is in your community, it's
 9 everywhere and it's too late to act. That isn't the
 10 case if you've got a longer incubation period, as we did
 11 with Covid, which meant that it is possible to implement
 12 more of a plan to control transmission.

13 **MR WEATHERBY:** So the plan going forward must have
 14 a recognition that you may be able to slow transmission?

15 **PROFESSOR WHITWORTH:** I think now we've had three
 16 experiences of Covid epidemics, we've got more
 17 information to develop a more generic Covid type of plan
 18 for the future. I think that was harder when we'd just
 19 got the two rather divergent approaches.

20 **MR WEATHERBY:** Yes, although I think we'd agreed earlier
 21 that the Asian countries had kind of got the message
 22 about the transmission point.

23 **PROFESSOR WHITWORTH:** Yes, but I would imagine their plan
 24 was the SARS plan.

25 **MR WEATHERBY:** Yes.

174

1 to score country pandemic preparedness."

2 Then we have this rather interesting graph which I'm
 3 not going to go to, I'm just going to note. But then on
 4 the next page, if we could have the next page up,
 5 please, what all these measures have in common was that
 6 their ranking of countries did not predict the relative
 7 performance of countries in the Covid-19 response, and
 8 then it goes on to say why.

9 Then towards the end of the main first paragraph:
 10 "The failure of these metrics to be predictive
 11 demonstrates the need for a fundamental reassessment
 12 which better aligns preparedness measurement with
 13 operational capacities in real-world stress
 14 situations~..." et cetera.

15 So simple point, we shouldn't put too much store in
 16 these JEE scores; would that be a fair way of looking at
 17 it?

18 **PROFESSOR WHITWORTH:** I think it would. I think ... I think
 19 the lack of any correlation there between the two was
 20 a surprise and not what we would have anticipated before
 21 the pandemic.

22 **MR WEATHERBY:** Yes.

23 **PROFESSOR WHITWORTH:** But one thing that I think's very
 24 important to get across is that the JEE is rather
 25 narrowly focused and it is looking at the public health
 176

1 capabilities and capacities within a country.
 2 **MR WEATHERBY:** Yes.
 3 **PROFESSOR WHITWORTH:** It's not looking at the wider picture,
 4 it's not looking at the general health of the
 5 population, inequity, the state of the health service or
 6 care sector or policy or political decisions that are
 7 made about an epidemic. It is solely looking at the
 8 capabilities of the public health system.
 9 **MR WEATHERBY:** Yes. So the scores that we have been through
 10 may not take us very far, for those reasons?
 11 **PROFESSOR WHITWORTH:** Indeed. So with retrospect, it's
 12 perhaps not entirely surprising given the narrow nature
 13 of what is being scored in a JEE that that's not
 14 reflected in the overall mortality.
 15 **MR WEATHERBY:** That's very helpful. Thank you.
 16 **DR HAMMER:** If I may add a sentence to that, I think there's
 17 also one other aspect to consider here, that there is
 18 an inherent risk in scoring highly on such a tool, and
 19 that is a certain amount of complacency and of feeling
 20 that one is well prepared. I think that is certainly
 21 a lesson that almost everyone in the world can take to
 22 the future, from the scale of individuals to the scale
 23 of whole societies, that just because we've done good in
 24 the past or because we've done good on an exercise just
 25 should not lead us to say "Okay, we're good, we can stop

1 here".
 2 **MR WEATHERBY:** Thank you very much. Those are all the
 3 questions I have.
 4 **LADY HALLETT:** Very good, Mr Weatherby, thank you very much.
 5 Mr Keith, anything further?
 6 **MR KEITH:** No, thank you, my Lady.
 7 **LADY HALLETT:** Professor Whitworth, Dr Hammer, thank you
 8 very much indeed. I did follow what you were saying, so
 9 thank you very much for helping us.
 10 **(The witnesses withdrew)**
 11 **LADY HALLETT:** Right, good time to break?
 12 **MR KEITH:** My Lady, that concludes the evidence for today.
 13 **LADY HALLETT:** Very well, and 10 o'clock tomorrow?
 14 **MR KEITH:** Yes, please.
 15 **LADY HALLETT:** 10 o'clock tomorrow, please.
 16 **(4.08 pm)**
 17 **(The hearing adjourned until 10 am**
 18 **on Thursday, 15 June 2023)**
 19
 20
 21
 22
 23
 24
 25

1 **INDEX**

2

3 Submissions on behalf of Public 1

4 Health Scotland by MR BOWIE KC

5

6 Submissions on behalf of the 6

7 Government Office for Science

8 by MR HILL

9

10 Submissions on behalf of the 15

11 Department of Health and

12 Social Care by MS SCOLDING KC

13

14 Submissions on behalf of the Welsh 26

15 Government by MR KINNIER KC

16

17 Submissions on behalf of the 34

18 Scottish Government by

19 MR MITCHELL KC

20

21 Submissions on behalf of The 45

22 Executive Office Northern

23 Ireland by MR SHARPE KC

24

25

1 Submissions on behalf of the Cabinet 51

2 Office by MR STRACHAN KC

3

4 PROFESSOR JIMMY WHITWORTH (sworn) 74

5

6 DR CHARLOTTE HAMMER (affirmed) 74

7

8 Questions from LEAD COUNSEL TO THE INQUIRY 74

9

10 Questions from MR WEATHERBY KC 166

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

DR HAMMER: [110]

76/5 76/18 79/12
 79/16 79/20 80/24
 81/4 81/7 81/12 81/21
 82/22 83/3 83/13
 83/24 84/12 84/24
 85/14 85/21 87/3
 87/12 87/16 87/20
 87/25 89/10 89/21
 89/25 90/9 90/15
 90/20 91/9 91/25
 92/21 92/23 93/8
 93/13 94/11 94/13
 95/7 95/9 96/6 96/17
 97/15 97/22 98/9
 99/12 99/18 100/15
 101/1 101/12 101/16
 102/12 103/4 103/9
 109/4 109/13 109/15
 110/2 110/6 111/3
 111/21 112/15 113/25
 114/9 115/1 115/11
 116/1 116/17 116/24
 117/24 118/8 118/24
 119/13 119/18 119/21
 119/25 120/3 126/17
 127/2 127/14 128/20
 128/22 128/25 129/19
 130/22 130/25 132/11
 133/2 141/12 141/18
 142/17 143/7 143/16
 146/19 147/20 147/24
 148/4 151/1 151/5
 152/19 152/21 154/17
 154/25 155/3 155/17
 156/14 159/16 163/12
 163/17 169/4 177/16

LADY HALLETT:

[33] 1/3 6/10 15/2
 26/13 34/15 45/12
 45/17 45/24 46/7
 51/20 73/21 74/5
 75/18 93/10 98/18
 98/23 101/23 132/17
 133/1 133/10 138/23
 138/25 139/7 155/11
 155/19 156/10 166/22
 175/16 178/4 178/7
 178/11 178/13 178/15

MR BOWIE: [1] 1/9**MR HILL: [1]** 6/14**MR KEITH: [197]****MR KINNIER: [1]**

26/17

MR MITCHELL: [1]

34/20

MR SHARPE: [3]

45/20 46/5 46/13

MR STRACHAN: [2]

51/24 74/3

MR WEATHERBY:

[42] 166/24 167/14

167/16 167/23 168/4
 168/7 168/15 168/18
 168/25 169/3 169/5
 169/7 169/16 169/21
 169/23 169/25 170/5
 170/9 170/11 170/15
 170/22 171/3 171/9
 171/13 171/18 171/21
 172/7 172/12 172/15
 173/5 173/10 173/13
 174/13 174/20 174/25
 175/4 175/18 176/22
 177/2 177/9 177/15
 178/2

MS SCOLDING: [1]

15/7

PROFESSOR**WHITWORTH: [145]**

76/17 77/3 77/14
 77/23 78/3 78/9 78/15
 78/17 78/19 79/1
 80/13 80/18 80/23
 87/4 88/8 88/17 89/6
 89/9 89/22 90/16
 90/24 94/14 94/17
 94/19 95/2 99/25
 101/2 101/13 101/17
 101/20 103/20 104/3
 104/19 105/15 106/8
 106/20 107/5 107/14
 107/23 108/7 117/12
 117/14 117/25 121/24
 122/12 122/16 123/24
 125/1 125/4 125/21
 126/16 126/18 126/24
 127/13 127/19 127/22
 128/2 128/11 128/15
 128/19 128/21 132/3
 132/10 132/25 134/12
 134/25 136/5 136/20
 137/12 138/1 138/4
 138/11 139/13 140/1
 140/10 140/14 140/21
 140/25 144/14 145/9
 145/16 145/20 149/5
 150/10 151/19 152/20
 152/23 154/18 154/24
 155/21 156/11 156/15
 157/4 157/20 158/17
 159/17 160/15 161/7
 161/11 162/17 163/4
 163/13 163/15 164/4
 164/22 165/23 167/12
 167/15 167/22 168/3
 168/6 168/12 168/16
 168/22 169/1 169/6
 169/15 169/18 169/22
 169/24 170/3 170/8
 170/10 170/14 170/19
 171/2 171/8 171/12
 171/15 171/19 171/25
 172/9 172/14 172/18
 173/7 173/12 173/25
 174/15 174/23 175/1

175/17 176/18 176/23
 177/3 177/11

0

0.01-0.02 [1] 90/8

0.017-0.1 [1] 88/3

0.02 [1] 90/8

0.1 [1] 88/3

03 [1] 89/2

1

1 April 2020 [1] 4/14

1 December 2022 [1]

11/18

1 million [1] 24/6

1.45 [1] 98/24

1.45 pm [1] 99/3

10 [4] 89/23 110/19

110/20 154/2

10 am [1] 178/17

10 million [2] 109/21

110/4

10 o'clock [2] 178/13

178/15

10.00 am [1] 1/2

100 Days Mission [2]

11/21 14/8

100,000 [2] 129/11

131/5

105 [1] 10/19

11 [2] 110/19 113/6

11 January 2020 [2]

48/13 48/19

11.05 am [1] 45/14

11.20 [1] 45/13

11.20 am [1] 45/16

12 recommendations

[1] 67/21

12.4 pm [1] 99/1

13 [3] 67/19 68/15

129/2

13 were [1] 28/12

14 [1] 131/17

14 June 2023 [1] 1/1

15 [2] 120/13 129/1

15 June 2023 [1]

178/18

152 local [1] 19/14

16 [2] 108/15 109/18

16 January 2017 [1]

48/12

17 [2] 132/16 133/11

17 February 2020 [1]

48/23

18 [3] 110/20 175/12

175/15

18 statements [1]

28/9

19 [49] 3/5 5/13 6/19

6/23 11/17 18/10

24/16 26/25 31/5

35/16 37/10 42/1 43/4

43/21 46/17 48/24

50/6 51/7 52/4 52/8

53/3 54/3 54/12 55/1
 64/23 65/2 65/3 66/11
 66/16 67/16 68/19
 69/6 79/15 85/23 91/2
 91/24 92/9 94/8 105/6
 105/9 118/9 120/11
 120/20 120/24 125/5
 128/18 129/15 166/13
 176/7

19 December 2022

[1] 71/8

19's [1] 52/19

191 clinical [1] 19/15

1918-20 [1] 86/23

1957-59 [1] 87/22

1968-70 [1] 88/4

1977-78 [1] 88/22

2

2 June [1] 75/8

2.50 pm [1] 139/1

20 [2] 86/23 136/23

20 February 2020 [1]

48/24

20 January [1] 79/23

20 years [2] 19/21

168/11

200,000 [1] 131/3

2001 [1] 119/11

2002 [2] 89/8 94/6

2002-03 [1] 89/2

2003 [3] 43/8 89/11

121/8

2004 [2] 37/17 60/15

2005 [2] 53/1 127/11

2007 [1] 111/6

2009 [2] 55/17 101/3

2009-10 [1] 89/23

2010 [2] 54/2 60/22

2011 [4] 27/14 40/11

44/13 173/15

2012 [3] 90/17 94/7

100/1

2013 [2] 92/4 98/3

2014 [1] 44/14

2015 [6] 20/24 41/11

44/16 77/1 78/15

169/13

2016 [7] 21/6 39/18

41/10 92/4 98/3

109/20 110/5

2017 [3] 32/17 41/5

48/12

2018 [10] 32/20

40/22 41/12 42/8

77/24 78/21 98/4

169/13 169/17 173/6

2019 [10] 4/14 42/8

61/8 94/3 94/8 105/9

111/9 118/15 118/23

129/17

2020 [28] 4/14 5/11

5/18 11/2 20/14 21/9

29/7 30/7 31/15 32/10

42/15 48/13 48/19
 48/21 48/23 48/24
 48/25 51/10 58/8 65/1
 67/14 67/17 98/4
 121/25 125/7 129/18
 165/17 169/22
2021 [12] 47/24 48/3
 58/11 66/2 67/24
 68/19 69/2 69/18
 70/15 70/22 128/23
 175/11

2022 [9] 5/17 11/18

65/5 69/4 71/3 71/8

76/25 77/2 79/13

2023 [4] 1/1 18/3

68/12 178/18

2030 [1] 71/16

2050 [2] 109/22

110/4

21 April 2023 [1]

68/12

213 hospital [1]

19/15

21st [1] 104/7

22 [2] 10/20 113/6

225,668 [1] 92/18

23 [1] 139/12

23 final [1] 69/8

24 [1] 138/21

24 hours [1] 139/20

25 [1] 122/17

25,800 registered [1]

19/17

250 [1] 78/23

26 July 2021 [1] 48/3

27 [1] 129/3

28 recommendations

[1] 68/23

28,000-odd [1] 90/5

284,000 [1] 90/4

29 [2] 131/17 141/6

29 January 2020 [1]

48/21

3

3 March 2020 [1]

48/25

3.05 [1] 138/25

3.05 pm [1] 139/3

30 [2] 125/7 144/4

30 years [1] 139/16

30.6 million [1] 92/12

300 people [1] 65/4

31 [1] 148/6

32 [2] 149/4 156/3

33 [3] 156/4 156/9

156/12

34,000 general [1]

4	82/19 83/13 84/5 85/21 85/21 89/13 90/25 97/16 102/1 104/4 104/21 105/2 105/17 106/18 106/21 107/15 108/4 108/17 109/21 112/5 112/22 115/19 115/20 115/21 117/3 117/20 118/11 119/3 121/7 121/16 123/18 124/7 124/10 124/14 129/20 130/15 132/4 134/1 134/25 136/25 138/19 139/9 139/11 139/16 141/16 145/12 145/12 147/9 147/11 149/13 149/24 150/2 150/25 151/17 154/22 160/16 161/11 167/4 167/6 167/7 167/23 169/11 169/18 174/22 175/5 177/7	9/17 42/25 47/15 accounts [1] 15/23 accurate [2] 20/15 132/24 accurately [2] 113/18 132/19 ACDP [1] 137/3 achievable [1] 131/5 achieve [1] 14/6 achievement [1] 27/2 acknowledge [3] 6/16 6/22 51/16 acknowledged [3] 35/12 39/1 95/24 acknowledges [1] 52/5 acknowledging [1] 14/18 across [31] 2/16 4/10 5/20 8/13 41/17 42/5 46/5 49/8 50/24 52/6 52/14 53/19 57/11 57/25 60/25 61/15 63/18 63/19 65/11 71/11 72/21 73/7 99/13 116/19 123/25 129/1 131/23 141/23 142/7 151/2 176/24 act [10] 37/17 44/14 48/22 53/1 54/1 60/15 60/22 71/5 129/25 174/9 acting [1] 158/18 action [10] 44/16 125/20 148/15 152/7 152/8 153/1 156/22 156/25 157/8 173/5 actions [7] 22/7 37/9 53/5 54/13 56/18 66/8 69/20 activate [1] 39/4 activated [1] 8/8 activities [3] 19/24 47/16 60/24 activity [2] 71/2 164/23 acts [1] 38/17 actual [4] 40/24 166/15 166/21 173/5 actually [11] 83/16 92/3 112/4 115/13 116/3 129/23 133/22 134/18 136/4 139/14 147/21 acute [2] 66/16 89/3 acutely [1] 48/16 ad [1] 172/8 adapt [4] 21/18 44/24 58/25 96/22 adaptability [2] 30/11 30/15 adaptation [2] 83/12 83/13 adapted [3] 21/9	36/20 41/24 adapting [1] 96/19 adaptive [1] 59/20 add [4] 13/17 117/12 172/18 177/16 addition [3] 28/7 40/18 55/20 additional [6] 12/18 20/24 114/25 142/3 143/19 149/24 address [14] 13/16 23/12 28/19 33/12 42/22 43/24 46/15 54/7 66/22 68/4 108/15 130/4 131/17 173/8 addressed [7] 11/23 14/1 28/23 33/25 111/20 119/15 163/23 addressing [4] 27/22 38/22 49/24 111/25 adds [1] 114/24 adduced [1] 12/2 adequacy [2] 27/9 32/9 adequately [7] 26/24 27/23 158/9 159/10 162/1 162/15 163/7 adherence [1] 71/23 adjourned [1] 178/17 adjournment [1] 99/2 administrations [3] 36/12 65/9 71/12 admired [1] 145/13 adopted [2] 36/19 128/12 Adrian [1] 11/6 adult [2] 19/17 20/3 advance [6] 14/11 20/17 23/13 75/24 113/18 134/6 advancement [1] 14/23 advances [2] 13/18 80/16 advice [27] 7/23 8/10 8/15 8/19 9/4 9/7 9/9 9/11 9/12 9/14 9/21 9/24 10/7 10/13 12/8 13/25 16/22 21/24 33/23 38/22 40/2 43/2 48/25 59/9 61/21 151/22 160/21 advise [3] 7/22 25/15 44/2 advised [1] 123/5 Adviser [2] 7/20 69/2 advisers [2] 7/4 151/12 advisory [12] 8/2 12/16 44/1 72/7 77/12 133/17 136/8 136/22 136/24 137/3 137/25 138/5	aerosol [1] 91/7 affect [7] 57/19 94/20 94/25 127/5 127/6 153/17 155/1 affected [9] 6/17 12/9 16/22 51/9 52/17 52/21 53/8 60/5 122/9 affects [1] 59/4 affirmed [2] 74/14 180/6 afflicted [1] 92/6 afforded [1] 1/15 afraid [5] 45/21 51/15 93/11 130/23 155/14 Africa [1] 98/4 after [13] 3/15 11/5 15/13 18/18 65/6 78/19 82/10 100/10 120/10 128/22 152/8 153/1 169/17 after-action [2] 152/8 153/1 after-effects [2] 15/13 18/18 afternoon [2] 32/1 75/1 again [23] 21/3 40/6 54/21 85/10 88/3 90/23 91/20 93/11 111/10 112/6 112/7 125/22 126/4 128/7 128/13 131/15 131/21 131/23 142/17 150/24 158/11 167/25 172/12 against [13] 9/12 12/22 21/19 25/23 55/7 63/15 78/6 80/16 103/19 104/2 104/17 114/2 152/4 age [1] 23/7 agencies [1] 57/24 agency [8] 9/6 38/4 69/1 141/19 144/7 144/24 145/4 145/6 agenda [1] 48/1 agents [1] 161/13 Ages [2] 98/12 98/14 ago [3] 130/2 147/4 167/7 agree [10] 13/17 121/23 125/22 132/20 133/1 133/9 146/11 147/21 147/23 172/25 agreed [6] 125/4 146/13 147/10 147/18 174/20 175/6 agreeing [1] 14/11 agreement [3] 17/4 58/14 59/14 agriculture [1] 85/7 Ah [5] 108/10 136/15 153/8 156/17 162/23 ahead [1] 74/9 aided [1] 21/3
457 [1] 90/6				
5				
5 June [1] 75/8 58 [1] 139/12 59 [1] 87/22				
6				
6.9 million [1] 92/13 62.9 [1] 92/5				
7				
7 May 2021 [1] 68/19 7,000 [1] 58/20 7/7 bombings [1] 33/9 70 [1] 88/4 76 [1] 141/6 774 [1] 89/15 78 [1] 88/22 79 [1] 144/4				
8				
83 [1] 146/4 84 [1] 148/10 86 pages [1] 120/14 866 [1] 90/21 87 [1] 149/3 88 [3] 156/15 156/19 167/5	above [3] 131/11 160/11 175/19 abroad [2] 77/6 103/15 absence [2] 13/6 48/17 absences [1] 15/16 absolutely [3] 82/22 111/21 124/10 absorb [1] 150/3 academia [1] 134/19 academic [3] 163/21 171/16 175/24 academics [1] 14/19 Academy [6] 67/25 68/3 68/12 68/15 71/18 77/8 accelerate [1] 11/24 accelerated [1] 171/10 accelerating [1] 121/2 acceptance [1] 173/16 accepted [4] 67/22 68/16 68/23 69/9 access [3] 13/20 143/18 148/19 accident [4] 111/2 111/11 111/14 111/18 accidental [3] 97/4 110/23 111/8 accidents [1] 111/3 according [1] 150/16 accordingly [1] 157/17 account [6] 24/13 113/5 116/14 140/19 154/19 174/3 accountability [1] 148/14 accountable [4] 4/3			
83 [1] 146/4 84 [1] 148/10 86 pages [1] 120/14 866 [1] 90/21 87 [1] 149/3 88 [3] 156/15 156/19 167/5				
9				
9.6 [1] 89/18 90 [1] 92/15 93 [2] 128/25 129/1 95 [1] 164/9 96 [1] 164/15 98 [1] 175/24				
A				
ability [11] 13/3 23/5 23/10 23/20 25/25 31/4 43/20 109/7 143/12 162/1 162/14 able [39] 1/22 14/25 16/3 22/16 24/5 35/22 39/19 80/14 80/22 97/2 105/3 105/24 105/25 114/3 119/22 126/24 130/4 130/9 130/10 130/11 147/9 147/21 150/3 150/3 150/6 150/15 154/19 158/6 158/19 159/11 159/15 163/3 164/2 165/2 165/18 165/21 172/22 172/23 174/14 about [87] 3/9 13/13 17/10 20/11 21/5 21/6 23/15 27/9 28/24 30/6 36/4 39/24 43/19 45/8 60/1 64/4 75/24 77/19 77/20 78/10 81/15				

A	112/25 119/9 132/12 136/21 138/12 140/24 143/24 146/1 148/5 150/18 155/6 158/2 163/5 all-risks [1] 39/7 Allergy [1] 133/24 allow [3] 63/14 151/13 166/19 allowed [3] 21/7 63/10 159/1 allowing [1] 40/17 allows [3] 38/2 104/23 136/6 almost [3] 126/20 173/18 177/21 alone [1] 28/9 along [5] 34/22 104/10 111/21 114/14 156/8 alongside [5] 25/2 68/13 73/8 136/17 150/22 already [22] 25/16 33/24 34/11 35/25 37/17 40/11 43/24 56/9 56/18 59/25 60/16 65/17 65/18 66/9 69/22 84/24 85/5 96/13 102/25 155/4 156/2 166/12 also [92] 3/2 3/4 6/22 13/17 16/7 16/20 18/16 21/7 21/12 22/24 23/5 23/18 25/6 27/18 29/16 30/17 32/20 38/14 40/7 40/22 42/2 45/5 46/18 47/21 49/3 49/3 49/12 49/16 54/13 57/24 60/2 60/2 60/21 61/22 62/22 64/12 65/22 67/1 68/9 69/11 71/5 76/11 77/9 78/23 79/17 82/9 83/18 83/25 84/1 84/4 84/14 86/3 88/24 93/17 93/22 97/1 98/2 98/9 99/12 104/9 104/23 108/24 110/11 115/18 118/14 123/9 127/2 128/8 128/11 129/24 130/5 130/19 133/19 135/22 137/4 141/19 141/20 142/25 143/1 144/18 144/18 144/24 147/3 156/20 163/6 170/2 171/16 171/20 175/7 175/22 175/25 177/17 alteration [1] 156/6 altered [2] 112/5 156/6 altering [1] 6/21	although [14] 2/21 27/13 30/21 31/7 53/20 81/10 92/1 100/20 101/5 120/21 135/23 151/14 159/23 174/20 altruistic [2] 6/23 25/10 always [4] 25/25 73/13 103/5 163/25 am [9] 1/2 3/4 45/14 45/16 45/22 143/17 168/8 169/25 178/17 amalgamation [1] 61/7 ambitious [1] 53/2 America [1] 133/25 among [2] 56/24 60/17 amongst [7] 3/16 17/15 19/10 24/6 69/24 75/21 90/1 amount [6] 1/19 86/13 93/25 106/12 129/16 177/19 amounts [1] 158/25 AMR [2] 109/19 110/1 analyse [1] 33/6 analysed [3] 13/24 29/17 40/24 analyses [2] 29/11 29/13 analysis [4] 8/15 31/6 33/12 70/16 anguish [1] 15/21 animal [13] 82/1 82/10 82/15 83/1 83/4 84/9 84/18 95/12 96/15 117/6 131/20 137/1 138/2 animals [14] 81/23 82/2 82/3 82/7 82/8 82/8 82/16 84/3 94/9 112/20 116/19 117/2 117/5 117/19 announced [1] 27/7 announcements [1] 139/24 announcing [1] 53/4 annual [2] 71/25 73/1 another [11] 12/22 17/22 31/20 79/17 83/19 98/16 103/1 104/7 104/10 143/3 172/19 answer [10] 14/14 25/14 26/22 27/1 27/11 28/13 75/22 88/11 124/21 157/5 answered [1] 95/9 answering [1] 74/4 answers [2] 51/9 101/21	antibiotic [1] 109/8 antibiotics [2] 96/21 108/22 anticipate [1] 61/14 anticipated [2] 30/16 176/20 antimicrobial [11] 83/18 96/11 96/16 96/17 108/14 108/18 108/19 109/19 109/24 110/10 117/1 antimicrobials [1] 110/12 antivirals [1] 23/14 any [44] 12/18 13/22 22/17 23/9 26/10 28/4 33/4 34/14 35/7 36/7 36/10 38/20 48/17 51/14 56/7 57/20 64/10 64/19 82/24 82/24 99/9 110/24 113/1 113/10 113/19 116/4 126/2 128/17 128/21 129/7 130/18 133/2 142/12 143/13 147/10 148/2 148/3 151/24 152/9 157/10 168/12 171/22 173/5 176/19 anybody [1] 73/24 anymore [1] 111/23 anything [10] 75/2 75/11 90/25 95/6 95/14 97/16 130/15 146/25 147/9 178/5 apart [2] 119/7 130/22 apologise [1] 156/18 apparent [1] 4/17 apparently [1] 140/4 appeal [1] 163/24 appear [5] 15/7 26/17 34/20 34/22 51/24 appeared [1] 123/12 appetite [1] 147/24 application [1] 27/16 applied [5] 48/15 49/9 123/19 129/21 135/20 applies [1] 142/25 apply [4] 49/2 50/17 136/2 136/3 applying [3] 122/19 125/3 125/13 appointed [1] 48/2 appointment [1] 170/20 appreciate [2] 130/14 154/16 appreciated [1] 61/13 appreciating [1] 106/1 appreciation [1]	107/17 approach [30] 6/3 20/9 36/6 36/19 38/13 39/7 40/1 50/15 63/11 66/5 69/7 103/6 104/20 108/1 116/22 122/19 123/2 124/8 124/11 127/12 135/13 136/1 136/6 144/5 144/12 144/13 158/8 159/9 173/19 173/24 approached [3] 36/9 36/10 125/18 approaches [4] 116/19 132/5 150/11 174/19 appropriate [4] 22/22 55/6 60/5 62/20 April [6] 4/14 11/2 42/15 58/11 68/12 165/17 April 2020 [2] 11/2 42/15 April 2021 [1] 58/11 are [199] area [19] 13/22 24/9 38/12 44/18 77/18 109/17 110/17 112/13 130/14 137/23 138/13 138/13 144/8 144/12 150/13 162/7 165/12 170/7 170/17 areas [19] 5/13 8/21 9/20 12/24 13/5 21/10 22/8 23/12 23/18 42/6 45/7 56/14 75/24 79/24 82/14 137/13 166/7 166/12 167/2 aren't [4] 126/14 131/9 149/21 152/1 arguably [1] 32/10 argue [1] 25/13 argument [3] 12/15 123/18 137/10 arise [2] 35/19 37/8 arising [1] 9/24 arm's [2] 19/11 47/17 armed [1] 16/11 around [11] 4/15 19/17 39/6 39/13 58/20 84/3 89/18 105/11 116/7 123/2 139/18 around 9.6 [1] 89/18 arrangements [11] 25/3 27/13 30/7 30/9 33/22 39/8 39/14 49/2 49/6 49/8 69/14 arrived [1] 167/21 articles [1] 78/25 as [213] Asian [4] 87/24 158/4 167/8 174/21 aside [3] 95/19 114/3
----------	---	---	--	--

A	assurance [2] 38/19 127/16	atypical [1] 10/17	173/15 173/23	165/18 166/21 167/3
aside... [1] 160/22	assure [1] 45/22	audit [5] 29/25 30/1 53/14 62/25 69/1	basically [1] 102/12	168/5 168/16 170/12
ask [14] 18/7 74/19 74/23 75/16 75/25 77/15 77/20 81/2 99/7 106/18 108/17 138/19 162/8 169/10	asymptomatic [4] 91/4 106/19 106/24 107/12	Audit Wales [1] 30/1	basis [9] 36/13 37/11 37/12 124/2 125/18 135/15 140/6 140/8 157/12	175/2 177/9
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	asymptomatically [3] 91/17 93/1 93/22	auspices [1] 127/17	bats [2] 94/9 100/4	before [23] 20/12 20/18 26/18 29/6 30/16 31/15 31/24 32/10 34/8 35/7 42/12 95/12 106/16 107/24 117/11 120/15 128/1 132/17 140/8 145/15 166/5 168/11 176/20
asking [2] 139/8 167/1	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	austerity [4] 31/16 42/4 49/12 49/12	Beattie [1] 34/24	beforehand [3] 82/4 82/5 142/18
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	authoritative [1] 43/1	became [7] 70/14 87/1 88/24 101/9 118/10 118/11 118/12	began [2] 11/1 125/14
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	authorities [10] 4/9 19/15 31/23 37/25 41/19 42/17 43/12 145/7 159/2 173/1	because [36] 5/1 18/21 20/6 22/12 28/1 77/17 81/16 83/16 85/16 86/24 93/20 93/25 97/1 107/23 113/10 115/2 115/13 115/18 116/7 117/17 119/5 122/14 124/21 137/21 137/24 146/25 152/24 156/2 159/21 161/11 165/10 168/9 168/22 172/5 177/23 177/24	behind [2] 45/25 102/12
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	autonomous [1] 151/12	becomes [3] 93/19 117/7 124/11	behaviour [4] 16/21 85/10 110/23 112/11
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	autonomy [1] 151/25	becoming [4] 4/14 18/15 116/6 117/23	believe [17] 75/11 81/20 86/11 87/25 91/9 94/13 106/3 128/11 143/16 151/5 152/4 152/23 156/5 160/17 168/14 170/19 173/7
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	available [6] 13/23 31/17 66/13 71/20 159/4 168/2	bed [2] 22/21 107/3	believes [1] 2/6
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	avenue [1] 112/17	beds [1] 22/21	benchmark [1] 63/14
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	avoid [2] 51/14 101/14	been [92] 1/15 2/12 2/17 2/20 5/4 7/14 7/16 10/3 11/14 15/2 17/17 17/24 18/20 20/23 27/3 28/16 29/11 30/16 30/23 33/24 35/20 44/10 44/21 45/2 45/4 46/16 49/12 53/18 54/4 55/3 60/16 62/11 68/24 68/25 70/8 70/17 80/14 80/22 81/15 86/11 90/3 92/7 92/16 93/6 94/5 94/24 95/4 95/18 96/2 96/5 98/19 102/2 103/5 103/7 108/5 110/24 114/24 121/2 121/19 121/20 122/14 125/10 125/13 133/13 138/10 139/16 144/6 144/21 144/25 145/2 145/5 145/13 149/1 152/9 153/1 153/4 154/16 154/19 154/22 155/9 156/6 157/12 160/4 165/15	best [16] 14/10 21/15 24/7 28/3 38/23 40/4
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/10 161/2 161/20 165/4 171/6 171/19 175/2 175/12 175/15 176/16 176/25 177/3 177/4 177/7	award [1] 67/15	become [9] 87/13 92/24 93/5 96/25 113/16 113/20 115/25 120/20 122/21	beneficial [4] 12/12 126/25 145/22 161/18
asked [9] 2/13 28/14 51/10 68/3 68/9 109/18 160/5 167/6 175/5	at [140] 1/12 4/14 4/15 5/2 5/7 6/16 7/19 9/19 10/13 10/22 11/7 14/22 16/4 16/13 16/16 16/21 16/25 17/7 19/13 22/22 22/25 24/21 26/23 28/5 28/23 33/10 33/20 33/25 34/20 39/19 40/6 40/8 40/20 45/13 48/22 56/15 57/19 58/20 59/5 59/6 59/6 60/9 60/24 64/10 64/19 72/17 73/25 74/3 74/25 76/19 76/24 77/11 79/3 79/23 80/22 82/24 83/9 83/16 83/18 86/25 88/2 90/4 90/8 90/13 90/23 92/4 94/3 95/6 95/20 96/10 98/24 101/25 105/18 108/15 110/3 110/19 110/19 111/3 111/22 111/23 111/24 112/2 113/6 114/15 116/24 117/2 118/10 118/14 118/16 118/23 119/2 119/4 120/8 122/17 122/23 123/17 125/14 126/2 127/9 132/6 132/14 136/17 136/23 138/21 138/25 139/12 141/6 141/12 144/4 146/2 146/4 146/7 148/1 148/6 148/10 148/21 149/3 150/19 151/11 151/14 153/11 154/15 156/1 156/3 157/21 160/8 160/			

B	blindsided [2] 107/19 116/15	Brexit [2] 32/15 32/18	66/1 66/7 66/24 75/1 76/25 80/20 80/21 82/9 83/7 84/17 84/18 86/12 87/24 88/3 88/17 89/17 90/6 90/22 91/10 91/23 92/5 94/5 94/15 95/13 95/16 96/15 99/14 99/20 99/22 100/4 100/8 100/20 100/22 102/3 103/3 104/23 105/7 105/15 105/21 105/23 105/25 106/4 106/23 106/24 107/5 107/15 108/8 109/24 110/7 110/11 112/3 112/6 117/5 117/21 119/15 121/9 121/17 122/11 124/11 124/23 125/2 125/22 127/7 127/24 130/5 132/4 132/7 133/4 135/5 135/9 135/22 136/10 136/17 138/19 140/10 140/25 142/9 142/24 143/5 143/17 144/17 146/24 147/3 147/7 147/25 148/21 149/14 151/9 151/12 152/2 152/12 153/4 155/15 156/3 157/23 159/12 160/21 161/5 161/20 164/12 164/24 166/16 166/18 167/3 167/18 168/10 168/13 169/5 170/5 171/16 174/2 174/23 175/19 176/3 176/23	67/20 67/22 68/16 69/8 69/11 69/16 69/22 70/1 70/14 70/21 71/3 73/15 149/12 180/1
best... [10] 43/20 50/19 55/11 71/22 71/23 93/13 103/18 105/19 159/19 162/8	blocks [2] 86/4 132/14	Brexit-related [1] 32/15	Cabinet committee [3] 59/6 59/8 59/11	
bet [1] 104/7	blood [1] 24/15	brief [5] 7/10 36/15 45/2 166/24 167/2	Cabinet Office [53] 51/25 52/9 53/23 54/16 54/17 55/12 55/18 55/20 55/21 56/8 56/11 56/14 56/17 56/21 56/22 57/1 57/2 57/6 57/23 58/7 58/12 58/16 58/21 59/15 60/11 60/23 62/25 63/2 63/19 63/23 64/12 64/16 65/1 65/15 65/18 66/3 66/19 67/1 67/10 67/12 67/17 67/20 67/22 68/16 69/8 69/11 69/22 70/1 70/14 70/21 71/3 73/15 149/12	
better [30] 2/9 2/22 6/4 12/18 21/13 33/8 34/6 37/19 39/12 51/17 54/10 56/7 66/14 72/16 99/24 113/13 133/3 133/4 135/3 140/18 148/11 150/20 163/18 165/18 165/23 168/4 169/9 172/12 173/20 176/12	blow [1] 151/9	Briefing [1] 59/15	Cabinet Office's [3] 55/4 65/13 69/16	
blows [1] 150/4	Blueprint [1] 78/2	briefly [6] 36/5 59/1 67/4 86/16 113/8 154/17	call [17] 14/25 18/8 29/5 43/3 74/10 81/24 82/15 85/25 110/9 110/18 124/14 125/15 126/5 129/20 134/17 172/9 172/13	
board [6] 3/12 32/19 40/19 41/6 60/25 66/4	blush [1] 33/10	bring [8] 8/9 38/11 139/25 147/11 150/25 152/2 160/9 160/17	called [17] 28/16 36/13 38/1 41/12 77/21 78/1 79/18 88/25 89/13 96/2 102/4 102/10 118/3 127/10 133/17 135/23 165/9	
Boardman [2] 67/12 68/18	boards [6] 31/23 37/7 37/25 41/18 43/11 63/21	bringing [7] 44/1 70/23 107/15 144/19 160/13 160/25 161/8	calls [2] 172/1 173/2	
bodies [24] 16/10 19/10 19/11 20/19 29/21 37/1 39/3 44/13 47/17 57/24 63/3 103/14 133/23 133/24 134/2 134/13 137/11 137/18 137/22 141/9 152/10 152/11 160/8 170/24	bodes [1] 27/5	brings [5] 10/24 39/10 61/16 96/23 151/17	Cambridge [2] 79/4 79/6	
body [16] 5/20 6/5 30/1 42/20 48/8 129/9 130/7 137/16 138/7 144/17 144/19 160/2 160/6 160/13 160/22 161/15	bodies [24] 16/10 19/10 19/11 20/19 29/21 37/1 39/3 44/13 47/17 57/24 63/3 103/14 133/23 133/24 134/2 134/13 137/11 137/18 137/22 141/9 152/10 152/11 160/8 170/24	Britain [1] 18/11	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
border [3] 141/22 142/8 142/9	borders [5] 142/6 142/7 147/14 147/15 147/16	Britain's [1] 158/14	camel [1] 91/16	
bore [1] 32/24	both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	British [1] 90/11	camels [5] 91/14 91/14 94/10 100/5 100/5	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	bottom [7] 83/9 97/19 120/5 122/23 175/14 175/14 175/15	British Government's [1] 90/11	Cameron [1] 56/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	bought [1] 168/2	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	can [98] 2/5 2/9 6/2 6/7 14/5 15/1 15/17 19/6 21/17 22/20 23/23 26/8 34/14 36/20 37/9 43/23 44/6 45/9 45/22 46/5 49/14 49/21 50/17 51/13 55/1 55/5 64/7 64/15 74/5 74/22 79/24 82/23 82/23 83/3 83/15 84/17 87/5 88/1 88/21 90/25 91/16 91/21 92/10 93/22	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	Bowie [4] 1/6 1/8 42/19 179/4	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	Boyd [1] 11/2	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	branches [1] 37/1	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	bravery [1] 52/7	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	breadth [2] 13/1 54/25	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	break [8] 45/13 45/15 74/25 75/1 75/2 138/22 139/2 178/11	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5	breakthroughs [1] 19/22	but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	calls [2] 172/1 173/2	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	Cambridge [2] 79/4 79/6	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5		but [139] 2/7 3/1 6/6 10/2 14/15 14/24 20/15 21/20 24/7 25/6 25/10 26/19 28/1 28/2 33/11 43/20 45/5 45/22 52/19 53/17 59/3 59/13 61/15 63/1	came [8] 4/13 28/10 78/20 80/19 88/18 111/24 112/16 175/3	
both [29] 4/3 4/5 15/14 19/18 19/20 20/12 22/24 24/16 26/1 31/9 32/22 55/7 66/21 74/4 75/7 75/9 76/13 77/6 84/3 99/10 101/14 103/14 107/12 110/6 110/8 117/1 118/8 130/17 161/5				

<p>C</p> <p>can... [54] 97/8 97/11 97/13 97/16 97/17 97/23 98/7 98/9 98/9 106/18 109/8 112/12 112/17 112/20 113/23 114/7 115/12 115/14 124/5 124/6 124/6 124/24 126/6 127/7 129/2 130/14 131/22 142/2 146/25 147/19 148/2 148/9 150/13 150/22 154/3 154/7 156/8 157/4 159/4 159/7 159/20 163/23 164/1 167/5 167/10 168/18 169/12 169/18 170/5 170/25 175/9 175/20 177/21 177/25</p> <p>can't [8] 88/17 95/9 95/16 108/21 115/2 119/7 124/22 126/10</p> <p>candidly [1] 53/7</p> <p>candour [2] 6/3 44/20</p> <p>cannot [4] 32/17 61/14 115/8 119/4</p> <p>capabilities [17] 21/17 21/21 25/1 39/12 62/12 63/3 63/6 63/8 64/5 66/4 69/3 69/25 72/17 73/5 154/14 177/1 177/8</p> <p>capability [2] 23/12 43/18</p> <p>capable [2] 58/1 100/13</p> <p>capacities [4] 55/23 142/14 176/13 177/1</p> <p>capacity [29] 13/10 14/10 22/4 22/17 23/25 36/7 39/12 115/18 119/5 126/13 129/1 129/4 129/4 129/7 129/13 131/14 131/16 142/7 142/9 143/10 149/9 149/15 149/25 150/2 150/5 150/7 150/8 159/6 172/21</p> <p>capture [2] 66/19 73/6</p> <p>care [38] 3/21 8/24 10/10 15/6 15/9 16/9 16/9 17/9 18/11 19/1 19/7 19/17 19/20 20/3 21/2 22/12 22/13 22/18 22/21 22/24 25/2 25/13 25/18 29/23 37/6 44/9 52/12 54/11 65/25 66/3 130/20 145/8 158/9 159/10 159/15 164/12</p> <p>177/6 179/12</p> <p>care homes [4] 10/10 16/9 158/9 159/10</p> <p>care sector [1] 177/6</p> <p>carefully [3] 12/1 43/19 73/16</p> <p>carers [1] 16/13</p> <p>caring [1] 18/24</p> <p>Caroline [1] 34/24</p> <p>Caroline Beattie [1] 34/24</p> <p>carried [3] 29/25 56/18 67/10</p> <p>carrier [1] 100/4</p> <p>carries [1] 60/23</p> <p>Carroll [3] 170/1 170/3 173/8</p> <p>carry [3] 62/19 63/2 114/18</p> <p>carrying [2] 30/13 118/7</p> <p>cascading [1] 109/14</p> <p>case [37] 20/22 21/22 37/4 47/12 55/3 81/16 87/9 87/10 87/12 87/14 88/2 89/17 90/6 90/22 92/4 92/20 92/23 93/2 93/3 93/4 93/14 93/18 93/24 101/4 101/7 101/8 111/24 115/17 125/5 125/21 126/1 135/9 158/7 159/6 168/5 170/20 174/10</p> <p>cases [24] 15/16 16/15 18/17 89/16 90/5 90/21 92/7 92/24 93/15 93/15 93/18 93/23 98/1 100/6 100/7 100/10 100/23 106/13 107/7 115/17 117/11 120/20 124/1 140/3</p> <p>catastrophic [3] 21/14 47/12 110/1</p> <p>categories [5] 96/9 96/11 97/8 108/14 135/10</p> <p>category [1] 97/4</p> <p>catharsis [1] 16/2</p> <p>cats [1] 94/10</p> <p>caught [1] 92/17</p> <p>cause [4] 94/20 102/6 120/19 126/13</p> <p>caused [3] 52/24 94/22 99/9</p> <p>causes [2] 36/18 54/10</p> <p>causing [3] 15/20 82/12 85/23</p> <p>caveat [1] 160/22</p> <p>CCG [3] 48/7 48/8 48/23</p>	<p>central [12] 14/2 19/11 19/12 31/13 36/24 36/24 59/16 59/19 64/6 69/7 70/3 71/11</p> <p>centre [4] 56/15 64/1 70/13 141/10</p> <p>century [2] 95/6 104/7</p> <p>certain [17] 17/15 17/21 35/18 63/9 64/13 84/19 84/20 85/1 86/13 93/25 105/1 105/2 123/16 124/8 129/10 133/6 177/19</p> <p>certainly [21] 55/2 75/18 81/21 95/11 99/12 100/7 106/20 122/5 124/16 129/19 133/8 140/21 144/21 157/7 168/6 170/3 170/20 172/25 173/3 173/18 177/20</p> <p>certainty [2] 95/10 95/17</p> <p>cetera [1] 176/14</p> <p>chain [1] 172/19</p> <p>chains [1] 100/8</p> <p>chair [4] 35/2 59/22 77/4 170/1</p> <p>Chair's [1] 50/15</p> <p>chaired [5] 8/3 8/4 37/12 48/7 73/10</p> <p>chairing [2] 62/19 63/20</p> <p>chairs [1] 11/4</p> <p>challenge [4] 11/1 20/2 66/18 72/8</p> <p>challenges [9] 5/7 10/22 13/11 24/24 26/10 35/16 55/9 57/16 64/22</p> <p>challenging [1] 113/17</p> <p>chance [3] 55/10 101/10 154/15</p> <p>Chancellor [1] 56/25</p> <p>change [11] 15/16 83/12 83/14 83/25 84/2 84/6 84/23 84/25 105/22 110/7 147/10</p> <p>changed [4] 16/20 110/3 110/6 145/11</p> <p>changes [20] 49/24 55/6 56/9 58/19 67/2 69/23 83/21 83/25 83/25 85/1 85/1 99/13 112/6 146/7 146/9 146/18 147/1 147/23 147/25 155/3</p> <p>channelled [1] 64/17</p> <p>characteristics [2] 54/1 165/20</p>	<p>charged [1] 50/3</p> <p>charitable [1] 19/12</p> <p>charities [1] 16/11</p> <p>Charlotte [3] 74/10 74/14 180/6</p> <p>chart [6] 87/7 87/21 94/3 95/19 97/19 104/23</p> <p>chase [1] 167/24</p> <p>chatter [1] 139/23</p> <p>check [4] 132/18 132/20 167/10 170/5</p> <p>chest [1] 91/8</p> <p>Chief [8] 7/4 7/19 8/5 9/2 11/19 20/25 40/15 40/16</p> <p>children [1] 5/14</p> <p>China [7] 88/24 111/10 118/12 118/13 140/13 158/3 167/8</p> <p>choice [2] 17/19 172/11</p> <p>choices [2] 52/23 65/12</p> <p>choose [1] 98/20</p> <p>Chris [1] 8/5</p> <p>Christie [1] 44/12</p> <p>chronic [2] 66/18 164/13</p> <p>chronologies [1] 2/15</p> <p>circles [2] 175/16 175/18</p> <p>circulating [1] 164/25</p> <p>circumstances [1] 49/9</p> <p>citizens [4] 17/21 26/1 35/23 52/24</p> <p>civet [1] 94/10</p> <p>civil [19] 9/5 37/16 47/9 47/10 47/18 47/21 47/25 48/6 48/7 49/16 56/3 57/25 60/15 64/20 67/24 68/14 70/5 71/4 72/1</p> <p>clarifying [2] 72/3 159/25</p> <p>class [1] 71/19</p> <p>classic [1] 155/13</p> <p>classified [1] 96/2</p> <p>Clauses [1] 48/21</p> <p>clear [15] 28/5 31/12 32/18 32/21 34/3 51/16 108/12 121/5 122/6 151/21 157/8 158/2 160/20 161/18 166/1</p> <p>clearer [1] 165/24</p> <p>clearly [3] 117/21 125/9 151/7</p> <p>client [1] 48/15</p> <p>climate [7] 42/4 83/25 84/6 84/23</p>	<p>84/23 84/25 84/25</p> <p>clinical [11] 6/24 13/4 18/16 19/15 130/20 131/14 131/25 162/4 162/16 163/8 163/9</p> <p>clinician [1] 93/17</p> <p>clinicians [4] 8/25 14/19 119/6 131/20</p> <p>clinics [1] 164/24</p> <p>close [6] 37/5 40/14 91/15 91/20 147/15 147/16</p> <p>closely [1] 65/8</p> <p>closer [1] 157/18</p> <p>cluster [5] 113/15 114/9 115/17 122/2 140/14</p> <p>clusters [2] 120/19 123/25</p> <p>co [33] 8/4 8/10 27/24 35/4 37/5 37/9 38/3 38/4 39/13 42/15 47/5 47/10 57/10 57/18 59/19 60/19 62/19 63/19 63/20 65/18 132/4 137/19 141/2 141/21 142/5 142/5 142/7 146/6 146/17 148/11 153/24 161/16 161/21</p> <p>co-chaired [1] 8/4</p> <p>co-chairing [1] 63/20</p> <p>co-led [1] 42/15</p> <p>co-operate [1] 35/4</p> <p>co-operated [1] 27/24</p> <p>co-operation [1] 37/5</p> <p>co-ordinate [5] 37/9 38/3 57/18 63/19 161/21</p> <p>co-ordinated [5] 8/10 65/18 132/4 137/19 141/2</p> <p>co-ordinating [6] 57/10 60/19 141/21 142/5 142/5 142/7</p> <p>co-ordination [11] 38/4 39/13 47/5 47/10 59/19 62/19 146/6 146/17 148/11 153/24 161/16</p> <p>coalescing [1] 5/7</p> <p>coalition [1] 46/22</p> <p>COBR [7] 8/8 48/20 59/15 59/22 64/14 70/6 70/17</p> <p>cohesive [1] 161/17</p> <p>cold [1] 94/21</p> <p>collaborate [1] 38/3</p> <p>collaborated [1] 40/9</p> <p>collaborates [1] 4/10</p> <p>collaboration [4] 5/24 24/5 71/1 143/4</p>
--	--	--	--

C				
<p>collaborative [1] 116/18</p> <p>collated [1] 13/24</p> <p>colleagues [1] 46/14</p> <p>collection [2] 14/1 42/21</p> <p>collective [4] 7/8 39/6 57/7 59/14</p> <p>collectively [1] 59/5</p> <p>College [3] 71/19 77/7 79/3</p> <p>combined [1] 41/16</p> <p>come [19] 12/23 32/9 34/8 34/12 45/10 46/24 53/17 55/9 83/20 87/23 97/6 104/8 104/10 121/18 121/19 130/11 137/18 149/7 152/25</p> <p>comes [4] 36/1 114/23 134/4 146/13</p> <p>comfort [2] 15/25 16/17</p> <p>coming [5] 2/3 98/14 116/16 122/6 135/5</p> <p>coming weeks [1] 2/3</p> <p>command [1] 49/1</p> <p>commenced [1] 89/8</p> <p>commencement [2] 51/4 81/2</p> <p>commences [2] 110/19 113/3</p> <p>commencing [1] 86/21</p> <p>comments [2] 51/18 59/25</p> <p>commerce [1] 85/5</p> <p>commercial [2] 58/5 58/6</p> <p>Commission [5] 29/25 44/12 58/10 143/20 143/21</p> <p>commissione [1] 67/25</p> <p>commissioned [2] 67/1 69/3</p> <p>commissioning [2] 19/16 33/23</p> <p>commissions [2] 120/23 152/12</p> <p>commit [2] 7/5 64/7</p> <p>commitment [6] 35/1 35/2 35/3 44/17 50/16 71/9</p> <p>commitments [1] 35/25</p> <p>committed [3] 2/11 3/24 26/9</p> <p>committee [28] 8/6 43/25 57/9 59/6 59/8 59/11 59/16 77/4</p>	<p>77/12 77/22 77/24 78/14 79/5 103/22 103/23 103/24 133/17 133/18 136/9 137/3 138/5 169/12 169/16 170/2 170/4 170/9 170/9 170/10</p> <p>committees [2] 29/20 137/7</p> <p>common [9] 7/6 33/11 62/1 62/7 94/9 94/21 112/19 117/9 176/5</p> <p>communicable [5] 24/14 144/18 144/24 145/23 145/23</p> <p>communication [4] 70/19 70/25 155/15 162/4</p> <p>communications [3] 49/1 67/13 67/16</p> <p>communities [3] 53/22 72/21 72/24</p> <p>community [26] 5/14 16/10 38/23 39/4 72/16 72/24 107/16 122/1 124/17 149/2 149/7 150/22 151/20 151/23 164/8 164/16 164/17 164/19 164/21 165/1 165/1 165/2 165/5 165/8 165/16 174/8</p> <p>community's [1] 24/4</p> <p>community-based [6] 164/16 164/17 164/19 164/21 165/8 165/16</p> <p>comorbidities [2] 13/9 23/8</p> <p>comparatively [1] 34/5</p> <p>comparators [1] 24/11</p> <p>compared [1] 24/10</p> <p>comparison [1] 90/7</p> <p>compassion [1] 16/16</p> <p>compete [1] 42/9</p> <p>competing [3] 12/21 25/23 42/5</p> <p>competitors [1] 24/11</p> <p>complacency [1] 177/19</p> <p>complete [1] 1/3</p> <p>completed [1] 68/24</p> <p>completely [2] 139/4 142/11</p> <p>completeness [1] 66/2</p> <p>completes [1] 74/6</p> <p>completion [1] 27/6</p> <p>complex [1] 19/10</p>	<p>complexities [1] 3/25</p> <p>complexity [1] 59/19</p> <p>complicated [1] 93/20</p> <p>comply [1] 75/15</p> <p>composition [1] 38/9</p> <p>compound [1] 68/5</p> <p>comprehensible [1] 8/11</p> <p>comprehensive [4] 8/11 73/3 118/16 144/1</p> <p>comprehensively [1] 49/24</p> <p>comprising [1] 57/24</p> <p>compulsory [1] 128/17</p> <p>concept [1] 102/17</p> <p>concern [18] 12/17 55/17 78/8 82/14 82/19 83/19 102/3 108/23 125/8 125/16 125/23 126/8 126/9 126/22 127/3 127/4 127/8 127/12</p> <p>concerned [8] 4/19 31/8 64/19 76/3 78/4 81/15 90/14 105/24</p> <p>concerning [2] 79/25 86/4</p> <p>concerns [1] 76/1</p> <p>conclude [1] 14/17</p> <p>concludes [1] 178/12</p> <p>conclusion [1] 34/8</p> <p>conclusions [5] 29/12 56/8 67/9 80/6 158/12</p> <p>concurrent [1] 68/5</p> <p>conditions [3] 134/20 140/4 149/21</p> <p>condolences [1] 15/11</p> <p>conduct [1] 66/10</p> <p>conducted [4] 68/13 69/14 157/12 163/10</p> <p>conducting [1] 73/1</p> <p>confess [1] 119/14</p> <p>confidence [1] 93/23</p> <p>confident [1] 88/18</p> <p>confined [1] 92/2</p> <p>confines [1] 48/15</p> <p>confirmation [1] 140/8</p> <p>confirmed [8] 75/9 93/3 93/6 93/15 93/16 93/16 93/16 123/7</p> <p>conflicts [1] 67/21</p> <p>confronting [1] 27/20</p> <p>Congo [1] 98/5</p> <p>connections [1] 39/11</p> <p>conscious [1] 2/23</p> <p>consensus [1] 63/15</p> <p>consent [1] 16/24</p>	<p>consequence [5] 6/18 9/23 79/8 133/16 136/8</p> <p>consequences [12] 32/23 36/18 47/11 53/16 53/21 54/7 54/8 62/2 62/7 79/11 110/1 159/11</p> <p>consequently [1] 4/17</p> <p>consider [8] 23/18 23/21 32/22 33/17 33/21 73/11 80/14 177/17</p> <p>considerable [7] 1/13 14/22 16/14 27/5 34/5 96/24 98/6</p> <p>consideration [7] 10/3 29/19 30/18 33/15 75/24 156/20 164/15</p> <p>considerations [2] 113/4 113/9</p> <p>considered [7] 11/16 28/24 29/2 30/22 59/24 63/22 149/8</p> <p>considering [3] 53/24 60/17 67/14</p> <p>considers [3] 136/9 137/24 138/3</p> <p>consist [1] 104/18</p> <p>consistent [3] 33/11 34/3 59/20</p> <p>constantly [1] 95/2</p> <p>constitutional [1] 48/14</p> <p>constitutionally [1] 143/12</p> <p>consultant [2] 79/14 79/20</p> <p>consultants [1] 3/20</p> <p>consultation [1] 71/11</p> <p>consultations [1] 164/12</p> <p>consumed [1] 32/16</p> <p>consuming [1] 20/6</p> <p>contact [11] 82/1 82/3 82/11 83/5 85/15 91/15 91/20 130/9 136/12 158/7 167/24</p> <p>contacts [2] 82/7 167/24</p> <p>contained [3] 27/19 39/16 43/11</p> <p>contents [1] 120/10</p> <p>context [17] 3/23 18/5 31/18 32/8 32/11 33/6 49/14 62/16 86/20 92/10 118/1 122/18 129/15 130/13 143/17 143/17 146/3</p> <p>contingencies [11] 37/17 47/10 48/7</p>	<p>60/15 64/10 64/20 67/24 68/14 70/5 71/5 72/1</p> <p>contingency [4] 25/3 47/9 49/7 51/13</p> <p>continue [12] 5/25 6/20 12/17 27/24 34/13 40/14 52/7 53/19 149/20 154/22 163/19 164/6</p> <p>continued [1] 14/9</p> <p>continues [2] 51/7 163/16</p> <p>continuing [6] 35/21 72/14 154/10 154/10 154/12 154/13</p> <p>continuous [2] 56/11 67/4</p> <p>contracts [1] 67/15</p> <p>contrary [3] 17/18 17/23 74/1</p> <p>contrast [1] 101/3</p> <p>contribute [3] 1/16 2/6 47/4</p> <p>contributed [1] 69/11</p> <p>contribution [2] 39/1 50/4</p> <p>contributions [1] 73/16</p> <p>control [18] 47/19 49/1 54/4 80/3 97/3 105/3 114/13 141/11 144/17 144/18 145/23 145/25 158/20 158/24 159/2 159/3 159/14 174/12</p> <p>controlled [1] 108/22</p> <p>controversial [1] 46/25</p> <p>conundra [1] 113/3</p> <p>convene [2] 12/19 63/19</p> <p>convened [1] 119/11</p> <p>convenes [1] 8/1</p> <p>Convention [2] 4/8 42/16</p> <p>Conversely [1] 13/5</p> <p>conveyed [1] 50/13</p> <p>cope [3] 22/17 23/3 23/22</p> <p>coped [1] 134/8</p> <p>copy [3] 86/12 119/24 156/17</p> <p>core [11] 1/4 1/21 21/21 22/17 25/1 27/5 38/16 73/17 74/7 77/19 166/6</p> <p>core participants [7] 1/4 1/21 27/5 73/17 74/7 77/19 166/6</p> <p>corner [1] 120/5</p> <p>coronaviral [4] 78/8 103/25 107/21 108/5</p> <p>coronavirus [27]</p>

<p>C</p> <p>coronavirus... [27] 41/22 48/22 86/19 89/2 89/4 89/5 90/7 90/17 90/19 91/1 92/8 94/4 94/6 94/7 95/5 95/17 104/12 105/8 105/9 106/9 106/15 108/1 108/11 121/21 121/22 168/24 169/19</p> <p>Coronavirus Act [1] 48/22</p> <p>coronaviruses [11] 94/9 94/20 94/22 94/24 97/24 98/8 102/1 102/2 104/4 104/5 133/7</p> <p>corporate [1] 55/18</p> <p>correct [6] 87/19 89/5 89/8 101/12 101/13 171/8</p> <p>corrected [1] 74/1</p> <p>correctly [1] 135/13</p> <p>correlation [1] 176/19</p> <p>COSLA [3] 4/9 42/17 43/1</p> <p>cost [4] 14/22 16/14 25/20 35/17</p> <p>cost-effective [1] 25/20</p> <p>could [59] 9/8 13/24 17/24 30/15 30/23 35/13 36/3 41/3 41/23 43/3 43/12 51/16 55/3 74/19 75/5 76/2 76/20 81/1 81/19 84/9 84/14 85/22 85/24 85/24 86/6 92/1 95/19 95/21 96/25 100/2 100/5 100/10 103/4 108/10 108/24 110/1 120/1 120/8 120/13 122/17 123/9 124/3 129/14 132/16 139/11 141/6 141/16 152/17 153/3 153/11 154/2 155/23 160/7 161/14 164/15 164/16 171/7 172/15 176/4</p> <p>couldn't [1] 100/11</p> <p>Council [1] 73/10</p> <p>Counsel [4] 1/19 29/13 74/15 180/8</p> <p>counter [2] 6/23 109/8</p> <p>countermeasures [5] 23/17 76/16 78/5 102/9 112/13</p> <p>counterparts [1] 3/24</p> <p>countries [34] 25/6 90/2 105/6 105/11</p>	<p>122/10 122/11 123/2 123/9 131/6 141/20 142/22 142/25 143/19 143/21 143/23 144/11 147/14 158/4 158/23 167/9 167/10 167/18 167/19 167/20 168/5 168/8 168/20 169/10 172/20 172/23 174/21 175/24 176/6 176/7</p> <p>country [35] 8/13 12/12 14/25 23/5 26/9 27/21 31/8 36/8 52/6 52/14 52/21 53/16 53/19 54/21 56/6 66/14 113/1 119/6 119/7 120/21 130/15 134/9 134/25 140/5 141/19 142/20 150/3 159/1 159/19 168/1 169/1 173/1 175/22 176/1 177/1</p> <p>country's [8] 7/8 23/24 25/25 27/9 31/4 55/6 127/17 142/12</p> <p>counts [1] 118/8</p> <p>couple [3] 115/21 120/8 167/3</p> <p>courage [1] 52/10</p> <p>course [39] 10/2 12/9 18/1 28/17 29/15 32/6 41/21 43/20 48/4 66/25 71/13 73/19 80/20 87/1 92/13 93/9 100/20 101/18 105/8 105/24 109/23 113/11 122/9 123/15 138/23 140/3 142/15 143/8 144/6 146/3 152/11 163/10 165/17 165/20 166/15 166/24 167/17 168/1 168/18</p> <p>CoV [13] 85/23 86/19 89/2 89/4 89/7 90/7 90/17 92/8 94/4 94/6 111/5 120/18 121/13</p> <p>covered [6] 68/20 85/10 95/12 95/15 119/16 155/22</p> <p>covers [2] 56/13 131/1</p> <p>Covid [74] 3/5 5/13 6/19 6/21 6/23 11/17 18/10 18/18 24/16 26/6 26/25 31/5 35/16 37/10 42/1 43/4 43/21 46/17 48/24 50/6 51/7 52/4 52/8 52/19 53/3 54/3 54/9 54/12 55/1 64/23 65/2 65/3 66/11 66/16 67/16 68/19 69/6 79/15 85/23 91/2 91/24 92/9 94/8 104/9 105/6 105/9 118/9</p>	<p>120/7 120/11 120/20 120/24 125/5 128/1 128/18 129/15 134/6 140/12 140/20 143/18 151/1 152/9 161/14 162/10 162/18 164/5 165/9 166/13 173/21 174/11 174/16 174/17 175/1 175/10 176/7</p> <p>Covid-19 [49] 3/5 5/13 6/19 6/23 11/17 18/10 24/16 26/25 31/5 35/16 37/10 42/1 43/4 43/21 46/17 48/24 50/6 51/7 52/4 52/8 53/3 54/3 54/12 55/1 64/23 65/2 65/3 66/11 66/16 67/16 68/19 69/6 79/15 85/23 91/2 91/24 92/9 94/8 105/6 105/9 118/9 120/11 120/20 120/24 125/5 128/18 129/15 166/13 176/7</p> <p>Covid-19's [1] 52/19</p> <p>COVID-19: Make [1] 120/7</p> <p>create [5] 4/1 17/12 130/17 130/19 149/24</p> <p>created [5] 3/14 4/24 47/25 54/25 58/7</p> <p>creation [1] 71/21</p> <p>CRIS [1] 165/9</p> <p>crises [6] 26/2 57/11 69/5 69/7 70/4 73/15</p> <p>crisis [13] 53/16 54/19 54/25 56/10 60/5 67/7 69/3 69/24 69/25 70/1 70/12 115/25 116/6</p> <p>critical [5] 10/25 13/21 22/21 63/12 129/6</p> <p>critically [1] 29/8</p> <p>criticism [2] 105/15 106/8</p> <p>critiques [1] 126/19</p> <p>cross [15] 5/13 46/25 57/22 57/23 62/19 66/5 66/5 68/7 141/22 142/6 142/8 142/9 145/22 153/22 161/16</p> <p>cross-border [3] 141/22 142/8 142/9</p> <p>cross-cutting [4] 5/13 46/25 68/7 153/22</p> <p>cross-government [4] 57/22 57/23 62/19 66/5</p> <p>cross-learnings [1] 145/22</p> <p>cross-talking [1] 161/16</p>	<p>Crosscutting [1] 154/8</p> <p>Crown [1] 58/6</p> <p>crucial [2] 50/12 50/23</p> <p>cry [1] 115/3</p> <p>crying [2] 115/16 121/17</p> <p>culminated [1] 42/17</p> <p>current [2] 7/3 147/17</p> <p>currently [7] 55/19 56/23 78/12 96/9 157/1 162/14 164/22</p> <p>curtailed [1] 7/1</p> <p>cut [1] 1/6</p> <p>cutting [4] 5/13 46/25 68/7 153/22</p> <p>CV [1] 76/21</p> <p>Cygnus [2] 21/5 41/10</p> <hr/> <p>D</p> <p>daily [1] 124/2</p> <p>damage [1] 126/13</p> <p>damaged [1] 51/11</p> <p>Dame [1] 21/1</p> <p>Dame Sally Davies [1] 21/1</p> <p>danger [2] 134/3 161/15</p> <p>dangerous [9] 99/22 133/18 136/9 137/3 137/9 138/5 170/11 172/17 173/18</p> <p>data [11] 13/21 13/23 14/1 14/4 14/12 21/24 42/22 68/7 70/12 70/16 132/23</p> <p>date [4] 2/14 12/6 49/13 175/24</p> <p>dating [1] 55/17</p> <p>David [1] 56/2</p> <p>David Cameron [1] 56/2</p> <p>Davies [1] 21/1</p> <p>day [12] 2/1 4/10 4/10 22/18 22/18 24/6 35/24 59/9 83/16 139/20 139/20 149/19</p> <p>days [6] 11/21 14/8 51/10 129/17 146/24 174/7</p> <p>deal [25] 7/11 10/13 21/18 32/14 32/21 36/7 37/15 37/20 42/9 62/4 96/23 104/24 110/19 117/23 129/3 132/1 133/22 135/7 135/10 136/12 136/13 136/18 136/22 137/1 159/11</p> <p>dealing [12] 5/10 20/16 38/13 54/6 80/2</p>	<p>107/24 137/7 157/14 157/15 157/15 157/22 157/24</p> <p>deals [2] 69/23 135/1</p> <p>dealt [1] 156/2</p> <p>death [3] 16/2 98/12 100/20</p> <p>deaths [14] 87/8 89/17 90/3 90/6 90/21 90/21 92/7 92/11 92/14 92/18 99/9 99/15 100/8 164/11</p> <p>debate [3] 9/22 107/15 121/15</p> <p>decade [1] 103/13</p> <p>decades [2] 53/16 53/17</p> <p>December [8] 4/14 11/18 67/14 71/8 105/9 118/15 118/23 129/17</p> <p>December 2019 [5] 4/14 105/9 118/15 118/23 129/17</p> <p>December 2020 [1] 67/14</p> <p>decide [2] 64/2 75/21</p> <p>decided [1] 147/4</p> <p>decides [1] 59/10</p> <p>deciding [1] 113/5</p> <p>decision [13] 12/20 18/9 30/12 34/7 46/24 50/22 57/8 57/19 58/17 70/12 72/22 143/20 164/1</p> <p>decision-makers [3] 12/20 30/12 164/1</p> <p>decision-making [9] 18/9 34/7 46/24 50/22 57/8 57/19 58/17 70/12 72/22</p> <p>decisions [21] 9/14 9/17 12/23 13/25 17/15 17/22 17/24 18/3 20/13 25/22 26/5 42/4 50/22 59/2 59/3 59/13 62/18 64/9 164/3 168/13 177/6</p> <p>decisively [1] 158/18</p> <p>declaration [1] 126/21</p> <p>declare [2] 125/22 126/2</p> <p>declared [5] 125/10 125/11 125/25 126/7 126/14</p> <p>dedicated [4] 64/24 130/10 130/11 133/3</p> <p>dedication [2] 16/15 55/13</p> <p>deep [1] 99/21</p> <p>deepen [1] 72/14</p> <p>deepest [2] 15/11 52/3</p>
--	---	--	---	---

D	depends [2] 84/21 104/17	61/25 69/19 71/8 78/2 81/6 103/8 109/12	117/7 121/15 131/8 146/25 157/4	120/22 121/1 121/16 126/7 134/18 135/7
Defence [1] 69/18	deployed [3] 79/20 150/13 150/15	133/14 133/21 162/5 162/15 162/23 171/11	difficulties [2] 13/7 133/6	135/8 135/11 135/16 135/17 135/24 136/4
deficiencies [1] 33/4	depth [1] 50/5	171/14 172/2 172/16	dignity [1] 52/6	136/19 141/10 141/22
definitive [1] 59/13	deputy [4] 37/13 47/13 56/24 73/10	develops [1] 124/23	dilemma [1] 152/2	144/24 145/25 158/25
degree [9] 30/14 91/23 97/17 109/11 121/20 129/5 142/25 147/9 150/12	describe [13] 81/16 101/25 102/5 110/21 115/6 118/1 118/3 136/23 138/21 139/12 146/10 153/18 172/7	device [1] 140/17	diminish [1] 115/4	164/14 164/25 167/19 174/8
deliberate [4] 97/4 110/22 111/15 112/11	described [9] 10/12 65/16 65/18 84/13 90/12 96/13 138/9 153/22 164/8	devolution [2] 47/1 65/8	dint [1] 1/18	disease X [16] 102/4 102/7 102/11 102/12 102/18 102/22 103/6 103/12 103/17 104/1 104/11 104/15 105/10 107/16 107/18 112/7
deliver [8] 3/19 19/6 25/18 57/4 58/4 62/20 68/9 149/20	description [3] 20/16 137/22 138/17	devolved [7] 3/22 27/17 36/12 41/8 65/9 65/12 71/12	direct [5] 37/9 45/21 85/6 168/12 168/22	disease-like [1] 78/7
delivering [5] 19/9 58/1 71/18 154/12 164/10	design [1] 51/2	DHSC [1] 146/3	direction [5] 47/19 113/22 113/23 145/14 145/16	disease-specific [1] 23/20
delivery [9] 10/5 37/15 38/15 44/12 48/1 51/3 57/12 58/22 148/18	designed [6] 3/16 11/11 37/9 41/6 51/13 146/12	diagnostic [15] 13/7 23/25 130/20 149/17 158/6 159/4 162/5 162/9 162/11 162/15 162/17 162/23 163/1 163/3 172/3	directions [1] 110/6	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
demand [1] 22/20	desire [2] 2/25 6/4	diagnostics [5] 11/25 13/8 21/25 134/16 148/17	directly [4] 34/4 50/24 52/16 75/20	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
demands [4] 19/20 25/23 26/6 42/5	Despite [1] 5/9	did [33] 12/13 13/1 14/23 18/2 20/20 21/12 29/4 29/6 54/20 63/2 78/13 78/16 80/10 82/3 82/4 102/14 104/21 105/13 127/23 128/13 128/15 128/25 138/8 141/12 144/15 146/16 152/19 164/19 167/10 173/8 174/10 176/6 178/8	directorate [3] 34/25 70/8 79/6	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
democratic [2] 9/16 98/5	detail [9] 28/19 29/2 65/16 91/10 97/7 108/15 115/6 132/15 151/15	die [3] 87/13 100/10 122/3	disabilities [1] 19/23	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
demonstrated [1] 26/21	detailed [4] 2/14 18/25 30/18 30/22	didn't [6] 100/17 107/7 116/16 134/9 168/21 169/17	Disability [1] 58/9	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
demonstrates [2] 50/5 176/11	detect [2] 109/8 154/7	die [3] 87/13 100/10 122/3	disbanded [3] 138/10 145/2 160/4	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
demonstrating [1] 50/20	detecting [2] 140/12 153/21	differ [1] 91/3	disbandment [1] 145/11	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
Denis [1] 48/2	detection [2] 158/7 159/6	difference [7] 17/6 90/25 92/22 129/17 130/5 141/25 161/10	discharge [1] 47/19	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
density [1] 82/19	determination [1] 17/5	different [46] 3/23 4/21 8/20 8/21 17/25 18/7 24/18 37/1 37/22 42/6 46/22 47/2 53/24 84/6 88/9 91/5 91/24 92/13 92/19 106/5 115/6 115/18 118/2 118/6 122/18 131/15 134/13 134/13 135/22 137/23 139/4 141/4 142/25 145/14 145/16 150/15 156/18 157/3 160/8 160/8 160/9 160/17 161/8 161/15 171/15 174/3	discharged [1] 58/14	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
department [37] 8/23 8/24 15/5 15/8 15/17 16/7 16/23 17/7 17/14 17/19 17/25 18/10 18/23 19/1 20/4 21/10 25/4 25/12 26/3 26/7 26/8 37/6 47/17 49/22 56/22 57/21 59/23 60/1 62/17 63/21 64/5 65/25 66/2 79/4 139/24 145/8 179/11	determine [1] 14/4	differed [1] 91/3	disclosure [1] 28/8	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
department's [1] 25/15	determined [3] 38/9 49/18 99/16	differences [4] 27/16 99/10 138/17 147/13	discussed [3] 48/22 107/5 146/23	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
departmental [1] 63/18	determining [1] 114/16	die [3] 87/13 100/10 122/3	discuss [2] 102/3 119/22	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
departments [26] 7/24 8/21 9/2 10/11 25/24 46/20 46/23 54/18 57/13 57/25 58/4 58/22 59/3 59/5 60/4 60/8 61/20 62/15 62/18 62/22 63/1 63/11 63/24 64/4 64/6 65/20	detriment [1] 16/25	die [3] 87/13 100/10 122/3	discussing [2] 76/11 122/18	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
departure [3] 32/12 32/21 42/10	devastating [2] 43/21 120/11	die [3] 87/13 100/10 122/3	discussion [3] 39/6 60/5 152/3	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
depend [2] 27/18 147/20	develop [15] 23/16 38/12 78/5 104/24 109/5 134/17 134/22 149/16 151/13 154/13 154/13 172/4 172/21 172/23 174/17	die [3] 87/13 100/10 122/3	discussions [2] 137/15 147/2	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22
depending [2] 37/23 59/21	developed [8] 21/4 31/22 66/16 153/1 162/11 162/18 168/8 171/7	die [3] 87/13 100/10 122/3	disease [98] 5/21 23/16 23/20 24/14 47/11 78/7 80/8 81/17 81/25 82/10 82/12 83/4 84/8 87/17 87/19 90/23 91/5 91/7 92/10 92/17 95/25 99/10 99/11 99/14 99/16 99/17 99/19 99/21 101/14 101/14 101/18 102/4 102/5 102/7 102/7 102/10 102/11 102/12 102/14 102/18 102/19 102/21 102/22 103/6 103/7 103/12 103/17 103/19 104/1 104/11 104/15 104/17 104/18 104/25 105/4 105/10 105/10 105/14 105/18 106/2 106/5 106/22 107/16 107/18 107/20 108/21 108/23 109/12 111/1 111/6 111/13 112/7 113/2 114/2 114/4 117/4	diseases [49] 4/20 18/21 24/16 25/9 26/11 43/7 65/22 66/4 76/10 76/15 76/16 77/25 78/7 78/8 78/10 79/6 79/8 80/1 80/4 81/24 82/4 93/22 95/25 103/25 103/25 117/1 126/14 133/13 133/16 133/19 133/25 134/2 134/3 134/12 134/15 135/16 136/8 137/8 138/3 139/10 139/15 141/22 144/17 144/18 146/6 149/17 172/1 173/21 173/22

D	114/13 121/9 131/4 133/15 147/8 167/24	117/7 124/3 135/16 137/22 142/19	electronic [1] 156/18 element [2] 31/13 170/18	71/23
do... [22] 129/25 132/17 133/1 133/8 135/13 137/14 137/16 141/17 143/15 143/16 146/18 146/19 148/4 154/10 155/11 159/2 160/12 162/13 165/2 168/21 170/22 172/23	Downing [1] 79/3 Dr [22] 48/2 48/4 74/10 74/14 74/16 75/8 75/19 79/2 86/8 95/22 98/24 99/6 119/23 132/20 133/1 138/16 139/8 156/25 162/7 166/3 178/7 180/6	eager [1] 36/1 earlier [9] 17/17 100/2 115/12 146/15 148/9 153/6 160/3 160/5 174/20 earliest [1] 51/10 early [16] 11/1 115/11 115/19 117/10 117/22 123/1 129/24 130/5 143/14 143/18 146/24 158/4 158/7 158/18 162/20 169/19	elements [3] 88/10 155/22 160/18 Eleventh [1] 73/1 else [2] 75/11 133/4 else's [1] 115/3 elsewhere [1] 33/14 emanated [1] 88/14 embed [1] 11/11 embedding [1] 14/10 emerge [3] 35/23 173/22 173/22 emerged [6] 12/5 35/17 50/20 65/2 105/22 173/18 emergence [1] 171/5 emergencies [13] 7/25 8/2 37/16 37/20 38/13 38/24 39/19 59/17 60/25 62/6 64/9 70/7 70/16 emergency [35] 8/8 8/9 8/20 10/16 10/18 13/22 14/5 28/4 31/5 31/10 32/23 37/8 37/19 37/21 39/4 39/13 47/10 59/21 60/6 60/12 60/19 65/10 66/20 71/1 71/19 79/9 125/8 125/16 125/23 126/8 126/21 127/3 127/8 151/9 171/5 emerges [2] 21/18 30/8 emerging [14] 64/17 65/6 65/22 66/16 79/7 135/4 135/24 136/24 137/5 137/9 137/25 138/8 139/10 161/22	endeavour [2] 4/5 6/2 endemic [3] 94/19 95/1 95/2 endure [1] 15/21 enduring [2] 6/17 53/21 engagement [3] 151/21 162/3 163/21 engaging [1] 50/24 Engineering [2] 68/1 68/3 Engineering's [2] 68/13 68/15 England [10] 72/10 72/16 144/6 144/15 144/21 144/22 145/2 145/11 145/13 145/18 England's [1] 145/4 enhance [4] 56/10 56/19 63/3 66/4 enhances [1] 151/20 enhancing [2] 33/25 60/24 enlargement [1] 143/22 enough [3] 125/15 129/24 155/15 ensure [13] 25/5 37/19 38/23 50/25 57/4 63/21 73/14 151/11 158/24 159/9 159/13 163/6 172/15 ensuring [5] 66/12 116/11 117/22 156/22 158/9 entering [1] 91/13 entire [3] 14/14 127/5 127/7 entirely [6] 25/9 147/20 157/8 160/20 165/25 177/12 entitled [1] 39/16 entity [1] 84/16 entry [3] 87/21 118/12 167/19 environment [8] 31/16 82/15 84/2 96/19 96/20 116/20 117/3 117/19 environmental [4] 4/21 43/13 47/7 132/1 epidemic [27] 76/14 79/15 80/2 81/4 92/5 94/7 104/22 107/6 108/2 113/21 118/4 121/7 138/14 138/18 138/20 139/9 148/13
Doctor [1] 93/12 doctors [1] 118/11 doctrinal [2] 154/6 154/7 doctrinally [1] 112/8 document [5] 11/21 40/12 152/22 155/17 161/19 documentation [1] 2/17 documents [5] 2/15 11/13 20/5 39/16 135/19 does [42] 2/19 8/7 21/10 62/25 83/7 83/12 84/7 85/20 87/14 87/16 88/6 88/7 88/12 88/14 95/1 95/4 95/11 97/10 97/13 102/11 109/1 111/15 111/16 111/23 112/1 115/9 118/20 121/19 125/18 127/4 135/3 136/4 140/7 141/17 145/19 149/23 152/25 155/1 155/12 160/17 160/22 161/20 doesn't [8] 99/20 101/7 115/25 121/18 122/13 138/6 153/4 162/14 doing [2] 69/10 144/2 domestic [1] 13/6 domiciliary [1] 19/18 dominant [1] 32/11 don't [25] 63/5 74/23 78/11 86/11 86/24 102/17 102/19 104/11 106/23 111/1 113/20 113/22 116/5 119/17 119/23 121/9 138/16 140/23 149/14 155/3 155/12 157/8 157/21 168/12 172/21 done [14] 2/9 7/14 30/23 44/19 51/17 55/3 73/14 121/1 128/7 128/11 134/17 144/2 177/23 177/24 doubt [4] 19/2 61/13 75/14 131/10 down [15] 59/12 65/5 85/3 87/21 91/8 92/8 96/8 110/10 112/17	Dr Charlotte Hammer [1] 74/10 Dr Denis [1] 48/2 Dr Hammer [10] 74/16 75/8 75/19 79/2 86/8 98/24 132/20 133/1 166/3 178/7 Dr McMahon [1] 48/4 draft [3] 21/8 146/23 147/2 drafting [1] 147/24 drama [1] 116/5 draw [3] 34/4 146/11 164/1 drawn [4] 8/13 8/15 158/13 159/20 draws [2] 3/18 8/24 drew [2] 31/2 69/5 drive [1] 41/6 drivers [1] 83/11 driving [2] 57/12 85/1 dromedarian [2] 91/14 91/16 dromedarian camel [1] 91/16 droplets [1] 91/7 drugs [3] 96/21 96/23 134/16 Drysdale [1] 34/22 Duchy [1] 56/25 due [6] 28/17 29/15 32/5 48/4 73/19 146/3 duration [2] 10/19 10/21 during [32] 2/20 4/17 6/25 7/25 8/3 8/20 9/19 13/19 17/9 18/1 20/1 20/12 20/20 21/9 21/23 22/9 35/10 37/10 43/4 43/15 47/23 48/5 48/6 48/14 50/20 52/4 56/4 65/14 104/6 151/1 158/4 163/10 duty [2] 75/13 75/15 dying [1] 15/25	east [5] 38/7 41/14 90/18 91/1 122/11 Eastern [1] 143/22 Ebola [7] 20/23 92/4 97/25 98/1 121/10 127/6 157/16 ECDC [3] 141/16 141/18 142/2 ecological [2] 83/21 85/1 economic [5] 9/12 25/24 31/1 47/6 72/20 economics [1] 12/16 economy [1] 52/17 edited [1] 140/10 education [2] 17/2 29/22 effect [8] 30/24 41/16 43/21 50/2 51/8 52/19 109/14 149/19 effective [12] 18/12 24/19 25/20 31/21 32/3 33/3 38/12 56/12 65/9 118/17 162/3 171/6 effectively [7] 13/14 22/14 23/23 33/13 38/24 155/13 168/11 effects [8] 6/21 15/13 15/21 18/18 49/10 52/8 97/11 108/9 efficiency [1] 57/11 efficient [5] 25/19 27/6 33/3 58/1 163/9 efficiently [1] 165/22 effort [2] 1/19 124/4 efforts [4] 14/18 16/17 52/9 124/15 eight [2] 55/18 72/14 either [8] 37/12 59/6 91/21 110/22 126/21 131/10 166/10 167/18 elect [1] 77/9 elected [1] 9/16 elective [1] 54/11 electorate [1] 9/18	embed [1] 11/11 embedding [1] 14/10 emerge [3] 35/23 173/22 173/22 emerged [6] 12/5 35/17 50/20 65/2 105/22 173/18 emergence [1] 171/5 emergencies [13] 7/25 8/2 37/16 37/20 38/13 38/24 39/19 59/17 60/25 62/6 64/9 70/7 70/16 emergency [35] 8/8 8/9 8/20 10/16 10/18 13/22 14/5 28/4 31/5 31/10 32/23 37/8 37/19 37/21 39/4 39/13 47/10 59/21 60/6 60/12 60/19 65/10 66/20 71/1 71/19 79/9 125/8 125/16 125/23 126/8 126/21 127/3 127/8 151/9 171/5 emerges [2] 21/18 30/8 emerging [14] 64/17 65/6 65/22 66/16 79/7 135/4 135/24 136/24 137/5 137/9 137/25 138/8 139/10 161/22 emeritus [1] 76/23 eminent [1] 159/24 eminently [1] 171/2 emulate [1] 12/14 emulated [1] 145/14 enable [6] 19/23 21/13 22/7 39/12 56/6 62/8 enablers [1] 153/22 enabling [1] 21/3 encapsulated [1] 21/15 encompassing [1] 61/1 encounter [1] 102/13 encountering [1] 82/9 encouraged [1] 172/4 encourages [2] 82/20 104/20 encouraging [1]	
E	each [19] 16/7 16/20 28/14 38/7 39/11 46/23 50/16 52/22 58/16 72/4 78/19 85/15 86/14 100/20	election [1] 9/18	encouraging [1]	

E	ethical [1] 9/13 ethics [1] 77/4 ethnic [1] 150/21 EU [12] 42/10 49/3 49/4 49/5 141/7 141/18 141/18 141/19 142/1 142/20 143/22 143/25 European [18] 32/13 64/25 77/12 141/5 141/9 141/10 141/17 141/23 141/23 142/16 142/16 143/3 143/6 143/14 143/20 143/21 143/23 144/3 European Commission [2] 143/20 143/21 European Union [7] 32/13 64/25 141/5 141/9 141/23 141/23 144/3 European Union's [1] 143/14 evaluate [1] 147/8 evaluation [6] 127/21 128/3 128/7 128/18 175/6 175/23 Evaluations [1] 128/1 even [16] 8/20 10/17 13/10 18/12 27/25 33/14 84/10 95/16 96/25 97/22 98/6 107/9 117/10 130/11 147/3 147/4 event [7] 14/4 37/18 43/13 53/8 55/2 150/7 150/9 events [4] 39/5 55/7 139/17 139/19 eventuality [1] 136/3 ever [3] 19/24 20/2 97/17 Everitt [1] 79/2 Everitt Butterfield [1] 79/2 every [23] 12/12 15/15 16/7 16/20 20/7 20/8 28/14 53/7 61/14 66/19 114/4 114/4 115/2 115/3 115/8 119/5 119/6 120/21 124/22 126/11 134/10 139/20 142/20 everybody [3] 74/22 115/3 159/4 everyday [1] 14/11 everyone [8] 1/9 16/25 20/14 26/19 35/11 51/3 52/21 177/21 everything [3] 6/1 6/7 18/2	everywhere [1] 174/9 evidence [32] 1/5 9/11 9/12 12/1 12/2 20/21 28/16 29/5 30/8 31/12 34/3 35/5 35/6 44/17 49/4 49/13 49/15 50/1 56/4 68/9 73/16 74/11 74/19 75/14 97/13 105/22 141/15 146/8 151/6 166/16 166/21 178/12 evidence-based [1] 68/9 evident [6] 81/9 97/6 129/6 131/21 147/7 150/24 evidently [1] 140/19 evolve [1] 57/16 evolved [1] 60/20 exact [2] 41/22 146/19 exactly [6] 51/5 106/14 138/1 138/9 146/20 165/12 examination [4] 11/1 29/3 29/14 69/6 examine [6] 7/7 29/5 29/8 30/3 30/14 166/8 examined [1] 53/6 examining [1] 54/24 example [42] 10/5 10/8 14/12 17/16 19/14 20/22 21/23 23/6 23/13 23/19 24/15 29/19 40/8 54/8 57/17 64/14 76/10 83/24 84/5 88/14 91/6 93/17 96/18 97/17 97/24 97/25 98/11 98/16 100/1 100/12 108/22 111/6 112/18 117/3 119/4 133/24 136/7 141/20 143/1 147/12 157/13 173/6 examples [2] 143/21 144/14 excellence [1] 5/24 exceptional [2] 19/6 24/4 excess [1] 13/10 excessive [1] 107/20 exchange [1] 40/17 exclusion [1] 107/10 exclusively [1] 106/4 executive [15] 45/18 46/18 46/21 46/24 47/4 47/5 47/14 47/18 47/23 48/13 48/18 48/22 49/18 153/12 179/22 Executive Office [1] 47/14 exercise [15] 21/5 33/16 41/10 41/10	41/12 41/12 41/13 67/15 157/2 157/3 157/13 157/23 157/25 175/25 177/24 Exercise Cygnus [1] 41/10 Exercise Iris [1] 41/13 exercises [6] 69/22 156/23 157/6 157/12 157/18 157/21 exercising [1] 73/4 exhaustive [1] 12/7 exist [3] 33/5 40/14 84/17 existed [2] 40/14 81/7 existence [3] 4/13 12/11 121/12 existing [5] 23/8 66/22 67/18 146/14 147/11 exists [2] 8/7 36/15 exit [7] 32/14 49/3 49/4 49/5 64/24 141/17 143/25 expanded [1] 22/20 expanding [1] 162/22 expect [1] 95/22 expected [1] 147/1 experience [15] 2/7 8/16 23/3 33/9 40/5 50/10 50/14 77/5 104/5 107/24 158/23 159/20 168/17 168/18 168/23 experienced [3] 42/10 94/22 106/15 experiences [4] 50/11 158/3 167/8 174/16 expert [10] 33/23 34/6 61/21 68/7 136/22 137/4 137/12 138/7 160/1 160/20 expertise [14] 2/7 3/18 8/15 8/22 13/2 13/2 76/1 76/22 132/1 137/14 137/16 158/16 163/25 170/17 experts [13] 8/9 8/13 8/25 12/21 40/3 44/2 61/23 72/7 76/13 120/22 131/20 151/25 159/23 explain [3] 67/4 129/14 155/23 explained [1] 106/17 explored [2] 32/5 99/7 exposed [1] 70/10 express [1] 131/22 expressing [3] 15/10 16/2 52/3	extensive [1] 165/15 extent [14] 30/18 32/15 33/21 50/13 80/18 93/21 104/17 142/11 155/8 156/25 158/15 161/19 164/24 165/18 external [9] 68/1 72/8 127/20 128/1 128/3 128/6 157/5 175/5 175/23 extra [2] 25/13 150/5 extraordinary [1] 14/18 extremely [4] 17/23 52/22 99/22 163/9 eye [1] 113/12
			F	
			face [4] 26/10 55/10 70/4 96/9 faced [8] 5/6 17/19 20/2 36/8 53/16 86/18 113/1 113/3 facilitate [1] 61/17 facilities [1] 70/17 facing [4] 40/24 61/2 61/11 81/23 fact [23] 4/4 39/20 62/12 67/15 79/14 80/10 83/10 86/10 95/4 107/9 108/4 108/18 109/19 111/18 116/1 134/1 136/15 138/9 144/11 156/7 160/6 163/6 163/8 factor [1] 32/11 factored [1] 108/8 factors [3] 12/9 12/22 62/18 facts [1] 75/10 Faculty [1] 77/8 fail [1] 173/19 fails [1] 114/14 failure [3] 105/11 120/16 176/10 failures [1] 51/14 fair [9] 5/6 28/2 30/22 105/15 106/8 131/12 155/12 172/7 176/16 fairly [4] 128/7 128/25 131/16 172/22 fall [3] 10/10 102/24 112/7 false [2] 114/22 114/24 families [7] 3/5 15/11 50/1 52/6 53/22 166/14 167/2 family [5] 14/22 15/15 15/19 16/4 16/12 far [12] 52/15 56/18 65/10 81/7 91/16 92/4	

F	film [3] 26/21 50/5 50/7	flow [2] 35/5 100/17	formidable [1] 14/20	fundamental [2] 33/2 176/11
far... [6] 122/11 146/21 147/17 152/14 165/18 177/10	final [3] 68/15 69/8 154/21	flu [23] 21/6 24/16 40/19 41/6 87/2 87/18 87/24 88/5 88/25 89/24 90/1 90/10 101/3 101/6 106/25 107/1 107/6 132/22 173/15 173/16 173/17 173/19 174/1	formulating [1] 113/12	funded [2] 116/13 140/18
Far East [1] 122/11	finally [10] 14/17 25/12 29/25 32/25 34/10 92/8 164/7 169/8 173/14 175/5	fluid [1] 57/6	formulation [1] 33/3	funding [8] 3/21 21/3 31/17 54/9 134/22 140/22 172/4 172/6
fare [1] 127/24	financial [3] 14/23 17/1 148/19	flux [3] 146/6 146/17 146/20	forth [3] 9/1 130/21 131/21	funeral [1] 16/4
fared [1] 128/17	find [2] 115/23 157/23	focal [1] 70/15	forthcoming [1] 56/5	fungus [1] 85/24
fast [1] 170/25	finding [2] 67/15 112/16	focus [17] 52/18 57/15 62/7 65/6 97/8 103/7 103/16 103/18 105/13 106/3 106/4 106/4 107/9 107/21 124/14 134/19 162/9	fortunate [1] 14/25	further [25] 10/17 12/3 15/1 18/14 28/15 29/2 35/7 40/14 42/8 50/5 67/3 84/1 85/3 87/21 95/16 96/8 99/8 108/2 108/25 111/21 121/8 154/11 157/10 157/18 178/5
fast-track [1] 170/25	finds [1] 77/17	focused [10] 36/18 68/4 73/4 105/6 117/15 137/13 148/12 165/11 165/24 176/25	forum [2] 38/18 70/22	future [38] 2/10 7/8 21/13 22/14 23/12 24/12 24/23 25/9 26/2 26/4 26/10 28/4 44/3 44/12 51/1 51/12 51/14 53/10 55/7 55/9 56/7 56/19 68/22 73/15 80/9 102/5 102/21 103/3 104/10 109/11 109/23 112/17 113/13 152/6 166/18 174/1 174/18 177/22
fatalistic [2] 173/19 174/5	fine [3] 123/24 135/9 164/24	focuses [2] 70/6 137/23	forums [4] 60/18 63/7 63/14 72/9	
fatality [24] 87/9 87/10 87/12 87/14 88/2 89/17 90/6 90/22 92/5 92/19 92/20 92/23 92/25 93/2 93/4 93/14 93/19 93/24 93/25 100/22 101/4 101/7 101/8 101/9	finely [1] 17/23	focusing [7] 5/13 44/16 103/2 104/14 107/18 112/12 139/23	forward [11] 2/2 5/25 14/21 41/7 56/19 73/18 120/8 132/16 167/18 171/24 174/13	
fatigue [1] 170/25	Fiona [1] 34/22	fold [1] 104/19	found [3] 33/4 33/12 49/23	
feature [5] 31/19 31/20 32/3 33/17 109/4	Fiona Drysdale [1] 34/22	follow [6] 108/11 115/2 135/5 171/22 172/8 178/8	foundation [1] 30/9	
features [3] 41/23 106/11 108/19	Fire [1] 37/24	follow-through [3] 135/5 171/22 172/8	founded [1] 60/15	
February [4] 48/23 48/24 69/4 165/17	first [53] 1/23 4/16 7/11 7/17 8/18 11/8 11/16 12/11 17/9 21/17 23/10 23/22 24/8 28/11 29/6 33/10 36/23 37/13 37/13 42/14 42/19 43/7 47/13 47/13 48/20 54/23 56/14 56/20 67/12 70/22 71/17 73/23 81/13 84/13 89/4 105/16 111/3 111/5 111/24 111/24 113/14 116/1 117/5 117/11 120/14 120/19 122/21 133/2 140/14 140/15 146/23 156/2 176/9	followed [3] 11/5 144/25 173/6	four [12] 5/13 27/12 28/3 32/16 34/2 36/13 40/8 89/16 94/19 111/4 153/20 153/23	
February 2022 [1] 69/4	First Minister [5] 28/11 37/13 37/13 47/13 47/13	following [11] 1/10 20/23 21/16 33/9 67/11 70/5 71/10 97/11 128/6 141/7 156/21	four nations [3] 27/12 28/3 34/2	
fed [3] 153/4 153/6 173/10	firstly [5] 40/2 79/25 108/20 132/18 146/16	foot [1] 111/6	Fourth [4] 10/12 13/20 23/25 69/2	
feed [2] 117/9 119/1	fiscal [1] 25/24	forbearance [1] 16/5	Fourthly [1] 72/3	
feedback [1] 11/4	fit [1] 36/20	force [1] 146/13	fragility [1] 22/10	
feel [7] 17/16 149/8 149/14 149/23 155/22 165/10 165/13	five [6] 21/16 24/13 28/9 46/21 68/20 154/6	forces [1] 16/11	frame [1] 141/17	
feeling [2] 17/14 177/19	fixed [2] 21/19 59/21	forecasting [4] 76/14 80/1 138/14 138/18	framework [22] 19/1 19/5 19/9 22/7 27/14 54/15 60/6 60/13 60/14 60/20 61/1 61/4 71/8 71/17 73/6 73/9 104/24 135/6 135/10 136/2 136/18 153/19	
fell [1] 4/21	flagged [1] 62/24	Foreign [1] 69/19	frameworks [1] 66/20	
fellow [2] 77/7 79/3	flaws [1] 33/4	forensic [2] 33/5 112/23	French [1] 144/21	
felt [3] 35/12 53/17 151/2	flea [2] 84/9 98/15	forgive [2] 73/22 98/18	frequent [1] 37/12	
few [15] 8/17 23/10 23/22 81/13 100/7 100/10 110/3 130/22 131/1 137/6 140/3 155/4 167/7 175/20 175/20	fleas [1] 84/19	forgotten [2] 10/14 16/6	Friday [1] 151/6	
field [13] 44/5 76/13 77/5 86/4 129/21 130/2 130/25 131/3 131/8 131/12 134/5 152/15 170/13	fledged [1] 144/1	form [5] 11/10 38/1 107/22 130/7 144/5	friends [1] 15/19	
fields [1] 152/13	flexibility [3] 30/11 30/15 60/2	formal [5] 8/19 67/7 67/10 128/3 166/17	front [2] 5/10 52/12	
Fifth [1] 24/12	flexible [9] 62/9 104/20 105/21 105/25 134/7 136/6 136/11 158/8 159/9	formally [2] 141/8 166/19	front line [1] 5/10	
Fifthly [1] 72/6	flooding [1] 37/3	formation [1] 64/25	front-line [1] 52/12	
fight [1] 22/14		formed [1] 73/9	fruit [1] 32/24	
fighting [1] 18/12		former [5] 7/4 28/11 53/4 56/1 56/2	fulfil [1] 160/23	
figure [2] 92/12 92/12			full [5] 28/6 54/23 58/20 69/9 95/9	
figures [1] 92/18			full-time [1] 58/20	
			fuller [1] 2/18	
			fully [6] 15/17 27/24 115/8 144/1 146/20 152/19	
			function [7] 19/6 36/24 37/14 38/14 44/15 58/5 58/6	
			functions [9] 4/25 36/23 47/20 48/14 57/22 57/23 144/10 145/5 145/10	

G

G7 [1] 11/23

gain [4] 14/23 151/20
151/22 160/5

gained [2] 109/20
112/9

gaining [1] 2/18

gaps [1] 38/21

gastrointestinal [1]
135/8

gather [2] 73/22
146/8

gathered [2] 108/2
132/23

gave [4] 16/23 40/13
122/8 151/21

general [25] 19/16
22/20 30/21 36/17
59/1 59/22 69/13
75/20 76/3 76/6
109/13 114/2 116/12
120/15 121/23 131/18
135/21 136/1 136/18
149/20 158/13 162/24
163/24 164/4 177/4

generality [1] 148/23

generally [11] 8/3
22/15 60/3 83/3 90/12
91/11 95/25 121/14
131/23 132/3 150/10

generated [1] 129/7

generates [1] 70/11

generic [5] 104/24
134/8 136/12 174/2

G	114/20 116/8 117/21 122/3 126/3 132/17 139/16 159/21 164/24 165/5 174/13 176/3 176/3	69/23 70/11 70/24 71/7 71/12 71/13 72/3 73/7 73/13 80/11 80/16 95/23 96/3 113/1 113/10 114/19 137/19 152/2 152/10 152/15 153/9 154/4 156/7 165/17 171/17 179/7 179/15 179/18	grown [1] 58/19 GSCA [11] 7/20 7/21 8/3 8/4 8/18 9/8 9/10 10/4 10/15 10/25 11/7 guarantee [1] 49/21 guard [1] 104/2 guards [1] 152/4 guidance [11] 15/18 17/12 19/25 39/16 39/17 40/13 43/9 60/21 71/24 72/12 72/23 guided [2] 40/2 123/4 guiding [1] 71/22	103/12 111/4 115/23 144/15 162/10 168/11 happening [8] 82/10 103/11 112/2 117/15 117/16 139/19 151/9 172/19 happens [2] 112/4 139/19 hard [5] 2/12 24/4 86/12 106/14 156/17 harder [1] 174/18 hardship [1] 52/24 Harland [1] 51/25 harm [1] 96/24 Harvard [1] 128/12 has [128] 2/6 2/12 2/13 2/14 2/17 2/17 7/14 18/10 21/11 22/8 27/3 27/23 28/8 31/8 36/6 36/18 41/21 43/17 43/18 43/19 43/21 43/24 44/10 45/1 45/4 45/6 47/8 49/3 49/12 50/2 51/7 53/12 54/3 55/17 55/18 55/21 56/15 56/17 57/6 57/14 58/12 58/17 60/16 60/20 61/4 62/11 62/23 63/5 64/12 64/16 66/24 67/1 67/10 68/16 68/23 68/24 68/25 69/9 69/9 69/11 69/22 70/8 70/21 77/19 81/17 81/20 82/10 82/11 82/18 83/4 83/5 83/6 92/6 93/3 93/6 95/24 96/1 97/13 102/25 103/5 103/6 103/9 103/12 103/16 108/19 109/10 109/20 110/3 110/6 111/19 113/11 113/15 115/23 121/2 123/15 125/24 127/4 127/5 128/2 128/3 128/5 128/7 128/17 131/16 133/5 138/9 138/11 141/21 142/14 143/8 143/25 144/6 144/15 144/21 144/25 145/2 145/10 145/13 149/19 152/15 152/25 153/1 154/4 155/9 156/6 165/7 166/15 166/21 have [225] haven't [3] 86/11 95/15 119/16 having [17] 1/15 41/1 125/25 129/15 130/4 131/18 145/23 145/24 149/9 150/5 151/17 164/20 168/23 172/1
generic... [1] 174/17 genes [2] 109/1 109/3 genetic [1] 88/13 genomic [3] 13/2 24/2 162/3 genuine [1] 6/4 get [11] 99/20 100/11 100/22 105/19 117/17 120/9 137/19 159/14 163/3 163/18 176/24 getting [2] 1/14 104/6 give [9] 1/23 8/14 28/16 74/11 74/19 102/11 148/2 166/19 172/5 given [15] 9/24 15/23 28/12 30/18 35/25 49/8 51/9 148/24 156/20 157/18 164/15 165/23 166/16 166/21 177/12 gives [3] 82/16 122/13 157/9 giving [3] 28/7 56/4 141/14 glad [1] 95/8 global [21] 52/20 53/8 55/2 79/10 79/18 88/24 90/3 90/21 92/11 102/6 115/7 116/4 116/14 120/21 128/9 138/6 146/5 146/10 146/16 175/7 175/25 globally [1] 139/21 go [35] 7/18 7/21 7/25 8/18 10/15 10/23 10/25 12/1 21/12 90/2 91/9 107/3 107/3 111/22 113/21 113/22 115/5 120/8 120/13 121/9 130/6 132/16 133/22 146/10 147/2 147/18 156/1 156/5 156/8 157/25 160/21 169/12 172/1 172/9 176/3 GO-Science [8] 7/18 7/21 7/25 8/18 10/15 10/23 10/25 12/1 goal [3] 7/6 24/21 35/21 goals [1] 5/12 GOARN [1] 79/18 goes [4] 3/4 114/8 143/20 176/8 going [28] 5/25 12/25 35/7 45/24 46/8 75/1 75/19 75/25 76/10 86/25 93/10 95/16 104/12 113/20 113/22	gone [5] 18/10 91/19 145/14 145/16 173/2 good [33] 1/3 1/9 15/7 17/13 21/20 22/10 23/1 24/3 26/17 32/2 34/20 45/20 50/21 51/24 63/15 74/16 78/12 95/7 124/5 131/18 132/6 161/17 162/2 162/15 164/10 164/13 165/14 174/1 177/23 177/24 177/25 178/4 178/11 goodbye [1] 16/4 goodness [1] 155/20 got [16] 46/10 74/3 107/1 119/16 123/15 123/25 124/22 135/10 136/9 159/14 167/3 174/6 174/10 174/16 174/19 174/21 governance [3] 50/21 67/20 153/23 government [151] 4/3 4/4 4/6 4/8 4/9 6/12 6/14 7/3 7/4 7/12 7/17 7/24 7/25 8/14 8/19 8/20 9/2 10/13 16/10 19/11 19/12 19/12 25/5 25/21 26/15 26/18 27/23 28/5 28/8 29/4 29/8 29/14 30/4 31/22 31/25 33/18 34/2 34/4 34/13 34/17 34/18 34/21 34/24 35/8 35/13 35/21 36/1 36/6 36/9 36/11 36/22 36/25 37/1 37/7 37/8 38/25 39/8 39/15 40/9 40/19 41/5 41/9 41/17 42/3 42/6 42/16 42/25 43/17 43/23 44/3 44/11 44/22 44/25 46/19 48/12 51/16 52/22 52/25 53/12 54/7 54/13 54/14 54/18 56/15 56/23 57/4 57/8 57/12 57/15 57/20 57/22 57/23 57/25 58/5 58/9 58/20 59/1 59/2 59/19 59/23 60/1 61/20 62/19 62/22 63/1 63/11 63/20 64/1 64/3 64/7 64/10 65/8 65/19 66/5 66/10 66/17 66/24 68/18 68/20 68/23 68/25 69/4 69/17	government's [23] 7/19 28/18 29/18 29/20 30/10 31/12 34/5 39/25 40/1 44/17 44/23 53/5 57/10 61/10 69/7 70/4 70/7 71/15 72/2 72/6 72/15 90/11 153/13 government-wide [1] 7/25 governments [7] 26/24 27/17 32/16 95/24 114/1 114/25 164/1 GP [2] 117/16 164/24 graded [1] 126/24 grading [1] 127/16 granted [1] 143/19 graph [2] 175/15 176/2 grateful [4] 1/13 1/25 44/25 51/19 great [7] 35/20 41/25 43/15 106/3 106/4 117/23 137/1 greater [9] 34/6 82/20 101/10 114/21 114/22 121/14 132/15 151/15 172/6 greatest [4] 20/2 27/20 78/8 102/3 greatly [4] 19/21 32/4 42/13 81/17 grief [1] 16/3 ground [1] 114/11 grounded [2] 158/15 158/17 group [16] 8/2 11/4 38/16 38/17 44/1 48/7 85/11 85/14 85/15 85/25 136/25 137/2 137/25 138/3 139/15 152/4 group-think [2] 11/4 152/4 groupings [1] 50/25 groups [22] 8/12 12/11 12/16 12/19 14/20 19/16 39/4 53/22 61/16 72/7 72/21 72/25 132/6 136/22 137/7 137/13 150/21 151/3 163/22 171/15 171/16 172/3 growing [1] 72/6	H H1N1 [5] 86/23 87/18 88/22 89/23 101/4 H2N2 [1] 87/22 H3N2 [1] 88/4 had [57] 5/4 12/12 13/14 15/12 20/23 29/5 31/22 41/19 42/3 42/8 49/6 50/2 51/7 51/21 52/22 53/20 65/3 81/15 88/23 94/5 97/14 101/4 101/6 104/5 104/5 106/9 107/6 107/23 107/24 108/5 120/20 120/23 121/6 122/7 122/9 122/14 122/15 125/9 132/6 132/19 134/6 134/22 145/15 145/22 154/15 160/4 167/18 167/20 168/8 168/11 168/23 170/12 172/5 173/18 174/15 174/21 175/6 had accurately [1] 132/19 hadn't [2] 106/15 125/10 HAIRS [1] 137/2 half [1] 103/13 Hammer [13] 74/10 74/14 74/16 75/8 75/19 79/2 86/8 98/24 132/20 133/1 166/3 178/7 180/6 hampered [1] 13/25 hand [7] 87/7 88/1 99/19 110/11 119/17 120/5 153/18 handful [2] 98/1 156/2 handling [1] 66/11 hang [1] 159/13 happen [5] 83/3 106/14 117/2 119/23 128/16 happened [14] 7/7 20/16 51/6 51/6 51/6 54/23 100/22 102/25	

H	healthier [4] 19/4 25/17 44/10 44/16	highest [2] 25/19 92/4	82/11 82/11 93/16 95/17 96/23 99/16	102/5 102/8 102/10 102/19 103/7 107/18
having... [3] 173/20 173/21 173/23	healthy [4] 5/21 22/16 25/2 44/7	highlight [1] 100/2	99/16 101/25 102/23 102/23 103/18 104/24	I
hazards [1] 4/21	hear [7] 20/4 48/4 74/22 89/13 95/8 136/25 141/12	highlighting [1] 50/9	108/1 109/6 110/21 113/5 113/10 113/12	I am [3] 3/4 45/22 143/17
he [1] 166/20	heard [13] 8/22 13/16 21/5 37/18 40/11 40/22 42/18 50/3 57/9 102/1 140/2 149/11 150/2	highlights [2] 158/23 158/24	113/21 114/1 114/5 114/8 114/20 124/5 124/23 127/23 128/16 129/14 131/8 135/1 135/6 135/10 135/17 135/18 136/12 136/13 138/9 140/22 144/4 146/10 147/17 147/25 149/24 150/20 150/21 150/25 153/16 153/18 164/25	I apologise [1] 156/18
head [4] 7/19 47/21 48/6 71/21	heart [2] 26/23 158/22	highly [4] 78/6 128/5 175/7 177/18	His Majesty's [1] 56/23	I appear [5] 15/7 26/17 34/20 34/22 51/24
heads [3] 34/2 47/14 56/2	heartfelt [1] 15/10	Hill [4] 6/11 6/13 15/3 179/8	historical [2] 127/15 157/2	I appreciate [2] 130/14 154/16
health [156] 1/7 1/11 2/11 3/11 3/12 3/13 3/15 3/17 3/21 3/22 4/4 4/22 5/20 5/22 8/23 8/25 9/6 13/8 13/12 15/5 15/8 15/14 16/8 16/10 16/15 17/1 17/1 17/8 18/11 18/19 19/1 19/20 21/2 21/15 21/18 22/11 22/13 22/15 22/18 23/4 23/4 23/6 25/1 25/13 25/18 28/4 30/19 30/25 31/23 37/6 37/25 40/4 41/18 42/14 42/18 42/20 42/22 42/23 42/24 43/7 43/9 43/13 44/9 44/15 48/20 52/12 52/16 65/24 65/25 66/2 77/1 77/9 77/11 77/12 77/16 78/1 78/11 79/8 79/10 79/11 79/14 103/15 103/22 116/11 116/17 116/18 116/22 117/6 117/6 117/14 120/22 121/25 122/5 122/25 123/5 123/8 124/17 125/6 125/8 125/16 125/23 126/8 126/21 127/3 127/7 127/10 127/11 127/18 128/9 131/20 133/14 139/17 139/24 140/2 140/23 144/5 144/7 144/9 144/9 144/10 144/12 144/15 144/16 144/19 144/20 144/22 145/2 145/3 145/4 145/6 145/7 145/8 145/11 145/13 145/17 145/18 145/24 146/14 147/11 149/10 149/11 149/20 150/22 151/8 153/25 164/12 171/5 173/1 175/8 175/25 176/25 177/4 177/5 177/8 179/4 179/11	hearings [6] 1/15 2/3 27/6 29/5 34/21 56/5	himself [1] 166/14	historically [1] 83/6	I asked [1] 160/5
health-related [1] 42/22	heighten [1] 33/14	hindsight [3] 18/4 54/23 125/21	histories [1] 76/21	I believe [8] 87/25 91/9 94/13 128/11 143/16 151/5 170/19 173/7
healthcare [10] 3/19 3/20 19/7 29/23 91/20 91/22 92/2 100/12 100/14 150/21	heightened [2] 81/18 81/20	hinting [1] 83/18	history [3] 55/8 95/18 108/5	I can [6] 15/1 45/22 46/5 74/5 169/18 175/20
	help [15] 7/1 14/24 19/3 20/20 25/16 28/15 33/19 49/14 54/19 63/21 71/1 72/12 115/10 152/17 168/19	his [2] 56/16 56/23	hitherto [1] 81/15	I certainly [2] 133/8 170/3
	helped [2] 17/3 42/13	His Majesty's [1] 56/23	hits [1] 66/15	I confess [1] 119/14
	helpful [7] 3/8 12/4 15/2 36/14 155/23 173/13 177/15	historical [2] 127/15 157/2	HIV [1] 24/17	I cut [1] 1/6
	helping [4] 3/25 28/6 58/3 178/9	historically [1] 83/6	hoc [1] 172/8	I did [3] 141/12 152/19 178/8
	hemagglutinin [1] 88/8	historically [1] 83/6	HOCS [1] 47/22	I do [3] 135/13 143/16 148/4
	Hence [1] 2/25	historically [1] 83/6	hold [1] 17/18	I don't [10] 63/5 86/11 111/1 116/5 119/23 138/16 140/23 155/3 155/12 157/8 173/23
	her [2] 33/8 45/10	historically [1] 83/6	holistically [1] 116/14	I fear [1] 73/23
	Herculean [1] 20/1	home [3] 16/25 22/25 107/3	home [4] 10/10 16/9 158/9 159/10	I finally [1] 32/25
	here [25] 1/25 2/8 26/7 36/1 36/14 36/24 45/23 66/1 84/13 104/9 115/19 127/2 129/20 141/24 146/19 149/6 155/23 158/18 160/23 162/23 165/3 168/18 170/24 177/17 178/1	home [3] 16/25 22/25 107/3	Hong [2] 88/5 89/12	I gather [1] 73/22
	heretofore [1] 45/8	homes [4] 10/10 16/9 158/9 159/10	Hong Kong [2] 88/5 89/12	I go [1] 169/12
	heroic [1] 16/18	hoops [1] 175/18	hope [9] 2/22 3/7 45/4 45/5 45/9 101/21 120/13 123/25 135/12	I have [7] 19/2 25/16 35/25 131/10 132/21 140/22 178/3
	Heymann [1] 91/9	hoped [1] 2/16	hope [9] 2/22 3/7 45/4 45/5 45/9 101/21 120/13 123/25 135/12	I hope [5] 45/9 101/21 120/13 123/25 135/12
	hidden [1] 45/21	Horby [1] 169/25	horizon [4] 118/4 138/6 138/14 138/18	I intend [1] 166/2
	high [14] 22/25 35/17 41/1 45/2 51/3 56/16 79/8 82/12 100/24 133/16 136/8 148/22 154/4 154/20	horizon [4] 118/4 138/6 138/14 138/18	hospital [2] 19/15 164/23	I invite [2] 166/16 166/18
	high-consequence [3] 79/8 133/16 136/8	hospitals [6] 10/10 16/9 117/16 158/9 159/10 165/25	hospital [2] 19/15 164/23	I just [3] 132/18 167/10 175/9
	high-level [2] 45/2 154/20	hosted [1] 139/14	hospitalisations [1] 164/12	I knew [2] 46/7 88/11
	higher [4] 85/17 90/22 91/8 121/20	hosts [1] 39/8	hospitals [6] 10/10 16/9 117/16 158/9 159/10 165/25	I know [1] 153/6
		Hot [1] 80/10	hosted [1] 139/14	I look [1] 2/2
		hours [1] 139/20	hosts [1] 39/8	I made [1] 160/3
		houses [1] 57/18	Hot [1] 80/10	I may [8] 56/20 66/8 117/12 124/20 148/22 158/11 175/11 177/16
		how [64] 11/24 14/5 14/5 14/13 14/14 23/22 33/16 35/13 36/2 38/23 51/12 63/9 70/11 72/20 78/13	hours [1] 139/20	I mean [8] 19/18 139/23 147/17 155/13 155/21 157/20 158/11 172/20
			houses [1] 57/18	I mentioned [2] 138/7 142/18
			how [64] 11/24 14/5 14/5 14/13 14/14 23/22 33/16 35/13 36/2 38/23 51/12 63/9 70/11 72/20 78/13	I might [1] 152/13

I	I wonder [1] 162/8	126/9 126/20 133/15	107/17 112/15	161/19
I mispronounced [1] 73/22	I would [7] 35/8 74/1	135/8 142/11 142/13	important [37] 1/14	incorporating [1] 144/9
I need [1] 155/16	96/6 110/14 125/22	143/11 143/11 143/14	1/23 2/1 2/8 3/6 4/12	increased [4] 19/21
I please [2] 74/9	172/25 174/23	146/13 147/3 147/10	5/1 8/17 10/2 16/1	110/8 110/9 110/9
I recall [1] 171/25	I'd [2] 113/8 132/3	147/18 148/21 149/16	21/20 31/2 31/7 31/18	increases [1] 82/1
I referred [2] 130/1	I'll [5] 67/4 93/13	149/18 150/7 151/9	33/17 48/10 49/13	increasing [6] 23/7
148/9	151/13 166/24 175/11	152/16 154/6 155/23	50/4 53/17 60/2 74/20	31/14 82/1 85/4 85/9
I represent [2] 6/14	I'm [24] 1/6 45/21	155/25 157/5 158/11	74/21 79/18 87/5 87/6	95/12
46/18	45/21 46/1 51/18	159/13 161/11 162/19	115/5 126/4 137/17	increasingly [1] 141/2
I right [2] 168/8	75/19 75/24 86/10	170/23 170/25 172/12	141/24 147/3 149/10	incrementally [1] 43/17
169/25	93/10 93/11 95/8	174/10 175/11 175/20	149/15 149/19 151/8	incubation [3] 174/3
I say [1] 3/7	109/17 110/20 128/19	176/4 177/16	151/23 158/19 176/24	174/6 174/10
I see [2] 169/23	130/23 132/13 138/8	ignored [2] 113/24	importantly [1] 7/13	indeed [52] 4/7 13/21
173/10	143/23 155/14 155/20	121/6	impose [1] 18/8	22/14 26/13 28/16
I shall [3] 18/25	156/12 167/1 176/2	IHR [3] 128/23 129/1	impossible [2] 50/7	30/16 33/10 33/13
45/13 138/25	176/3	146/22	148/1	34/15 35/13 45/12
I should [4] 42/12	I'm afraid [3] 93/11	ill [3] 18/15 87/13	improve [11] 7/8 47/6	47/2 51/20 62/8 78/3
43/5 109/18 141/15	130/23 155/14	92/24	54/13 54/20 55/6 56/9	78/9 79/1 79/12 80/13
I suppose [2] 150/2	I've [7] 10/12 18/19	illness [3] 17/8	66/9 66/24 67/2 69/20	80/20 80/24 81/12
172/18	65/17 66/9 74/3 89/20	164/13 165/8	70/25	84/9 87/3 91/25 94/11
I take [2] 36/14 167/5	167/3	illnesses [1] 18/21	improved [6] 14/2	95/15 99/21 99/25
I think [75] 6/11 15/4	Ian [1] 11/2	illustrated [1] 27/8	25/14 33/23 36/3	100/25 101/17 107/14
34/16 46/2 76/25	idea [4] 2/22 102/12	imagine [2] 74/5	70/19 148/16	109/15 116/1 117/25
78/20 86/24 89/11	103/9 115/11	174/23	improvement [5]	119/21 132/10 136/20
93/10 94/19 98/13	ideal [1] 98/22	immediate [2] 23/19	29/10 55/24 67/5	144/14 145/9 146/21
98/19 100/3 104/19	identified [16] 7/16	150/9	68/11 70/11	161/7 162/7 163/4
104/19 105/15 105/16	33/13 40/24 41/1 41/4	immediately [2]	improvements [7]	163/12 165/5 167/22
106/8 107/23 110/6	49/19 55/17 62/13	64/23 147/6	42/23 43/23 44/6 67/3	169/4 169/15 170/14
112/15 118/10 121/24	65/20 68/21 73/7	immunosuppressed	80/7 80/15 154/12	177/11 178/8
122/4 123/24 124/8	83/10 93/4 120/19	[1] 85/17	improving [2] 3/13	independence [2]
124/10 125/21 132/4	125/6 172/1	Immunosuppression	150/5	151/16 151/19
132/6 133/4 134/12	identifies [1] 139/17	[1] 85/11	inability [1] 114/3	independent [18]
136/5 137/12 137/14	identify [16] 21/10	impact [16] 18/13	inaccessible [1]	8/14 19/4 25/17 30/1
137/15 137/17 140/25	29/9 30/23 33/6 33/17	26/21 30/19 30/21	162/19	46/23 52/25 68/1
142/17 145/4 145/20	78/5 78/10 103/6	48/17 49/12 50/5	inadequate [1]	75/14 119/10 119/18
146/19 147/24 150/10	104/1 105/12 110/18	53/21 59/18 81/11	162/21	120/4 148/8 148/12
151/1 151/19 151/22	124/6 125/6 134/9	85/7 97/14 97/19	incident [5] 37/7	151/12 160/20 170/16
151/23 152/23 153/9	134/14 166/9	109/10 113/10 147/5	37/10 37/23 43/10	175/9 175/24
153/21 155/17 155/21	identifying [7] 50/18	impacting [1] 82/9	43/13	Index [3] 128/10
155/25 156/12 157/4	61/10 102/10 112/9	impacts [11] 17/21	incidents [4] 43/7	175/8 175/25
158/20 159/21 160/19	135/16 164/13 166/7	49/7 52/15 53/24	43/9 110/25 111/5	indicate [6] 87/14
164/4 168/22 169/14	ie [1] 19/19	63/17 63/22 72/21	include [16] 5/23	88/6 88/7 88/12 88/14
169/16 169/22 173/25	ie non-residential [1]	84/3 97/20 146/9	22/19 23/9 37/24 56/1	95/6
173/25 174/15 174/18	19/19	151/2	56/24 57/7 60/3 63/20	indicated [1] 166/12
174/20 175/19 176/18	if [96] 33/21 36/14	impairment [1] 30/25	70/2 71/17 93/17	indicative [1] 156/7
176/18 176/18 177/16	43/2 46/25 56/20	impending [1] 122/6	138/6 171/16 171/16	indicator [1] 72/20
177/20	64/13 66/8 73/24	implement [2] 25/22	171/20	indicators [1] 128/23
I think's [1] 176/23	74/23 75/1 75/1 76/20	174/11	included [3] 61/19	individual [10] 57/20
I understand [3]	82/2 85/14 90/2 93/15	implementable [1]	63/5 65/22	58/24 59/3 64/16
75/23 91/16 156/10	94/14 94/15 95/20	68/10	includes [4] 58/6	97/23 127/17 142/2
I want [4] 3/9 86/15	96/14 97/23 97/25	implementation [4]	61/5 61/22 96/20	individuals [9] 16/16
108/17 169/10	98/10 99/20 100/2	68/24 154/5 154/20	including [28] 1/21	53/22 54/6 76/8 85/12
I wanted [2] 99/6	100/22 101/9 102/17	155/1	3/19 3/21 11/19 13/18	85/14 85/15 87/13
138/19	103/11 104/3 104/11	implemented [5]	22/3 25/7 28/10 36/8	177/22
I was [8] 77/14 77/23	106/21 106/23 107/9	10/8 22/7 33/25 56/9	40/25 43/7 47/11	industry [3] 13/7
79/20 84/15 138/24	107/9 107/16 108/10	69/9	47/17 49/6 50/25	134/19 171/20
139/8 144/23 144/23	108/21 111/3 112/3	implementing [2]	53/25 54/9 66/6 66/21	inequalities [7] 13/9
I wasn't [2] 152/20	112/5 112/16 114/12	68/17 70/3	67/11 69/6 69/14	22/15 23/5 30/20 31/1
170/20	114/13 114/16 115/8	implication [1]	70/18 78/8 85/6 93/1	44/8 44/9
I will [2] 46/18 76/5	115/23 116/24 117/3	162/14	103/25 162/3	inequity [1] 177/5
I won't [1] 166/17	117/5 117/8 117/8	implications [2]	inclusion [2] 48/21	
	117/9 117/12 117/14	112/24 125/25	68/8	
	118/19 119/2 119/16	importance [6] 26/4	income [1] 131/6	
	124/20 125/22 126/2	48/16 49/21 50/21	incorporated [2] 51/1	

I	160/10 169/5 174/17 175/3	insight [2] 45/7 140/22	121/25 123/4 125/8 125/16 125/23 126/8 126/22 127/3 127/4 127/8 127/11 127/18 127/24 131/2 133/23 139/14 141/4 142/18 143/6 146/14 147/11 152/11 153/25	Iris [1] 41/13 irreparably [1] 51/11 is [487] isn't [4] 102/7 126/22 173/22 174/9 isolate [2] 107/2 159/8 issue [17] 17/11 32/5 49/5 58/24 59/24 99/7 108/20 108/25 109/2 129/3 132/13 146/2 151/8 151/25 159/22 162/17 163/2 issued [4] 118/14 140/6 152/16 153/9 issues [14] 21/16 30/25 36/21 38/18 42/23 50/19 57/19 58/18 68/7 70/9 79/25 95/11 142/8 173/9 it [337] it's [55] 2/16 4/12 5/1 5/6 6/11 7/18 15/4 49/3 53/17 56/9 58/19 60/2 74/20 77/18 83/2 86/3 92/5 95/13 101/8 102/8 104/9 109/14 113/20 113/22 113/23 115/15 117/10 119/14 120/3 124/13 126/5 126/9 126/20 129/6 132/17 137/15 139/15 139/16 140/10 145/20 151/14 153/4 153/5 154/16 155/13 160/20 161/18 170/19 174/8 174/9 175/12 175/20 177/3 177/4 177/11 its [80] 1/13 2/2 3/18 3/23 4/2 5/12 6/1 6/1 7/19 8/8 8/12 8/24 9/1 9/20 9/20 10/18 12/3 12/11 13/1 14/20 16/8 17/11 18/13 19/5 26/1 26/4 28/6 28/20 29/8 30/5 30/24 31/13 35/23 36/2 41/5 41/11 43/17 43/20 47/17 48/13 52/3 52/24 53/6 53/16 53/21 54/10 55/13 55/13 56/8 56/23 57/6 58/23 58/24 59/20 61/6 61/11 64/12 66/11 68/11 70/2 71/4 71/7 80/11 80/21 86/19 88/23 92/10 103/18 105/6 118/21 119/5 123/1 123/2 123/3 140/22 141/5 142/14 143/8 143/25 167/20 itself [8] 12/17 80/16 138/9 142/21 152/11 156/8 171/4 171/9
inevitably [1] 4/1 infamously [1] 24/21 infect [4] 83/4 83/15 94/15 100/5 infected [15] 84/17 84/18 91/15 92/16 92/25 93/1 93/6 100/9 100/13 101/9 106/21 106/24 107/8 159/5 159/7 infecting [1] 100/14 infection [21] 10/9 82/23 82/25 92/19 92/25 93/3 93/4 93/19 93/21 93/24 100/8 101/8 106/19 111/15 111/17 123/8 147/16 159/11 167/20 167/25 168/1 infections [14] 94/1 100/24 113/15 135/4 137/2 137/5 137/9 137/10 138/2 138/8 164/13 165/10 165/12 174/3 infectious [21] 4/20 43/7 65/22 76/9 79/6 79/8 80/3 80/7 81/17 120/22 121/1 133/16 133/25 135/24 136/8 139/15 141/21 141/22 144/17 146/6 161/13 infects [2] 99/14 111/13 inference [1] 152/23 influenced [2] 62/16 168/17 influenzas [1] 85/6 influenza [38] 27/15 27/20 32/19 40/10 40/25 41/10 41/11 41/19 41/25 65/20 66/7 86/23 87/18 88/4 88/10 88/22 88/23 89/19 89/23 90/13 101/3 101/6 102/3 105/7 105/13 106/6 106/25 107/10 107/21 107/24 135/4 135/21 157/15 160/25 161/9 161/12 161/21 174/6 influx [1] 147/16 inform [9] 7/7 8/10 9/1 12/3 29/13 34/7 63/3 72/7 72/22 information [23] 2/13 28/22 38/3 40/12 40/17 43/2 43/11 55/11 55/16 70/19 86/14 87/6 87/7 105/19 108/3 118/25 139/21 140/7 159/18	informative [1] 2/17 informed [6] 64/8 118/10 118/11 118/12 118/22 142/19 infrastructure [2] 13/12 63/12 inherent [1] 177/18 inherently [1] 103/9 initial [6] 12/5 24/1 114/9 156/6 168/6 169/8 initially [5] 13/22 81/25 114/9 114/11 175/2 initiative [5] 171/4 171/9 171/21 171/22 173/8 initiatives [1] 170/23 innovation [1] 5/24 input [5] 10/2 65/19 68/7 71/11 152/3 INQ [1] 153/4 INQ000183545 [2] 120/2 175/12 INQ000196611 [5] 75/6 95/20 101/25 156/1 156/4 INQ000207453 [2] 86/6 99/5 inquiries [2] 53/1 53/13 Inquiries Act [1] 53/1 inquiry [76] 1/13 1/20 1/23 2/9 2/13 2/18 2/21 2/21 3/1 3/7 3/25 4/18 6/1 6/3 6/6 6/17 7/7 11/10 14/3 15/9 18/1 20/9 20/21 26/4 26/8 27/2 27/4 27/24 28/14 29/12 30/3 30/14 30/17 32/7 33/5 33/16 33/20 34/13 35/2 35/4 44/21 45/5 45/6 46/16 48/16 49/5 49/14 49/20 49/25 50/4 52/18 53/1 53/3 53/5 54/16 54/19 55/9 55/13 55/25 56/4 56/6 60/16 65/17 66/10 66/19 69/16 74/15 75/13 76/2 86/10 151/6 152/14 166/6 166/8 166/10 180/8 Inquiry's [15] 1/17 2/16 11/15 28/7 28/24 29/4 29/13 29/16 33/2 50/9 53/24 55/15 67/8 67/9 73/18 insect [2] 24/15 84/16 insects [1] 84/5 inside [1] 8/13	insights [1] 168/13 insistence [1] 9/19 insofar [1] 90/13 inspectorate [3] 29/22 29/23 29/24 instead [1] 61/15 Institute [2] 21/1 133/24 institutional [2] 27/13 33/24 institutions [2] 141/5 141/8 instructed [2] 34/23 79/22 instruction [1] 79/25 instrumental [1] 21/7 integrate [2] 72/17 142/22 integrated [4] 69/18 71/10 117/8 142/23 integrity [1] 5/24 intelligence [8] 79/15 80/2 138/15 138/19 138/20 139/9 160/13 160/18 intend [1] 166/2 intended [5] 10/12 12/6 62/8 63/2 63/13 intense [1] 14/21 intensity [1] 63/23 intensive [1] 22/21 intention [1] 3/1 interaction [2] 112/19 117/18 interconnected [3] 82/6 84/25 132/8 interdependencies [1] 68/6 interdisciplinary [1] 116/13 interest [6] 3/3 3/8 49/5 67/21 127/15 127/23 interested [3] 39/24 70/25 172/10 interesting [1] 176/2 interests [2] 61/12 153/15 interface [2] 82/16 96/15 interfaces [1] 95/13 intergovernmental [2] 33/22 34/1 internal [4] 61/21 68/13 69/1 69/21 internally [1] 9/4 international [39] 20/19 24/10 59/17 62/18 77/1 79/18 80/2 85/4 96/1 114/15 118/5 118/19 118/25 119/1 119/2 120/23	121/25 123/4 125/8 125/16 125/23 126/8 126/22 127/3 127/4 127/8 127/11 127/18 127/24 131/2 133/23 139/14 141/4 142/18 143/6 146/14 147/11 152/11 153/25 international-based [1] 127/24 internationally [1] 144/8 internet [1] 139/16 interrogates [1] 70/11 interrupting [1] 98/18 intersection [1] 117/2 intervene [1] 117/22 intervention [1] 130/7 into [41] 4/13 12/25 20/24 45/7 51/1 53/3 67/15 69/3 70/6 82/17 90/10 91/10 102/24 103/12 104/6 104/8 108/4 113/5 115/17 117/9 119/1 121/14 124/3 140/22 142/22 144/6 145/3 146/13 150/6 153/4 153/6 154/19 160/21 165/13 167/19 168/13 170/25 172/16 172/19 173/10 174/3 introduced [1] 17/17 introducing [1] 71/25 invaluable [2] 33/5 43/4 invasion [1] 65/7 invested [1] 31/8 investigating [3] 54/17 114/12 115/22 investigation [6] 4/1 32/7 47/23 51/5 115/17 116/2 investigations [1] 130/1 investment [4] 13/13 14/9 31/14 148/13 invests [1] 133/21 invite [2] 166/16 166/18 invited [1] 11/3 invitees [1] 60/3 involved [2] 50/11 172/13 Involving [1] 111/5 Ireland [13] 45/19 46/20 46/21 47/1 47/15 47/21 47/24 48/9 48/12 49/9 49/16 51/13 179/23	

J	Justice [2] 3/6 166/14	28/18 33/8 39/24 51/12 75/3 81/7 88/11 98/11 98/14 102/15 102/16 102/19 102/20 102/25 104/4 104/11 107/1 107/2 107/7 111/1 113/20 113/22 114/6 114/10 116/5 116/8 119/23 128/16 140/23 143/16 146/20 146/21 148/4 149/14 152/8 153/6 155/12 157/4 157/21 157/23 159/5 164/25 166/5	120/25 131/16 142/11 163/9 168/23	left [6] 45/22 52/21 120/5 134/5 141/8 141/10
January [14] 30/7 48/12 48/13 48/19 48/21 67/24 79/23 79/23 121/24 122/4 124/17 125/7 129/18 165/16	Justice UK [1] 166/14	large-scale [3] 13/4 23/21 163/9	large-scale [3] 13/4 23/21 163/9	left-hand [1] 120/5
January 2020 [2] 30/7 129/18	K	largely [1] 54/3	largely [1] 54/3	legal [5] 2/2 9/13 34/24 127/10 143/16
January 2021 [1] 67/24	KC [15] 1/8 15/6 15/8 26/16 34/19 45/19 51/23 166/23 179/4 179/12 179/15 179/19 179/23 180/2 180/10	larger [1] 91/19	larger [1] 91/19	legally [1] 4/13
jargon [1] 155/15	keen [1] 56/8	last [10] 24/17 73/24 103/13 104/21 104/22 110/3 120/7 138/7 169/24 175/20	last [10] 24/17 73/24 103/13 104/21 104/22 110/3 120/7 138/7 169/24 175/20	legislation [3] 21/8 60/22 67/19
JEE [3] 176/16 176/24 177/13	keep [9] 16/13 17/3 18/24 74/19 105/21 145/21 158/19 158/20 163/19	late [2] 124/17 174/9	late [2] 124/17 174/9	legislative [1] 22/6
Jennifer [1] 34/23	Keith [12] 31/2 36/5 55/16 56/15 61/4 74/8 76/5 93/11 98/18 132/17 175/5 178/5	later [4] 77/17 89/14 121/8 132/15	later [4] 77/17 89/14 121/8 132/15	Legitimate [1] 35/19
Jennifer Nicholson-White [1] 34/23	Keith's [1] 27/8	latest [1] 128/22	latest [1] 128/22	length [3] 19/11 28/23 47/17
Jimmy [3] 74/10 74/12 180/4	kept [3] 52/14 133/17 133/23	latter [1] 64/8	latter [1] 64/8	less [12] 17/10 96/25 99/22 99/22 99/23 111/22 112/14 115/15 129/15 135/2 163/17 164/12
job [3] 18/23 19/5 25/21	key [11] 8/17 38/17 38/20 55/20 57/7 68/20 71/9 73/5 124/20 141/21 163/22	laudable [3] 148/21 150/24 158/12	laudable [3] 148/21 150/24 158/12	lessen [1] 10/9
jobs [1] 149/19	killed [1] 89/15	launch [3] 5/2 162/4 162/16	launch [3] 5/2 162/4 162/16	lesson [3] 53/8 66/20 177/21
joined [1] 58/11	kind [7] 22/17 53/11 55/2 84/2 114/14 134/20 174/21	law [1] 143/11	law [1] 143/11	lessons [21] 7/15 10/24 11/12 20/10 30/5 34/9 35/5 41/24 43/22 49/19 50/17 55/1 55/5 56/17 66/8 66/13 68/21 69/5 69/13 69/22 73/7
joint [11] 44/13 47/14 74/17 75/4 127/20 127/25 128/3 128/6 149/2 175/5 175/23	Kingdom [69] 9/6 17/22 20/8 21/8 22/6 25/11 26/24 28/3 52/19 53/2 53/9 57/5 60/7 61/3 61/11 61/15 65/11 66/5 71/15 72/2 72/3 73/14 77/6 80/8 80/11 80/16 89/16 90/1 90/5 90/14 92/6 92/15 95/23 96/3 100/7 103/15 105/5 118/9 118/20 118/22 122/11 127/24 128/16 130/13 133/20 134/6 135/14 135/20 136/23 137/7 141/8 142/13 143/5 143/13 143/25 144/7 144/13 145/3 145/6 148/24 153/15 161/3 161/5 161/6 161/24 162/11 162/13 163/7 163/10	lead [19] 3/12 5/20 8/21 8/24 19/4 48/1 59/24 60/1 61/20 62/15 62/18 63/10 63/21 63/24 65/19 70/8 74/15 177/25 180/8	lead [19] 3/12 5/20 8/21 8/24 19/4 48/1 59/24 60/1 61/20 62/15 62/18 63/10 63/21 63/24 65/19 70/8 74/15 177/25 180/8	let [3] 35/24 36/4 75/2
jointly [2] 42/25 66/3	kill [2] 99/23 109/21	leaders [2] 43/3 150/22	leaders [2] 43/3 150/22	let's [3] 99/15 114/7 125/17
judged [2] 100/23 100/23	Kingdom's [6] 32/12 66/23 67/6 73/12 96/5 144/5	leadership [8] 3/17 11/22 51/2 148/11 153/23 154/1 159/22 160/1	leadership [8] 3/17 11/22 51/2 148/11 153/23 154/1 159/22 160/1	lettering [1] 88/6
judgement [2] 124/14 126/5	Kinnier [3] 26/14 26/16 179/15	leading [5] 18/17 20/20 63/15 64/12 170/6	leading [5] 18/17 20/20 63/15 64/12 170/6	letters [1] 120/6
judgments [1] 53/6	knew [3] 46/7 88/11 105/17	leak [4] 96/14 110/25 111/8 112/11	leak [4] 96/14 110/25 111/8 112/11	level [25] 4/10 9/22 22/22 23/1 25/22 39/20 40/7 40/8 40/21 45/2 56/16 60/10 64/2 105/1 105/2 114/15 123/3 125/9 143/3 146/10 148/22 154/4 154/20 160/10 163/25
July [3] 48/3 66/2 70/22	knock [2] 149/19 150/3	learn [15] 2/8 2/9 6/4 7/15 20/11 21/11 23/15 35/5 36/2 44/23 51/15 54/22 55/5 66/24 96/23	learn [15] 2/8 2/9 6/4 7/15 20/11 21/11 23/15 35/5 36/2 44/23 51/15 54/22 55/5 66/24 96/23	levels [7] 22/17 22/22 23/7 72/18 110/13 146/7 160/9
July 2021 [2] 66/2 70/22	know [45] 18/7 20/9	leak [4] 96/14 110/25 111/8 112/11	leak [4] 96/14 110/25 111/8 112/11	liaison [1] 34/1
jump [1] 83/16		learn [15] 2/8 2/9 6/4 7/15 20/11 21/11 23/15 35/5 36/2 44/23 51/15 54/22 55/5 66/24 96/23	learn [15] 2/8 2/9 6/4 7/15 20/11 21/11 23/15 35/5 36/2 44/23 51/15 54/22 55/5 66/24 96/23	lies [3] 26/23 79/10 137/14
jumped [1] 82/10		learned [15] 10/24 11/12 20/10 30/5 34/9 41/24 43/22 53/9 55/1 66/8 68/22 69/5 69/13 73/7 168/10	learned [15] 10/24 11/12 20/10 30/5 34/9 41/24 43/22 53/9 55/1 66/8 68/22 69/5 69/13 73/7 168/10	life [4] 5/21 6/21 26/2 153/25
June [7] 1/1 29/7 47/24 69/2 75/8 75/8 178/18		learning [15] 50/18 53/11 56/12 56/17 67/4 148/7 156/22 157/1 158/3 159/18 160/10 160/14 167/7 168/19 170/25	learning [15] 50/18 53/11 56/12 56/17 67/4 148/7 156/22 157/1 158/3 159/18 160/10 160/14 167/7 168/19 170/25	life-altering [1] 6/21
June 2020 [1] 29/7		learnings [1] 145/22	learnings [1] 145/22	light [6] 30/17 55/24 66/13 148/6 166/15 166/20
June 2021 [2] 47/24 69/2		least [10] 18/20 50/3 90/13 110/4 111/24 118/16 119/2 148/1 161/21 175/2	least [10] 18/20 50/3 90/13 110/4 111/24 118/16 119/2 148/1 161/21 175/2	like [39] 35/8 46/4 52/2 76/9 76/16 78/7 83/24 84/19 84/20 85/22 96/14 96/21 98/2 98/20 102/20 103/11 104/22 105/5 112/5 113/8 115/16 122/3 126/20 131/13 131/14 132/9 137/10 142/1 155/11 155/16
juniors [1] 34/22		led [7] 13/5 40/19 42/15 43/10 168/4 169/8 173/8	led [7] 13/5 40/19 42/15 43/10 168/4 169/8 173/8	
just [45] 7/13 25/5 56/13 56/20 83/17 84/13 84/15 86/15 88/18 94/24 97/8 98/10 99/7 100/2 102/20 113/8 113/20 114/8 117/12 117/15 117/16 121/20 122/2 127/15 129/14 132/17 132/18 135/12 137/4 142/21 150/1 154/22 157/24 166/25 167/2 167/10 174/1 174/7 174/18 175/9 175/19 175/20 176/3 177/23 177/24				

L	loneliness [1] 15/20	155/2 156/3 159/8	many [39] 1/23 4/24	me [10] 10/24 35/24
like... [9] 157/24	long [11] 6/21 15/20	160/3 165/6 168/13	11/8 12/13 14/18	36/4 73/23 73/25
160/22 161/14 161/20	39/1 51/21 54/9 78/13	177/7	14/24 15/16 15/22	74/23 93/11 141/14
164/5 168/20 170/13	81/7 95/24 96/2 96/4	main [7] 56/14 61/10	16/4 16/6 16/15 17/4	148/1 155/14
170/23 170/25	154/5	91/12 106/5 106/25	19/2 24/21 25/12	mean [25] 18/13
likelihood [3] 41/1	long Covid [2] 6/21	148/9 176/9	35/11 36/7 41/23 42/4	19/18 83/7 83/12 84/7
82/12 85/17	54/9	mainly [1] 154/9	43/18 43/22 51/8	85/20 93/15 93/15
likely [8] 22/16 83/2	long term [1] 154/5	maintain [4] 13/18	52/15 53/18 93/23	95/1 103/14 109/2
99/23 115/12 115/15	longer [8] 17/17 19/5	14/6 22/25 56/12	95/17 95/23 100/6	110/15 116/10 127/4
125/17 147/18 148/2	19/22 25/17 54/6 70/8	maintaining [2]	104/4 105/5 105/11	139/23 146/16 147/17
limit [2] 25/8 167/25	83/11 174/10	14/10 24/25	107/7 114/20 121/2	155/13 155/13 155/21
limited [6] 22/15	look [13] 2/2 57/19	maintains [1] 12/3	123/25 126/2 126/14	157/20 158/11 161/4
31/16 66/7 97/12	80/22 86/25 111/3	maintenance [1]	131/8 140/1	164/19 172/20
100/11 168/1	116/24 122/17 141/6	22/3	March [5] 48/25	meaning [1] 82/8
line [5] 5/10 27/6	152/25 153/11 154/15	Majesty's [1] 56/23	51/10 67/17 125/11	meanings [1] 84/12
52/12 109/10 147/8	156/1 156/3	major [13] 13/6 13/22	165/17	means [14] 3/22 41/2
lines [1] 175/20	looked [1] 122/3	24/17 38/24 59/17	March 2020 [2] 51/10	50/16 50/18 84/8
link [2] 78/24 129/23	looking [15] 78/9	62/5 70/4 83/11 86/9	67/17	84/14 87/12 93/23
links [2] 28/20 40/14	94/3 119/4 127/9	86/12 86/17 102/2	mark [1] 141/12	95/2 96/22 96/24
list [17] 12/7 59/13	132/14 134/14 146/2	108/14	markedly [1] 14/2	104/16 106/13 106/19
83/11 86/15 133/12	151/14 152/21 167/17	majority [2] 59/2	marks [1] 51/4	meant [2] 15/18
133/16 133/17 133/19	176/16 176/25 177/3	68/17	mass [3] 159/4 163/2	174/11
134/2 134/23 135/2	177/4 177/7	make [27] 9/10 9/16	163/3	measure [3] 43/5
135/9 135/15 136/7	looks [1] 73/17	25/22 28/2 42/3 45/1	match [1] 41/22	72/19 131/8
136/10 136/11 136/17	loose [1] 115/24	45/24 46/10 52/22	material [3] 22/3	measurement [1]
listed [1] 149/6	lose [1] 159/13	55/6 88/13 107/18	27/15 70/10	176/12
listen [6] 1/22 12/1	loss [5] 6/17 35/8	109/23 109/25 115/24	matter [15] 23/5	measures [13] 16/23
35/4 36/1 44/23 73/16	35/12 49/22 50/6	120/7 129/5 131/5	33/20 59/4 101/7	21/22 23/14 33/7
listening [5] 2/24 6/9	losses [1] 15/16	135/18 156/4 159/3	111/15 111/16 111/23	42/13 52/17 71/16
26/12 45/6 51/19	lost [6] 15/12 17/4	159/7 160/23 161/10	112/1 127/23 145/19	105/2 123/7 131/9
listing [1] 134/3	26/20 35/11 52/3	163/15 163/24 164/3	146/18 151/6 151/14	167/18 173/17 176/5
lists [3] 133/22 134/1	159/3	make-up [1] 88/13	153/16 153/17	measuring [1] 92/14
134/12	lot [3] 118/25 130/7	makers [4] 12/20	matters [17] 3/22	mechanism [3] 59/16
little [8] 39/24 93/20	155/14	28/14 30/12 164/1	10/10 10/16 11/5	60/18 170/24
105/17 106/18 112/4	lots [2] 175/16	makes [2] 31/12	11/14 12/7 12/16	mechanisms [5] 67/6
131/10 142/3 147/8	175/18	130/5	22/12 28/23 41/8	114/16 115/7 130/20
live [4] 6/20 19/22	loved [7] 6/19 15/12	making [14] 9/17	46/24 47/9 73/11	148/14
25/16 52/7	15/19 15/25 16/13	18/9 26/9 34/7 42/23	111/22 112/4 119/16	media [4] 9/25 119/4
lived [1] 50/10	26/20 52/4	46/24 50/22 57/8	154/11	139/23 139/25
lives [13] 7/1 14/22	low [1] 100/19	57/19 58/17 70/12	may [63] 2/24 7/10	medical [11] 8/5
14/24 15/13 17/4 17/8	lower [8] 88/2 90/8	71/19 72/22 155/5	9/23 11/15 12/4 12/15	11/19 20/25 22/2 23/2
18/17 19/4 25/17	91/8 92/12 93/24	making world [1]	18/20 27/25 29/16	23/16 28/22 40/15
26/19 35/12 51/11	101/4 101/7 131/6	71/19	30/6 32/5 32/25 33/10	40/16 77/8 77/10
52/21	lower/middle [1]	malicious [4] 111/1	33/15 33/20 33/23	medicine [4] 22/5
local [37] 4/3 4/5 4/8	131/6	111/14 111/18 112/23	36/14 39/23 45/7 53/2	76/24 79/5 97/2
4/9 16/10 19/12 19/14	luck [1] 98/19	mammal [2] 88/15	56/20 63/19 66/8	medicines [2] 22/1
31/22 31/23 31/24	lunchtime [1] 74/25	88/18	68/19 73/23 74/9	22/2
37/25 38/8 38/10	M	manage [2] 19/24	74/25 75/16 77/15	medium [1] 154/5
39/19 40/7 40/21 41/2	machinery [1] 58/20	57/18	81/2 81/9 81/10 82/15	meet [7] 6/7 22/20
41/18 42/17 43/11	made [54] 1/10 9/15	managed [5] 60/7	84/8 86/16 97/12	23/24 37/9 64/17
60/10 60/18 60/19	9/21 12/22 13/13	62/14 62/15 65/24	98/11 99/4 99/19	72/13 169/17
62/3 63/7 63/14 70/23	13/18 16/6 16/17 17/6	168/21	99/21 103/19 108/13	meeting [7] 26/6
71/12 72/9 72/17	17/15 17/24 18/3 28/5	management [6]	112/8 117/12 121/11	48/21 48/23 48/24
72/23 100/3 114/11	39/2 39/22 40/6 40/8	42/13 43/6 43/8 43/10	121/11 121/19 124/20	59/6 78/19 169/19
115/22 116/5 129/25	40/20 43/23 44/6	56/10 69/24	129/5 134/4 135/1	meetings [5] 10/19
130/1	46/21 52/6 53/19 59/2	managerial [1] 36/24	139/4 139/7 148/22	11/3 39/9 62/20 62/24
localised [1] 62/5	59/5 60/1 60/16 62/11	managing [2] 58/3	151/13 158/11 166/9	member [10] 77/11
locally [2] 115/24	67/2 67/16 67/17	59/16	166/16 166/18 174/14	77/21 79/5 141/21
127/25	68/15 68/22 69/8	mandatory [1] 46/22	175/11 177/10 177/16	146/23 147/13 147/20
lockdown [3] 4/16	69/22 71/9 80/7 89/20	manpower [1] 126/3	maybe [5] 33/14	171/23 172/13 172/15
6/25 17/16	110/5 112/20 120/10	manual [1] 59/12	102/14 127/2 149/13	members [2] 8/7
logistic [1] 125/24	120/15 129/16 146/7	manufacture [1] 13/8	155/15	124/16
London [1] 76/24	147/1 149/3 152/12	manufacturing [1]	McMahon [2] 48/2	membership [4]
		22/4	48/4	59/22 103/23 141/18

M	137/6 144/2 147/23 152/13 155/25 157/16 158/12 165/11 168/5 172/20	modern [2] 35/24 97/1	84/20	178/4
membership... [1] 141/19	migration [1] 82/20	modernised [1] 70/17	most [26] 9/2 10/14 10/20 16/21 19/8 20/15 33/8 38/16 53/2	Ms [3] 15/4 15/6 179/12
memory [1] 122/7	mild [2] 90/13 94/20	modified [1] 175/3	61/2 61/11 64/19 76/21 78/6 78/10 78/20 78/24 79/13 81/22 87/5 87/6 98/13 107/24 126/4 162/19 164/22	Ms Scolding [1] 15/4
mental [5] 5/14 15/14 16/14 17/1 18/18	Miles [3] 170/1 170/3 173/8	modular [1] 50/15	81/22 87/5 87/6 98/13 107/24 126/4 162/19 164/22	much [56] 2/6 2/20 2/22 3/4 5/9 6/10 18/13 26/13 27/11 27/18 31/6 34/12 34/15 42/2 45/12 46/13 51/20 54/22 73/20 74/2 74/17 78/22 82/11 88/2 89/19 90/7 90/22 98/23 100/3 101/4 101/7 101/10 103/16 105/23 115/14 115/14 115/14 117/10 117/18 132/9 132/14 133/10 133/11 147/25 151/8 151/15 152/20 154/3 155/3 158/17 166/4 176/15 178/2 178/4 178/8 178/9
mention [4] 39/23 42/12 43/5 49/3	Miles Carroll [3] 170/1 170/3 173/8	module [20] 1/15 1/17 4/18 20/16 26/23 27/3 28/9 32/7 47/24 48/5 50/5 50/16 55/16 55/22 64/18 65/14 66/1 73/17 137/1 151/15	mostly [2] 68/24 107/5	multi [3] 38/4 61/12 116/18
mentioned [9] 18/19 84/1 103/21 131/13 137/4 138/7 142/18 173/14 173/20	milestone [1] 1/14	Module 1 [11] 1/15 27/3 28/9 32/7 50/5 55/16 55/22 64/18 65/14 66/1 73/17	mounted [1] 13/3	multi-agency [1] 38/4
mere [1] 150/8	million [5] 24/6 92/12 92/13 109/21 110/4	Module 2 [2] 137/1 151/15	mount [1] 13/3	multi-sectoral [1] 116/18
merits [1] 33/6	mind [6] 12/4 55/10 97/8 103/2 105/21 167/11	Module 2 [2] 137/1 151/15	mounted [1] 115/15	multidisciplinary [1] 132/5
MERS [20] 90/17 91/1 91/11 91/13 91/17 91/19 91/24 94/7 100/1 100/3 100/11 100/13 100/22 104/6 121/9 121/13 133/7 157/14 168/9 172/2	minded [1] 20/11	Module 2 [2] 137/1 151/15	mouth [1] 111/6	multiple [3] 57/24 59/4 118/18
MERS CoV [1] 90/17	minds [1] 9/25	modules [1] 2/16	move [3] 46/4 46/5 114/14	multiplication [1] 83/21
message [1] 174/21	minimum [1] 131/7	moment [10] 83/20 87/23 89/7 97/7 97/9 98/21 98/22 130/2 142/21 165/4	moved [2] 50/8 65/6	multiregional [1] 59/18
met [3] 37/11 70/22 169/24	Minister [17] 7/22 28/11 37/13 37/13 47/13 47/13 48/20 53/4 56/1 56/24 56/25 57/1 57/3 58/14 59/9 73/9 73/11	moments [1] 167/7	movement [2] 82/7 82/25	must [17] 10/14 16/20 22/18 23/9 23/12 23/18 24/23 25/10 51/9 55/1 59/13 101/18 111/19 125/18 140/8 152/24 174/13
method [1] 103/1	ministerial [2] 47/14 56/22	Monday [1] 153/9	moving [2] 50/14 165/13	my [57] 1/9 1/19 2/4 6/14 15/1 15/7 18/8 18/25 26/17 32/25 33/8 34/8 34/20 34/22 35/1 43/16 44/25 45/9 45/10 45/20 46/2 46/14 46/15 48/4 48/10 48/15 51/5 51/18 51/18 51/24 51/25 52/2 53/15 56/13 62/25 71/7 74/3 74/9 75/16 93/13 98/18 98/22 101/21 131/15 132/13 132/25 136/25 138/22 139/4 145/21 146/2 166/2 166/5 166/25 170/20 178/6 178/12
methodology [1] 68/2	ministers [14] 9/5 19/3 28/10 28/11 32/22 38/19 48/11 48/19 48/25 56/2 56/23 58/4 58/15 64/1	money [2] 20/24 58/2	Mr [44] 1/6 1/8 6/11 6/13 15/3 15/8 26/14 26/16 27/8 31/2 34/16 34/19 36/5 42/19 45/17 45/19 45/25 51/20 51/21 51/23 51/25 55/16 56/15 61/4 73/21 74/8 76/5 93/11 98/18 132/17 166/13 166/19 166/22 166/23 175/5 178/4 178/5 179/4 179/8 179/15 179/19 179/23 180/2 180/10	multi-agency [1] 38/4
methods [2] 91/5 118/2	minority [2] 124/12 150/20	monitoring [2] 57/12 139/10	Mr Bowie [2] 1/6 42/19	multi-sectoral [1] 116/18
metric [2] 129/9 129/12	minutes [1] 9/20	monopoly [1] 9/9	MR BOWIE KC [2] 1/8 179/4	multidisciplinary [1] 132/5
metrics [2] 128/6 176/10	mispronounce [1] 73/24	months [6] 2/12 10/20 17/9 23/11 23/22 120/18	Mr Harland [1] 51/25	multiple [3] 57/24 59/4 118/18
microbe [1] 83/15	mispronounced [1] 73/22	more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3	Mr Hill [2] 6/11 15/3	multi-agency [1] 38/4
microbiological [1] 131/25	mission [3] 11/21 14/8 153/14	Monday [1] 153/9	Mr Keith [11] 31/2 36/5 55/16 56/15 61/4 74/8 76/5 93/11 132/17 175/5 178/5	multi-agency [1] 38/4
microbiologists [1] 131/19	mistaken [1] 156/13	money [2] 20/24 58/2	Mr Keith's [1] 27/8	multi-agency [1] 38/4
microorganism [2] 83/22 85/22	mistakes [1] 50/19	monitoring [2] 57/12 139/10	Mr Kinnier [1] 26/14	multi-agency [1] 38/4
microorganisms [3] 96/18 96/20 96/22	Mitchell [3] 34/16 34/19 179/19	monopoly [1] 9/9	MR KINNIER KC [2] 26/16 179/15	multi-agency [1] 38/4
microphone [1] 46/11	mitigated [1] 142/11	months [6] 2/12 10/20 17/9 23/11 23/22 120/18	Mr Mitchell [1] 34/16	multi-agency [1] 38/4
middle [10] 41/14 89/15 90/2 90/18 91/1 92/11 98/12 98/14 121/24 131/6	mitigating [2] 52/23 58/2	more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3	MR MITCHELL KC [2] 34/19 179/19	multi-agency [1] 38/4
Middle East [3] 41/14 90/18 91/1	mitigations [1] 171/7	Monday [1] 153/9	Mr Sharpe [3] 45/17 45/25 51/20	multi-agency [1] 38/4
might [36] 35/5 37/23 61/15 63/20 84/11 95/22 102/20 103/17 104/1 104/8 104/10 104/13 104/13 105/14 106/22 106/23 107/2 111/7 112/6 114/9 117/5 124/1 124/1 129/16 131/21 135/3	mixture [1] 108/4	money [2] 20/24 58/2	MR SHARPE KC [2] 45/19 179/23	multi-agency [1] 38/4
	mobilisation [1] 20/7	monitoring [2] 57/12 139/10	Mr Stein KC [1] 15/8	multi-agency [1] 38/4
	mobilised [1] 23/23	monopoly [1] 9/9	Mr Strachan [2] 51/21 73/21	multi-agency [1] 38/4
	Mobility [1] 58/10	months [6] 2/12 10/20 17/9 23/11 23/22 120/18	MR STRACHAN KC [2] 51/23 180/2	multi-agency [1] 38/4
	model [6] 47/1 58/25 144/23 144/25 144/25 164/17	more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3	Mr Weatherby [4] 166/13 166/19 166/22	multi-agency [1] 38/4
	modelled [2] 144/11 144/22	moments [1] 167/7		multi-agency [1] 38/4
	modelling [2] 138/14 138/18	Monday [1] 153/9		multi-agency [1] 38/4
	moderated [1] 140/10	money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4
		monopoly [1] 9/9		multi-agency [1] 38/4
		months [6] 2/12 10/20 17/9 23/11 23/22 120/18		multi-agency [1] 38/4
		more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3		multi-agency [1] 38/4
		Monday [1] 153/9		multi-agency [1] 38/4
		money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4
		monopoly [1] 9/9		multi-agency [1] 38/4
		months [6] 2/12 10/20 17/9 23/11 23/22 120/18		multi-agency [1] 38/4
		more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3		multi-agency [1] 38/4
		Monday [1] 153/9		multi-agency [1] 38/4
		money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4
		monopoly [1] 9/9		multi-agency [1] 38/4
		months [6] 2/12 10/20 17/9 23/11 23/22 120/18		multi-agency [1] 38/4
		more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3		multi-agency [1] 38/4
		Monday [1] 153/9		multi-agency [1] 38/4
		money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4
		monopoly [1] 9/9		multi-agency [1] 38/4
		months [6] 2/12 10/20 17/9 23/11 23/22 120/18		multi-agency [1] 38/4
		more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3		multi-agency [1] 38/4
		Monday [1] 153/9		multi-agency [1] 38/4
		money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4
		monopoly [1] 9/9		multi-agency [1] 38/4
		months [6] 2/12 10/20 17/9 23/11 23/22 120/18		multi-agency [1] 38/4
		more [74] 17/4 18/17 19/4 22/16 23/15 25/17 26/20 30/22 31/6 34/4 34/12 35/18 44/19 49/10 62/5 65/3 67/3 69/16 74/21 81/14 82/6 82/6 82/7 83/2 83/7 84/15 89/14 89/19 91/7 91/10 92/15 93/20 94/22 98/4 101/5 103/2 103/7 103/17 105/19 106/18 114/18 114/18 114/23 114/23 115/9 115/10 115/12 115/15 115/16 116/17 117/10 117/21 117/21 118/18 122/23 126/22 129/8 129/15 132/23 137/1 146/22 148/12 148/25 150/6 150/8 155/3 161/17 163/18 170/12 174/2 174/12 174/16 174/17 175/3		multi-agency [1] 38/4
		Monday [1] 153/9		multi-agency [1] 38/4
		money [2] 20/24 58/2		multi-agency [1] 38/4
		monitoring [2] 57/12 139/10		multi-agency [1] 38/4

M	need [53] 13/16 13/18 17/11 21/17 21/22 22/19 22/24 23/21 24/20 24/24 25/18 46/10 55/8 59/5 59/20 66/21 70/10 71/20 75/1 75/2 81/14 86/24 93/10 105/3 105/21 108/11 118/18 119/8 119/8 121/9 124/23 142/4 142/9 142/15 142/22 149/16 149/23 151/11 152/7 155/16 158/24 158/24 159/13 160/9 160/12 163/6 163/15 163/18 163/18 163/19 171/10 172/21 176/11	NHS Scotland's [1] 41/13 nicely [1] 133/5 Nicholson [1] 34/23 nightmare [1] 16/4 nine [4] 46/19 46/23 55/21 72/19 no [31] 15/2 17/13 19/2 24/19 32/14 32/21 42/9 48/11 50/12 52/21 59/13 59/21 61/12 75/14 89/17 92/7 93/8 94/17 97/12 100/21 138/24 138/25 140/22 142/15 147/22 153/16 153/17 156/14 161/16 161/16 178/6 no-deal [1] 42/9 nodding [2] 152/17 152/20 nomenclature [1] 88/19 non [7] 10/16 19/19 106/13 110/21 143/6 144/18 145/23 non-communicable [2] 144/18 145/23 non-emergency [1] 10/16 non-European [1] 143/6 non-symptomatic [1] 106/13 non-zero [1] 110/21 none [2] 26/19 133/3 nor [2] 10/3 10/6 normal [1] 13/10 north [1] 38/6 Northern [13] 45/18 46/20 46/21 47/1 47/15 47/21 47/24 48/9 48/12 49/9 49/16 51/13 179/22 Northern Ireland [11] 46/20 46/21 47/1 47/15 47/21 47/24 48/9 48/12 49/9 49/16 51/13 Norway [1] 141/20 not [169] 2/24 3/1 4/19 6/6 6/20 7/13 8/6 8/7 8/18 9/8 9/8 9/8 9/10 9/21 9/21 10/4 10/14 12/6 12/12 12/13 12/21 13/23 13/23 13/24 14/14 14/17 14/23 16/3 18/1 18/8 18/10 18/20 18/25 21/12 22/10 25/5 25/9 27/10 29/1 29/4 29/6 33/15 36/18 41/22 44/5 44/8 45/7 49/23 50/3 50/7 51/15	54/20 57/20 58/23 62/25 66/7 73/23 73/23 74/3 75/20 82/3 82/4 83/7 83/8 84/17 91/2 91/4 91/4 91/6 92/5 92/20 93/6 93/7 94/14 94/15 94/15 97/18 98/10 102/13 102/15 102/16 102/20 102/23 104/11 104/20 105/13 106/1 106/1 106/3 106/23 107/1 110/14 111/13 111/23 113/4 114/6 114/7 114/10 115/20 116/15 117/4 117/7 119/3 119/14 119/23 120/25 121/5 121/11 121/17 121/17 122/10 122/15 124/1 127/4 128/19 128/22 130/12 130/15 131/22 132/5 132/7 134/4 135/9 135/14 141/12 142/11 143/11 143/11 143/16 143/23 146/20 147/6 147/19 148/4 151/2 151/8 151/12 152/19 155/15 155/20 156/12 156/14 156/25 157/8 158/25 159/3 159/5 159/23 160/20 161/4 161/12 161/17 161/17 161/18 162/24 163/8 172/23 173/21 173/23 174/1 176/3 176/6 176/20 177/3 177/4 177/10 177/12 177/13 177/25 notable [1] 79/17 note [9] 4/12 8/17 48/10 60/3 127/2 141/24 147/3 160/15 176/3 noted [5] 49/4 66/1 66/9 132/19 132/21 nothing [3] 16/18 114/23 126/20 notice [1] 16/17 notified [1] 89/12 notifying [1] 119/6 notion [1] 123/18 Nottingham [1] 157/16 November [1] 5/17 November 2022 [1] 5/17 now [47] 1/22 2/12 2/22 3/9 6/11 11/6 15/4 18/7 34/16 41/21 44/11 45/13 45/17 46/10 54/3 70/6 70/15 77/9 81/22 82/6 84/16 86/3 95/11 102/7 103/11 107/17 111/13	112/5 113/1 116/24 118/9 121/11 127/9 132/16 139/16 144/6 145/2 145/14 145/17 146/23 148/13 152/24 166/20 168/8 171/4 173/14 174/15 Nuanced [1] 126/23 number [42] 2/16 5/3 5/5 5/7 11/13 19/10 24/9 28/16 49/7 56/3 67/1 68/4 81/14 87/8 94/1 97/25 99/9 99/15 100/23 100/24 110/15 113/3 113/4 118/2 118/5 118/6 120/3 121/1 126/17 126/19 129/10 130/16 131/12 133/12 141/1 149/6 152/9 152/12 153/4 154/9 160/7 163/8 number 3 [1] 120/3 numbers [4] 23/3 100/19 107/6 169/2 numerous [1] 26/5 nursing [1] 3/20 nurtured [1] 140/18
N	name [3] 73/22 73/25 166/25 names [1] 86/17 narratives [1] 2/15 narrow [1] 177/12 narrower [1] 152/14 narrowly [2] 165/11 176/25 nation [6] 15/15 18/19 44/7 142/1 142/2 142/23 nation's [2] 5/10 21/14 national [58] 3/12 3/17 4/6 5/19 9/13 13/4 13/5 21/1 27/19 39/2 40/6 40/20 40/23 53/14 57/9 59/18 60/10 61/2 61/5 61/6 61/7 61/8 61/9 61/13 61/19 61/21 61/25 62/2 62/3 62/5 62/10 62/13 62/14 62/23 63/12 63/13 64/20 68/2 69/2 70/13 70/23 71/6 72/4 72/18 73/3 73/4 73/10 118/24 118/25 133/24 137/4 138/7 142/18 142/20 159/22 160/1 165/7 172/25 nations [7] 3/24 27/12 28/3 34/2 36/13 40/8 40/16 natural [1] 96/17 naturally [1] 112/18 nature [11] 26/2 33/25 37/23 61/16 96/1 106/2 123/3 135/24 137/21 165/19 177/12 navigate [1] 3/25 neatly [1] 57/20 necessarily [6] 18/2 45/2 81/10 107/11 132/5 132/7 necessary [6] 14/15 18/5 28/1 32/3 86/3 132/1	needed [7] 16/24 22/13 35/20 58/25 62/20 141/25 163/22 needn't [1] 155/7 needs [9] 23/24 26/1 51/1 64/5 64/17 134/15 149/17 161/24 165/1 negative [1] 17/21 negotiations [1] 146/11 neighbouring [2] 158/4 167/8 NEPNEI [1] 160/2 NERVTAG [3] 136/25 137/23 170/1 network [7] 8/25 79/18 79/19 133/20 134/21 139/18 139/22 networks [1] 141/1 neuraminidase [1] 88/9 never [5] 10/3 15/17 16/6 64/15 128/2 nevertheless [1] 80/22 new [35] 5/17 18/14 23/6 24/24 47/25 65/21 69/25 70/18 71/5 71/7 71/18 71/21 72/13 81/6 82/8 82/9 106/15 130/10 130/11 135/4 135/23 136/24 137/5 137/9 137/24 138/8 146/11 149/16 149/17 152/24 157/9 160/15 160/22 161/22 165/7 next [10] 24/21 66/14 87/21 116/10 121/22 123/20 133/15 138/13 176/4 176/4 NHS [11] 13/10 19/6 20/2 22/20 28/20 31/15 37/7 41/13 43/10 43/11 54/12	no-deal [1] 42/9 nodding [2] 152/17 152/20 nomenclature [1] 88/19 non [7] 10/16 19/19 106/13 110/21 143/6 144/18 145/23 non-communicable [2] 144/18 145/23 non-emergency [1] 10/16 non-European [1] 143/6 non-symptomatic [1] 106/13 non-zero [1] 110/21 none [2] 26/19 133/3 nor [2] 10/3 10/6 normal [1] 13/10 north [1] 38/6 Northern [13] 45/18 46/20 46/21 47/1 47/15 47/21 47/24 48/9 48/12 49/9 49/16 51/13 179/22 Northern Ireland [11] 46/20 46/21 47/1 47/15 47/21 47/24 48/9 48/12 49/9 49/16 51/13 Norway [1] 141/20 not [169] 2/24 3/1 4/19 6/6 6/20 7/13 8/6 8/7 8/18 9/8 9/8 9/8 9/10 9/21 9/21 10/4 10/14 12/6 12/12 12/13 12/21 13/23 13/23 13/24 14/14 14/17 14/23 16/3 18/1 18/8 18/10 18/20 18/25 21/12 22/10 25/5 25/9 27/10 29/1 29/4 29/6 33/15 36/18 41/22 44/5 44/8 45/7 49/23 50/3 50/7 51/15	112/5 113/1 116/24 118/9 121/11 127/9 132/16 139/16 144/6 145/2 145/14 145/17 146/23 148/13 152/24 166/20 168/8 171/4 173/14 174/15 Nuanced [1] 126/23 number [42] 2/16 5/3 5/5 5/7 11/13 19/10 24/9 28/16 49/7 56/3 67/1 68/4 81/14 87/8 94/1 97/25 99/9 99/15 100/23 100/24 110/15 113/3 113/4 118/2 118/5 118/6 120/3 121/1 126/17 126/19 129/10 130/16 131/12 133/12 141/1 149/6 152/9 152/12 153/4 154/9 160/7 163/8 number 3 [1] 120/3 numbers [4] 23/3 100/19 107/6 169/2 numerous [1] 26/5 nursing [1] 3/20 nurtured [1] 140/18
			O	
			o'clock [2] 178/13 178/15 obesity [1] 23/7 objective [1] 66/11 objectively [1] 53/7 objectives [1] 3/19 obligations [3] 147/13 147/15 147/15 observations [2] 12/5 14/7 observe [1] 11/3 observers [1] 39/24 obvious [4] 20/22 96/4 129/23 131/18 obviously [13] 86/13 102/15 104/16 112/1 112/5 112/22 114/13 115/19 130/6 141/24 142/24 150/18 155/19 occasion [2] 9/13 166/18 occupancy [1] 22/21 occur [7] 61/15 82/24 83/2 93/22 136/4 153/16 157/7 occurred [4] 82/19 83/7 106/9 107/25 occurrence [1] 121/13 occurring [8] 41/1 112/18 114/21 116/9 123/11 124/24 139/17 140/4 October [1] 70/15 October 2021 [1]	

O	64/19 75/21 76/2 77/11 77/15 77/18 82/15 83/17 90/13 91/14 94/5 95/9 98/2 98/6 99/8 99/19 104/8 104/10 104/19 106/21 111/9 112/9 113/11 116/1 116/11 116/17 116/18 116/22 118/16 119/8 120/14 124/3 126/2 126/19 129/8 131/2 131/4 131/21 133/4 134/4 135/1 135/5 135/14 135/16 135/16 135/18 136/4 136/6 136/12 136/13 138/19 141/9 144/17 144/19 149/9 150/11 159/23 160/7 160/18 165/1 174/2 174/7 176/23 177/17 177/20	operationalising [1] 103/12 operations [3] 13/11 20/5 58/3 opinion [3] 145/12 145/21 149/3 opinions [2] 137/15 155/2 opportunity [5] 1/16 45/1 46/15 117/22 166/7 opposed [1] 107/21 opposite [1] 17/18 optimally [1] 64/15 optimism [1] 11/4 options [2] 17/13 17/20 or [215] oral [4] 1/24 24/15 28/16 56/4 order [11] 7/7 9/14 11/3 47/6 61/17 72/12 72/22 86/16 86/19 95/5 164/2 ordinary [2] 26/1 122/1 ordinate [5] 37/9 38/3 57/18 63/19 161/21 ordinated [5] 8/10 65/18 132/4 137/19 141/2 ordinating [6] 57/10 60/19 141/21 142/5 142/5 142/7 ordination [11] 38/4 39/13 47/5 47/10 59/19 62/19 146/6 146/17 148/11 153/24 161/16 organisation [23] 2/14 3/10 3/12 3/17 4/13 4/22 5/4 5/6 7/19 20/7 40/4 77/12 77/16 78/1 79/15 89/13 103/16 103/23 122/25 125/6 127/10 133/14 170/21 organisational [2] 19/9 51/2 organisations [11] 9/5 10/11 19/13 37/22 38/1 38/12 39/18 40/13 41/3 41/18 60/8 organised [1] 171/24 organising [1] 64/14 organism [1] 98/13 orientated [1] 58/23 origin [6] 96/12 97/5 110/18 110/25 112/10 140/15 original [1] 5/16 originally [3] 81/23 88/15 100/3	originating [1] 110/22 origins [1] 88/23 other [76] 2/15 3/16 3/24 9/12 9/20 10/10 10/11 11/5 18/21 21/14 22/3 22/5 25/6 25/24 30/20 36/12 36/19 40/16 41/16 42/5 54/18 57/13 60/17 60/21 62/22 62/25 63/3 64/3 64/5 69/11 69/17 69/24 70/24 73/17 75/21 83/8 85/16 86/3 89/19 90/2 91/18 95/23 100/9 105/14 107/10 107/22 110/11 112/23 116/8 117/7 117/19 119/8 122/10 131/13 133/22 133/23 141/20 142/19 142/25 143/6 143/22 144/10 144/11 145/1 149/21 150/14 154/11 158/23 159/17 161/1 161/1 161/10 161/13 161/22 167/10 177/17 other's [1] 39/12 others [14] 4/2 7/2 11/19 13/16 17/18 20/11 29/17 35/19 47/2 56/24 63/14 143/23 149/7 170/16 otherwise [3] 35/14 106/24 168/5 ought [8] 108/7 124/18 135/6 136/10 136/11 136/11 140/17 149/8 our [32] 1/15 2/25 3/7 9/16 15/1 15/10 19/3 19/6 19/8 20/11 20/21 23/5 23/23 24/4 24/5 24/10 53/16 53/19 53/25 54/5 54/21 66/20 92/8 93/23 98/19 104/20 112/21 120/1 120/9 128/2 153/15 165/3 ours [1] 158/21 ourselves [6] 84/3 104/16 111/16 112/12 155/7 168/12 out [63] 5/12 5/19 11/9 18/25 20/21 29/25 30/13 31/2 36/15 48/25 54/14 55/23 56/18 60/17 60/23 62/1 62/19 63/2 63/11 67/10 71/15 71/16 71/18 76/19 76/21 78/20 80/19 81/13 81/19 86/3	86/12 96/10 100/10 103/19 104/13 104/18 105/14 112/16 113/6 113/9 114/18 115/10 115/23 117/21 118/7 121/20 122/1 133/5 134/17 148/7 148/10 152/25 153/12 153/19 154/4 154/9 154/23 157/24 163/3 172/2 172/9 172/13 173/2 outbreak [41] 20/23 41/14 79/19 81/5 98/3 98/4 102/14 111/6 111/10 113/2 113/19 114/2 114/5 114/12 116/2 116/3 118/23 122/2 122/21 123/1 123/13 123/15 123/21 124/1 124/22 125/9 125/15 126/11 127/6 129/25 130/19 133/3 140/13 147/17 149/21 151/24 157/14 158/19 158/25 162/20 169/20 outbreaks [18] 47/12 76/9 76/9 91/19 98/2 112/2 114/20 116/9 121/1 124/13 124/24 126/6 126/7 126/7 127/12 131/2 147/14 168/23 outcome [2] 136/18 169/9 outcomes [3] 17/25 153/14 168/4 outlets [1] 139/25 outline [1] 7/14 outlined [1] 116/25 outputs [1] 12/20 outset [3] 1/12 28/5 46/7 outside [4] 8/14 58/16 69/15 159/19 outward [1] 51/4 over [24] 2/3 4/25 5/5 10/19 10/20 19/21 24/6 36/6 43/18 57/15 61/12 64/18 78/23 80/5 85/3 86/18 96/15 105/13 110/3 114/10 115/20 133/15 153/24 159/21 over-slavishly [1] 105/13 overall [7] 58/12 59/10 64/8 99/13 100/18 100/23 177/14 overarching [4] 32/8 60/13 137/20 160/14 overlaps [1] 135/23 overlooked [1] 112/21 overprepared [1]
----------	--	---	---	--

O	page 31 [1] 148/6 page 32 [2] 149/4 156/3 page 33 [3] 156/4 156/9 156/12 page 35 [1] 164/7 page 5 [2] 81/1 95/20 page 7 [1] 101/25 page 8 [1] 153/11 pages [3] 79/23 120/8 120/14 pages 3 [1] 79/23 pagination [1] 156/17 pain [1] 15/21 pan [1] 142/16 pan-European [1] 142/16 pandemic [184] pandemics [22] 7/9 21/14 21/23 24/23 44/4 66/6 76/10 80/9 81/7 81/9 81/15 86/9 86/13 89/20 95/5 95/17 99/5 107/11 107/21 108/6 120/24 122/19 panel [17] 119/10 119/12 119/19 120/4 120/10 120/14 121/5 121/7 122/18 123/12 137/5 138/7 148/8 160/1 160/3 160/6 175/10 Panel's [1] 123/9 panels [1] 61/22 paper [1] 153/10 papers [3] 9/20 11/13 78/23 paragraph [24] 83/9 95/21 96/10 102/4 108/15 109/18 109/25 110/20 113/6 116/11 129/3 129/9 131/17 133/18 139/12 141/6 144/4 146/4 149/3 156/15 156/19 164/9 167/5 176/9 paragraph 16 [2] 108/15 109/18 paragraph 18 [1] 110/20 paragraph 2 [1] 95/21 paragraph 22 [1] 113/6 paragraph 27 [1] 129/3 paragraph 29 [1] 131/17 paragraph 37 [1] 133/18 paragraph 4 [1] 96/10	paragraph 5 [1] 83/9 paragraph 58 [1] 139/12 paragraph 76 [1] 141/6 paragraph 79 [1] 144/4 paragraph 8 [1] 102/4 paragraph 83 [1] 146/4 paragraph 87 [1] 149/3 paragraph 88 [3] 156/15 156/19 167/5 paragraph 95 [1] 164/9 paragraphs [1] 81/13 parallel [1] 142/19 parallels [1] 122/8 Parliament [5] 9/18 42/7 69/15 72/1 152/10 parliamentary [3] 29/19 53/13 152/10 part [22] 11/22 25/10 25/13 28/6 33/2 43/24 61/4 67/5 77/17 87/5 96/5 116/8 133/12 140/1 142/15 143/2 145/3 145/5 145/7 149/21 152/14 171/21 participants [9] 1/4 1/21 27/5 73/17 74/7 77/19 157/21 157/23 166/6 participate [2] 1/16 8/12 participated [4] 40/18 41/9 128/4 128/5 participating [2] 2/3 7/6 particular [21] 3/2 9/25 11/16 15/24 21/11 23/25 30/23 30/25 32/13 41/7 103/16 103/25 108/23 111/25 134/2 138/20 139/9 144/12 150/7 152/13 166/9 particularly [17] 17/9 18/6 30/1 50/22 76/15 82/2 85/16 97/2 109/4 116/21 131/10 133/7 142/6 149/15 149/25 162/11 168/10 parties [4] 39/10 46/22 70/25 172/10 partners [2] 38/17 38/20 partnership [7] 36/11 38/2 38/5 38/8 38/15 39/9 39/10	partnerships [5] 38/6 38/8 38/10 38/10 38/11 parts [5] 53/25 68/20 97/1 120/25 153/6 party [3] 69/12 143/5 172/19 pass [1] 159/21 passage [1] 155/9 passed [1] 107/4 past [12] 19/21 24/1 28/12 93/10 102/25 110/24 111/4 115/21 123/16 157/11 170/12 177/24 pathogen [19] 84/17 84/21 85/19 85/21 88/3 98/6 98/16 107/20 108/21 108/23 109/12 111/1 113/2 115/24 126/7 136/19 165/20 171/6 173/18 pathogenic [4] 78/6 85/20 86/5 86/17 pathogens [23] 82/4 84/4 86/1 97/5 97/23 109/1 109/3 112/6 133/13 133/18 133/19 133/22 135/2 136/9 136/16 137/3 137/9 138/5 161/2 161/10 161/23 170/12 172/17 patient [4] 91/21 91/22 91/22 98/20 Patrick [2] 8/4 11/20 Patrick's [2] 9/19 11/22 pattern [1] 63/23 Pause [7] 46/6 46/9 46/12 86/7 153/7 156/16 175/13 paused [2] 18/20 32/20 pausing [1] 150/1 pays [1] 52/9 peacetime [1] 53/15 people [43] 2/10 6/6 6/25 15/24 17/4 17/16 18/15 19/2 19/4 19/21 25/16 31/9 35/3 35/9 35/15 50/6 50/23 50/24 57/5 65/4 82/8 89/15 92/24 93/1 100/9 100/9 106/21 107/7 109/21 110/4 121/25 122/5 129/22 129/24 130/6 139/18 139/22 139/22 157/22 159/7 162/19 164/23 170/13 per [4] 109/21 129/11 131/3 131/4 perception [1] 33/11 perceptions [1] 73/2	perfect [1] 131/10 performance [2] 72/2 176/7 performed [3] 22/8 48/13 140/20 perhaps [20] 7/13 46/5 74/21 81/15 84/10 103/2 106/1 107/20 140/18 148/25 149/15 151/13 153/11 155/25 159/23 160/10 162/9 166/17 167/14 177/12 period [18] 4/18 20/6 20/18 42/3 47/23 48/6 48/14 48/18 55/17 61/12 64/18 64/23 65/21 65/24 66/1 123/6 174/7 174/10 periodically [1] 62/11 periods [2] 15/20 174/4 permanent [5] 8/6 47/22 47/25 48/2 70/1 Permanent Secretary [3] 47/22 47/25 48/2 permission [4] 75/16 139/5 166/17 166/19 person [3] 16/8 16/20 20/8 personal [6] 14/22 14/23 17/2 52/5 55/22 145/21 personnel [1] 42/11 persons [1] 30/21 perspective [2] 2/8 50/9 Pete [1] 167/1 Pete Weatherby [1] 167/1 Peter [1] 169/25 pharmaceuticals [1] 13/3 PHE [2] 170/1 171/19 PHEIC [2] 125/7 126/14 PHEICs [1] 127/9 phenomenon [1] 96/18 PHS [24] 1/11 1/21 1/25 2/2 2/6 2/11 2/12 2/19 2/22 3/4 3/8 3/9 3/23 3/24 4/2 4/7 4/10 4/12 4/19 4/24 4/25 5/11 5/25 6/5 PHS's [4] 2/8 5/2 5/19 5/23 physical [4] 15/14 16/14 18/19 70/18 Physicians [1] 77/7 picture [4] 117/17 117/18 165/24 177/3 piece [1] 140/7 pieces [1] 22/5
----------	--	---	--	---

P	113/8 117/13 120/2 120/13 122/17 129/2 129/14 132/16 133/11 133/15 139/5 139/11 141/6 141/16 153/3 153/24 154/2 156/9 175/12 176/5 178/14 178/15	position [5] 24/5 71/22 100/25 117/23 135/12 positioned [1] 64/15 positions [1] 55/20 possibility [6] 104/2 105/12 109/7 121/21 123/6 134/8 possible [14] 42/9 50/17 53/7 55/11 61/14 65/11 83/8 88/23 114/12 115/2 117/10 134/10 165/22 174/11 post [1] 143/25 posted [1] 140/11 potential [13] 9/23 43/19 63/17 81/16 81/20 83/15 97/14 102/6 103/2 113/16 120/24 121/3 161/2 potentially [3] 103/10 109/25 117/11 poverty [1] 5/14 power [1] 6/1 powerfully [2] 15/22 26/21 PPE [4] 22/3 22/4 23/15 30/2 practical [7] 43/15 68/10 104/14 116/23 150/25 164/2 164/20 practice [11] 10/8 14/10 40/4 50/18 50/19 63/16 71/22 71/23 143/11 159/19 162/24 practices [1] 154/13 practitioners [1] 19/16 pre [1] 23/8 pre-existing [1] 23/8 precaution [1] 123/10 precautionary [7] 122/20 123/19 124/2 124/11 125/3 125/13 125/20 preceded [1] 80/20 preceding [3] 13/13 64/23 89/19 precise [4] 104/16 109/23 135/24 148/25 precisely [1] 20/5 predict [3] 106/14 113/17 176/6 predicted [1] 109/21 prediction [1] 110/4 predictive [1] 176/10 predominantly [2] 19/3 112/16 preferable [1] 170/22 preference [1] 145/20	prejudice [1] 67/9 preliminary [1] 67/14 premised [1] 157/12 preparation [12] 25/7 27/4 32/15 39/23 39/25 41/7 45/4 54/24 62/24 74/17 135/21 135/22 preparations [10] 32/11 32/18 32/21 39/22 40/6 40/7 41/16 42/8 42/9 120/16 prepare [14] 14/15 21/13 41/3 53/10 55/9 62/22 80/8 102/23 107/11 114/1 114/3 123/14 135/17 135/18 prepared [24] 23/13 24/25 25/6 26/24 27/23 28/3 36/11 37/20 38/24 43/19 44/7 56/7 63/9 66/14 71/10 73/14 75/4 86/10 101/19 106/5 121/6 121/18 147/23 177/20 preparedness [57] 18/6 21/13 23/11 24/12 25/14 26/5 27/10 28/19 28/21 28/25 30/7 31/19 32/3 32/9 34/10 36/3 36/23 39/7 40/10 41/6 41/20 44/1 48/8 60/6 60/12 60/14 60/19 60/25 63/4 65/14 65/16 65/24 66/9 66/21 67/3 67/11 69/20 71/2 73/2 79/9 96/5 102/9 103/9 112/3 115/4 119/11 119/20 120/5 121/15 122/14 148/8 148/13 148/19 175/10 175/22 176/1 176/12 preparing [10] 36/8 39/17 41/24 43/12 44/3 50/3 66/6 102/16 102/24 111/16 prescriptive [1] 135/15 present [7] 12/19 24/24 28/10 28/12 45/23 97/10 161/2 presentation [1] 14/2 presented [1] 26/10 presenting [1] 123/3 Presidency [1] 11/23 president [2] 11/6 77/9 press [3] 80/10 90/12 114/6 pressing [1] 64/19 pressure [3] 5/9 14/21 114/25	presumably [2] 114/21 142/10 presume [1] 126/10 presumed [1] 157/19 pretty [1] 164/5 prevent [5] 5/21 103/18 116/5 123/8 154/7 preventing [2] 151/8 153/21 prevention [2] 102/9 112/1 previous [6] 13/15 20/25 86/9 99/5 120/23 159/20 previously [6] 5/5 10/20 102/15 106/10 107/25 144/2 primarily [9] 33/25 91/13 122/10 127/15 130/2 131/1 131/5 141/23 143/8 Prime [9] 7/22 53/4 56/1 56/24 56/25 57/3 59/9 73/9 73/11 Prime Minister [9] 7/22 53/4 56/1 56/24 56/25 57/3 59/9 73/9 73/11 principal [2] 48/8 60/11 principle [6] 122/20 123/19 125/3 125/14 125/20 131/18 principles [2] 59/12 123/4 prior [4] 40/5 61/6 121/12 121/13 priorities [4] 38/21 57/13 57/16 134/3 prioritisation [4] 77/25 169/12 170/9 170/10 prioritised [1] 133/13 prioritising [1] 103/24 Prioritization [2] 77/22 103/22 priority [12] 44/10 68/4 73/4 80/1 133/21 134/4 134/15 135/16 143/22 170/13 172/1 172/5 private [6] 39/3 43/3 60/9 70/24 71/13 72/11 probable [1] 93/18 probably [10] 84/24 95/9 95/13 98/13 98/15 110/7 111/23 112/7 168/10 169/24 problem [4] 33/13 46/8 113/23 173/23 procedure [1] 128/8
----------	---	--	---	---

P	Program [1] 139/10 programme [7] 3/15 10/6 11/11 63/8 73/4 139/13 165/9 programmes [3] 47/6 47/16 62/17 progression [1] 114/14 prolong [1] 5/21 ProMED [9] 89/13 118/13 139/10 139/13 140/9 140/12 140/16 140/17 140/25 prominence [1] 9/25 promote [4] 5/21 7/23 65/9 154/12 promoting [2] 50/23 57/11 promotion [4] 144/9 144/19 145/17 145/24 promulgated [1] 71/5 pronounced [1] 49/11 pronunciations [1] 74/4 proper [2] 86/19 103/5 properly [3] 53/10 111/16 121/18 properties [5] 102/15 102/17 102/19 102/20 105/17 proportion [6] 87/12 92/23 92/25 94/18 114/22 126/6 proportions [1] 81/5 proposals [4] 33/10 154/9 172/2 172/6 propose [1] 18/4 proposed [3] 33/7 61/20 129/12 proposition [1] 121/23 prospect [1] 99/24 protect [8] 2/10 7/1 16/21 17/8 25/11 35/22 112/12 153/15 protected [2] 54/1 140/18 protecting [3] 3/13 4/20 104/16 Protection [1] 4/22 protocols [3] 43/6 43/14 59/12 provide [18] 7/21 9/7 9/11 11/3 16/17 19/7 19/25 24/6 53/1 55/21 59/20 64/3 69/6 72/8 73/6 75/13 147/12 154/11 provided [14] 9/4 11/9 28/9 30/9 40/12 41/2 45/7 49/4 55/18 65/17 78/24 86/11	87/8 118/16 providers [1] 150/21 provides [3] 8/1 33/5 38/22 providing [4] 18/11 38/19 57/2 72/12 provision [5] 7/23 21/23 23/18 28/21 70/20 provisionally [1] 166/12 proxy [1] 131/9 public [82] 1/7 1/11 1/21 2/23 3/2 3/2 3/11 3/15 3/17 3/22 4/4 4/10 4/20 5/19 6/5 6/22 8/25 9/21 10/1 13/12 16/10 21/18 22/13 34/21 37/1 42/5 42/14 42/18 42/20 43/3 43/6 43/9 43/13 44/13 44/13 44/14 48/9 49/17 51/3 52/10 53/1 54/5 57/24 60/8 61/24 71/11 71/14 73/1 77/1 77/8 78/11 79/11 120/22 121/25 122/5 124/17 125/7 125/15 125/23 126/8 126/21 127/3 127/7 144/5 144/9 144/10 144/12 144/15 144/16 144/20 144/22 145/2 145/4 145/11 145/13 145/17 150/21 171/5 173/1 176/25 177/8 179/3 publication [4] 5/17 71/9 73/8 80/21 publications [2] 69/12 69/21 publicly [2] 5/23 7/5 publique [1] 144/22 publish [2] 80/11 139/5 published [15] 5/11 9/20 11/18 39/18 40/22 43/8 61/6 61/24 68/12 71/3 71/7 75/17 78/23 153/10 154/16 pulls [1] 149/18 purport [1] 14/14 purpose [2] 5/19 112/9 purposes [1] 134/13 purse [1] 42/5 push [1] 114/17 pushing [1] 98/19 put [27] 5/4 15/18 20/17 20/24 33/4 75/20 86/19 92/10 95/19 103/11 105/3 114/17 115/16 121/13 134/17 150/6 152/1	155/7 155/9 166/3 166/10 166/11 166/14 166/19 166/20 175/11 176/15 putting [5] 10/8 54/10 103/1 114/3 172/13 Q quality [4] 13/1 25/19 34/1 51/3 quantifiable [1] 151/17 quantify [1] 110/7 quest [1] 51/15 question [18] 11/24 14/2 26/22 27/1 27/9 27/22 31/3 32/25 48/17 74/23 75/22 95/7 101/21 141/12 141/14 145/20 152/19 160/13 questions [26] 13/12 28/13 28/24 35/19 51/9 68/4 74/15 75/20 76/7 77/15 77/19 77/20 99/8 152/1 152/2 163/22 166/2 166/9 166/20 166/23 167/1 167/4 167/6 178/3 180/8 180/10 quickly [5] 21/4 23/10 23/21 25/3 66/16 quite [16] 35/20 91/11 97/25 105/23 106/10 108/9 124/13 133/5 137/6 141/24 141/25 146/22 147/2 148/22 155/4 175/7	rapidly [5] 13/24 22/20 162/12 162/18 163/23 rate [23] 87/9 87/10 87/12 87/14 88/2 89/17 90/6 90/22 92/5 92/19 92/20 92/23 92/25 93/4 93/14 93/19 93/24 93/25 100/22 101/4 101/7 101/8 101/9 rates [1] 93/2 rather [14] 12/8 21/19 62/7 124/18 141/14 142/24 147/7 152/17 155/14 165/24 174/19 175/18 176/2 176/24 rationalisation [1] 137/11 rationally [1] 17/24 rats [1] 98/15 re [3] 44/16 65/2 150/15 re-assigned [1] 65/2 re-deployed [1] 150/15 re-focusing [1] 44/16 reach [2] 124/7 124/9 reaching [1] 154/20 react [2] 113/5 157/17 reaction [1] 125/10 read [2] 154/3 175/20 readily [3] 36/20 126/9 158/13 readiness [1] 40/19 ready [4] 26/9 28/15 33/18 121/16 real [8] 66/25 102/7 103/3 126/13 147/12 157/25 170/13 176/13 real-world [1] 176/13 realise [1] 125/14 reality [2] 17/13 120/11 really [9] 22/12 46/2 101/7 108/7 119/7 137/17 157/9 158/19 172/20 reason [2] 32/18 174/5 reasonable [4] 27/21 104/7 108/2 132/22 reasonably [1] 30/16 reasons [3] 81/14 81/19 177/10 reassessment [1] 176/11 reassurance [1] 157/10 recall [1] 171/25 received [1] 53/13 recent [9] 58/19 69/5
----------	--	--	--	--

R	referring [6] 20/4 84/15 88/9 119/19 163/1 163/2 reflect [1] 14/8 reflected [2] 31/24 177/14 reflecting [2] 4/4 24/4 reflection [2] 53/11 77/17 reflections [1] 55/24 reform [3] 3/15 42/14 57/11 reforms [1] 33/24 regard [4] 25/24 133/6 142/4 158/23 regarded [1] 20/19 regards [1] 60/12 regime [1] 147/18 region [1] 143/3 regional [13] 38/5 38/6 38/7 38/9 38/10 39/20 40/7 40/21 41/3 60/10 70/23 143/2 145/6 regions [1] 60/4 Register [2] 27/19 61/6 registered [1] 19/17 registers [1] 65/23 regular [5] 37/11 39/8 156/23 157/1 157/6 regulation [1] 22/1 regulations [6] 60/21 123/5 127/11 127/18 146/14 147/12 regulatory [2] 29/21 147/18 reinstating [2] 160/1 160/6 relate [1] 76/7 related [11] 8/21 13/20 19/11 32/15 42/22 62/17 75/20 76/12 83/25 84/1 140/4 relates [3] 10/15 75/11 119/15 relating [3] 12/8 73/11 86/14 relation [20] 5/4 10/1 28/25 30/1 34/10 55/16 67/18 67/19 67/21 77/16 79/22 87/8 97/18 118/9 126/12 133/20 140/20 154/6 154/21 163/7 relationships [6] 4/2 17/3 31/21 32/2 39/11 72/15 relative [2] 22/8 176/6 relatively [6] 4/12	95/5 100/19 105/20 128/13 131/21 release [2] 97/5 111/8 relevancy [3] 79/13 84/23 85/13 relevant [8] 8/9 13/20 38/11 49/3 54/18 60/22 65/21 65/24 reliable [1] 13/20 relied [1] 75/12 relieved [1] 19/2 rely [1] 97/2 remain [1] 18/23 remainder [1] 56/13 remains [2] 44/19 55/12 remarks [2] 7/10 56/16 remediate [1] 155/13 remember [7] 52/20 105/16 108/8 111/7 162/19 169/18 170/3 remembered [1] 53/9 reminded [1] 15/22 remit [3] 47/4 47/8 57/6 renewed [1] 153/14 repaired [1] 15/17 repeat [2] 35/24 74/24 replace [1] 146/13 replacing [1] 142/24 replication [1] 142/12 report [47] 11/17 29/15 68/11 73/18 74/18 75/4 75/7 75/10 75/12 75/17 76/1 76/19 76/20 77/18 78/16 78/20 78/25 79/22 79/24 80/17 80/20 81/1 81/14 83/9 95/20 101/24 101/25 108/16 113/7 119/15 119/18 125/5 129/3 133/12 138/13 139/19 140/11 140/14 147/14 148/7 155/9 156/1 156/17 167/6 171/23 173/6 173/10 reported [4] 67/13 68/19 69/4 140/15 reporting [2] 141/1 170/24 reports [5] 7/20 11/13 12/3 50/16 90/12 represent [3] 6/14 15/8 46/18 representative [1] 149/12 representatives [1] 60/4	representing [1] 170/20 represents [1] 42/19 Republic [1] 98/5 request [1] 11/7 requests [2] 55/15 55/25 require [5] 18/14 18/24 59/19 115/18 131/15 required [16] 5/3 14/4 16/23 20/7 23/19 24/9 24/18 30/12 30/15 32/21 61/17 64/13 124/11 125/9 130/18 150/16 requirements [1] 150/16 requires [10] 27/1 114/6 114/16 116/6 119/5 119/6 123/16 150/7 150/8 156/6 requiring [1] 66/17 requisite [1] 163/25 Rescue [1] 37/24 research [18] 14/9 20/24 21/2 21/3 21/24 54/9 77/13 78/1 78/5 79/3 86/5 130/18 133/14 163/21 164/2 171/10 171/14 172/16 reserve [1] 149/9 reservoir [1] 100/4 residential [3] 19/19 19/19 22/25 resilience [75] 17/5 22/11 23/1 25/25 28/19 28/21 31/3 31/13 31/20 36/4 36/7 36/15 36/17 36/25 37/5 37/8 37/11 38/2 38/5 38/6 38/8 38/15 38/17 38/18 38/20 38/21 38/23 39/2 39/9 39/17 42/11 43/18 45/3 54/14 54/15 55/7 56/12 56/19 60/18 61/25 63/6 63/7 63/8 63/10 63/12 63/13 63/14 67/2 67/6 67/11 68/11 69/14 69/24 70/7 70/9 70/21 71/7 71/16 71/17 71/18 71/21 72/2 72/9 72/11 72/13 72/20 73/2 73/8 73/12 149/11 149/13 149/23 150/1 150/6 150/11 resilient [5] 22/14 22/19 25/1 35/15 35/22 resistance [17] 83/18 96/12 96/16 96/17 108/15 108/18 108/19	109/1 109/3 109/5 109/11 109/13 109/19 109/24 110/11 110/13 117/1 resource [4] 25/13 26/1 125/24 131/24 resourced [2] 158/10 159/10 resources [10] 23/23 24/25 31/9 34/6 64/6 64/17 65/1 124/5 126/3 148/19 resourcing [4] 25/23 58/13 58/25 64/8 respect [8] 5/23 6/3 18/6 21/12 48/15 65/15 67/10 69/12 respectfully [1] 148/22 respecting [2] 65/12 67/8 respiratory [23] 24/14 24/16 41/14 87/18 88/3 89/3 90/18 90/23 91/1 91/8 104/25 133/2 135/7 136/13 136/24 137/8 137/24 137/25 161/1 165/8 165/9 165/12 174/2 respond [21] 23/6 31/4 37/10 38/24 41/3 61/17 64/16 66/18 105/24 105/25 113/11 113/13 115/8 115/13 126/25 129/7 150/4 154/7 162/1 162/15 165/21 responded [4] 13/14 35/15 63/7 172/10 responders [5] 38/17 38/20 38/25 62/4 72/23 responding [8] 13/21 42/1 49/23 122/19 130/18 151/24 152/1 153/21 responds [1] 163/7 response [81] 5/10 7/8 8/8 10/21 12/12 17/5 22/10 23/11 23/19 24/19 29/9 29/18 29/20 30/10 30/13 30/19 30/24 32/4 39/4 39/7 39/13 41/13 43/12 48/6 52/11 52/17 54/17 54/21 54/24 55/15 57/10 57/15 59/17 59/21 60/14 62/9 64/13 65/10 66/23 68/21 70/4 70/7 79/9 79/19 90/11 112/3 114/10 115/13 115/14
----------	--	--	--	--

R	revisited [1] 166/15 right [60] 6/16 6/22 14/17 15/4 18/2 33/4 45/17 46/10 52/1 52/20 74/6 75/9 77/2 84/22 86/2 87/2 87/7 88/1 88/20 90/2 94/2 96/7 109/16 110/16 111/12 112/8 112/25 119/9 121/16 127/1 130/16 132/12 134/24 136/21 136/21 138/12 140/24 143/24 146/1 148/5 150/9 150/10 150/18 153/18 155/6 156/11 158/2 159/17 161/24 163/5 163/20 164/3 167/21 168/8 169/21 169/25 170/5 171/7 171/21 178/11 right-hand [3] 87/7 88/1 153/18 rightly [5] 26/22 30/17 32/7 51/12 52/18 Rights [1] 29/24 rigorously [1] 53/7 rise [2] 82/16 122/13 risk [67] 10/9 16/21 21/18 27/19 27/20 33/14 33/14 36/10 37/2 37/3 37/4 40/17 40/21 40/23 41/2 58/24 60/13 61/5 61/6 61/7 61/8 61/9 61/13 61/14 61/19 61/22 62/2 62/10 62/13 62/14 62/23 63/25 64/16 65/19 65/21 65/23 68/2 71/1 71/6 72/4 72/5 72/7 72/12 72/21 73/2 73/5 81/25 82/17 95/24 96/2 97/12 97/17 103/3 108/14 108/17 110/3 110/21 112/13 114/4 114/21 123/3 134/10 137/2 138/2 158/8 159/9 177/18 risks [40] 21/14 22/14 35/23 36/8 36/10 36/19 37/2 37/15 39/7 40/24 41/4 43/19 44/3 58/3 60/7 61/2 61/11 61/16 61/18 61/19 61/23 62/3 62/8 62/12 62/22 63/25 64/19 68/5 72/1 73/5 96/4 96/12 97/3 97/6 97/10 110/18 135/1 137/20 153/16 161/12 rituals [1] 16/1 road [1] 14/12	robust [2] 137/14 140/22 role [25] 8/8 19/3 25/4 25/15 47/25 50/9 50/23 52/11 53/24 54/16 56/14 56/20 57/14 60/1 60/11 60/18 64/12 65/13 69/16 140/12 140/19 140/22 141/21 170/15 170/15 roles [3] 43/9 72/3 150/15 roll [1] 150/4 roof [1] 42/21 room [4] 37/9 37/11 59/15 74/22 round [3] 24/22 59/7 118/10 route [5] 87/9 91/14 91/18 91/18 105/1 routes [2] 24/13 91/12 routine [3] 115/16 164/22 165/4 Royal [7] 11/7 67/25 68/3 68/12 68/15 77/7 77/10 Royal Society [1] 77/10 rubric [1] 144/3 rules [1] 14/11 run [9] 93/10 113/8 129/22 130/9 130/10 149/17 153/22 159/1 159/1 running [2] 52/14 142/19 Russia [1] 88/24 Russia's [1] 65/7 Russian [1] 88/25	same [9] 9/22 18/3 117/9 118/11 128/6 129/16 134/21 136/17 151/2 sampling [1] 165/2 Santé [1] 144/22 Santé publique [1] 144/22 SARS [27] 85/23 86/19 89/2 89/3 89/7 90/7 92/8 94/4 94/5 94/5 94/6 104/5 111/5 111/5 120/18 121/7 121/13 122/7 122/9 122/14 133/8 168/9 168/10 168/17 172/3 174/24 175/2 SARS-CoV-1 [6] 89/2 89/7 90/7 94/6 111/5 121/13 SARS-CoV-2 [5] 85/23 86/19 92/8 94/4 120/18 save [1] 17/8 saved [1] 14/24 say [52] 1/12 3/7 3/9 5/6 16/3 18/1 20/11 30/6 30/22 31/3 36/4 74/20 74/22 82/25 90/25 95/14 95/17 100/9 102/7 103/4 104/25 106/18 108/10 108/21 110/25 114/7 119/7 122/21 123/18 124/20 125/16 126/6 130/14 132/3 135/3 141/15 146/4 146/25 147/9 147/19 151/10 152/17 156/8 157/13 160/24 162/13 162/23 163/6 164/9 169/9 176/8 177/25 saying [7] 3/4 100/1 113/19 123/12 135/17 156/8 178/8 says [2] 120/4 120/16 scale [18] 10/21 13/4 23/10 23/21 24/7 25/3 27/4 54/25 58/22 59/18 129/4 158/6 159/6 162/20 163/3 163/9 177/22 177/22 scale-up [1] 129/4 scaled [2] 23/24 131/4 scaling [4] 13/7 13/11 70/3 158/6 scanning [4] 118/4 138/6 138/14 138/18 scenario [1] 102/8 scenarios [3] 62/9 68/5 100/11 schedule [1] 74/9	scheme [2] 128/4 143/22 School [1] 76/24 schools [1] 10/9 science [34] 6/12 6/15 7/3 7/12 7/18 7/18 7/21 7/22 7/23 7/25 8/10 8/18 8/19 9/4 9/7 9/9 9/24 10/5 10/7 10/13 10/15 10/23 10/25 12/1 12/8 12/8 12/18 13/1 44/5 55/8 153/24 153/25 164/2 179/7 Sciences [1] 77/8 scientific [22] 7/4 7/20 8/2 9/3 12/24 21/24 24/1 24/4 28/22 34/6 61/24 78/23 90/12 103/14 107/16 129/12 131/24 149/1 149/7 151/11 159/25 163/25 scientist [1] 155/16 scientists [13] 3/20 8/25 14/19 21/4 40/3 44/2 52/13 130/17 131/19 139/15 170/7 170/16 171/17 Scolding [3] 15/4 15/6 179/12 scope [3] 69/15 81/11 137/22 score [2] 129/1 176/1 scored [3] 128/4 175/7 177/13 scores [3] 129/1 176/16 177/9 scoring [2] 128/5 177/18 Scotland [36] 1/7 1/11 2/10 3/11 3/13 3/15 4/5 4/22 5/12 5/20 6/7 35/3 35/9 35/15 35/16 35/22 36/16 36/18 37/21 37/24 38/7 38/23 39/17 39/19 40/15 40/25 41/8 41/17 42/18 42/20 44/10 44/14 44/15 44/16 45/3 179/4 Scotland's [4] 3/14 5/19 36/4 41/13 Scottish [51] 3/2 3/5 4/3 4/8 4/8 4/20 34/17 34/18 34/21 34/24 35/8 35/13 35/18 35/21 36/1 36/6 36/9 36/22 36/25 37/7 37/8 37/24 38/15 38/25 39/8 39/15 39/17 39/25 40/1 40/9 40/18 40/20 40/21 41/5 41/9
----------	--	--	--	--

S	62/23 63/10 64/20 68/2 69/2 69/18 71/6 72/4 73/5 73/10 76/7 79/11 80/12 112/23 128/10 144/7 145/4 145/6 152/16 152/25 153/5 153/10 157/9 159/22 160/15 175/8 175/25 see [30] 14/7 15/19 79/24 86/22 87/5 88/1 88/21 92/11 97/22 97/23 97/25 98/2 98/5 98/16 114/8 116/16 117/5 117/11 117/18 124/5 124/23 124/24 134/4 147/5 148/9 155/8 164/6 165/6 169/23 173/10 seeing [5] 83/24 84/24 106/1 129/23 160/19 seek [4] 18/1 75/14 166/17 172/4 seeking [3] 19/24 26/22 54/7 seeks [1] 37/18 seem [1] 33/10 seems [3] 155/11 155/14 161/16 seen [8] 25/10 48/11 104/9 115/15 115/20 142/3 144/7 151/1 selection [1] 78/24 self [11] 11/1 81/9 97/6 128/5 128/17 128/22 129/6 131/21 140/19 147/7 150/24 self-assessed [1] 128/17 self-assessment [1] 128/22 self-evident [5] 81/9 97/6 129/6 131/21 147/7 self-evidently [1] 140/19 self-examination [1] 11/1 self-scoring [1] 128/5 Senedd [1] 29/21 senior [6] 9/5 28/12 38/16 55/19 64/2 124/16 sense [6] 33/11 103/24 114/2 115/4 131/18 158/13 sensible [9] 123/23 124/8 135/14 136/4 136/5 158/12 159/12 171/2 173/4 sensitivities [1] 49/10	sentence [2] 141/13 177/16 sentences [1] 175/21 separate [1] 161/13 separated [2] 6/19 145/17 separately [4] 12/19 161/3 161/4 161/5 September [2] 5/11 58/8 September 2020 [2] 5/11 58/8 sequencing [3] 13/2 24/2 162/3 series [5] 17/20 39/16 42/15 43/6 104/22 serious [7] 17/8 61/2 61/11 124/22 125/15 126/12 168/23 seriously [4] 18/16 120/16 170/6 170/12 seriousness [1] 49/20 servants [4] 9/5 47/18 52/10 57/25 serves [2] 50/24 70/15 service [11] 37/25 47/21 47/25 48/7 49/16 49/17 56/3 58/6 139/17 149/20 177/5 services [10] 19/8 19/19 19/20 19/25 22/18 22/24 44/13 51/3 54/5 67/16 set [30] 5/19 11/9 17/25 19/5 36/14 49/14 54/14 55/23 59/12 60/12 62/1 63/11 66/10 71/16 76/19 81/13 81/19 86/3 96/10 113/6 113/9 131/15 134/13 148/7 148/10 154/4 154/9 154/23 157/23 165/7 sets [5] 60/17 71/15 86/12 153/12 153/19 setting [9] 5/12 18/25 20/25 43/25 48/25 71/23 76/21 91/20 132/13 settings [2] 22/25 92/3 seven [2] 10/20 94/24 seven months [1] 10/20 Seventh [1] 72/11 several [5] 2/12 38/8 44/11 146/7 173/8 severe [7] 63/17 81/22 89/3 89/19	99/17 99/23 101/15 severity [6] 81/11 87/15 89/18 99/11 105/2 106/12 sexually [1] 24/18 shall [5] 18/8 18/25 19/2 45/13 138/25 shaped [2] 60/21 69/17 shaping [1] 26/4 share [6] 2/7 12/4 38/3 51/15 82/4 121/11 shared [9] 4/5 13/23 14/5 14/12 16/3 27/13 62/3 109/8 139/21 sharing [1] 33/22 Sharpe [5] 45/17 45/19 45/25 51/20 179/23 sharpen [1] 103/18 sharply [1] 103/2 shifts [1] 57/15 shine [1] 30/17 shivers [1] 122/8 shocks [1] 22/17 shop [1] 43/2 short [13] 1/11 1/25 4/23 16/16 16/18 26/3 45/15 76/20 95/5 99/2 139/2 154/5 161/25 shortly [1] 11/5 shots [1] 24/21 should [31] 10/3 12/17 17/17 24/12 30/16 37/7 42/2 42/12 43/5 54/19 54/21 55/3 64/3 70/1 109/18 120/25 121/13 121/20 123/8 123/10 123/19 123/20 126/11 136/16 141/15 149/2 165/3 165/13 173/1 175/15 177/25 shouldn't [1] 176/15 show [2] 97/13 106/22 shown [4] 16/5 16/16 43/21 104/23 shut [2] 112/17 114/13 sick [1] 20/14 side [8] 87/7 88/1 112/19 112/21 130/8 130/25 153/19 162/9 sift [2] 124/6 124/25 signed [1] 75/7 significance [2] 11/16 112/14 significant [22] 24/10 27/2 28/8 31/19 32/10 38/21 46/25 49/7 69/17 69/23 94/18 110/12 110/24 123/20	123/22 126/12 130/5 134/10 146/18 147/25 152/14 153/16 significantly [3] 31/16 53/23 115/8 signify [1] 87/24 silent [1] 109/20 silos [1] 132/9 Silver [1] 41/12 Silver Swan [1] 41/12 similar [8] 61/16 84/16 105/21 141/1 142/8 160/2 160/6 168/19 simple [2] 39/20 176/15 simplifying [1] 51/2 simply [4] 85/17 106/23 151/13 152/1 simulation [5] 156/23 157/2 157/3 157/6 157/20 since [9] 51/10 58/23 78/15 80/18 110/4 128/18 128/21 152/9 165/6 sincerely [1] 2/6 Singapore [2] 144/23 167/13 single [7] 43/1 64/25 114/4 114/4 115/9 140/6 140/11 Sir [8] 8/4 8/5 9/19 11/2 11/6 11/20 11/22 169/25 Sir Adrian Smith [1] 11/6 Sir Chris Whitty [1] 8/5 Sir Patrick [1] 11/20 Sir Patrick Vallance [1] 8/4 Sir Patrick's [2] 9/19 11/22 Sir Peter Horby [1] 169/25 sit [3] 57/20 58/16 69/15 sited [1] 22/6 sits [2] 38/8 51/25 situation [4] 10/18 70/13 141/4 141/25 situations [1] 176/14 six [1] 17/9 six months [1] 17/9 Sixthly [1] 72/9 skill [1] 131/15 slavishly [2] 104/21 105/13 slight [1] 112/6 slightly [4] 131/15 137/23 138/24 142/17 slow [4] 110/10
----------	---	---	---	--

S	102/16 102/24 103/10 105/20 112/16 112/21 114/16 116/15 117/5 118/3 119/14 119/22 121/18 121/19 122/3 122/8 122/9 124/9 125/2 125/12 125/13 127/2 133/4 139/11 141/16 144/8 147/6 147/7 149/13 150/6 164/7 170/6	83/17 84/19 84/20 specific [20] 11/23 21/19 23/16 23/20 58/18 62/8 62/12 63/25 64/17 83/22 109/4 116/17 134/18 134/23 135/2 136/16 136/16 143/16 149/18 150/13 specifically [6] 47/9 49/15 73/11 85/2 116/18 134/14 specifics [1] 136/3 specify [1] 93/14 speculate [1] 110/14 speed [2] 24/9 110/12 spending [1] 62/17 sphere [1] 63/1 spheres [1] 160/8 spillover [7] 96/11 96/13 97/9 97/10 97/11 97/18 111/18 spillovers [2] 98/1 98/7 spirit [2] 116/11 116/22 split [2] 70/6 145/5 spoken [1] 121/8 sponsored [1] 4/7 spread [11] 25/9 82/13 85/18 89/11 101/5 104/25 108/24 109/13 110/11 165/19 167/25 spreads [1] 99/15 spring [1] 65/5 spur [1] 148/14 staff [8] 3/18 3/20 4/24 16/8 58/21 149/18 150/13 150/14 staffed [1] 130/2 staffing [2] 22/23 49/16 stage [7] 33/20 77/11 105/18 123/16 124/8 124/9 125/14 stages [7] 11/1 24/8 130/5 158/4 162/20 169/9 169/19 stand [1] 119/4 standard [4] 129/10 129/12 131/2 131/7 standards [2] 63/13 72/13 standing [5] 8/6 43/25 94/3 150/2 150/8 stands [3] 33/18 89/3 158/21 stark [1] 44/7 start [9] 1/14 4/15 6/16 15/10 23/16 52/2 105/20 134/22 157/21	started [6] 20/18 29/7 29/8 30/11 103/16 111/19 starting [4] 14/16 89/11 108/1 132/23 starts [2] 111/17 113/20 state [5] 59/23 121/14 142/2 142/23 177/5 stated [2] 5/23 53/4 statement [6] 1/10 2/25 27/8 45/1 56/13 71/25 statements [12] 2/15 11/9 28/9 28/10 28/13 28/15 28/18 44/20 55/19 55/22 65/17 139/6 states [8] 133/25 142/1 142/4 146/24 147/21 171/23 172/13 172/15 Statistics [1] 165/7 statutory [3] 38/16 38/19 38/25 stayed [1] 16/25 steadfast [1] 55/12 steadily [1] 31/14 Steering [1] 79/5 Stein [1] 15/8 stenographer [1] 98/20 step [1] 107/2 stepped [1] 14/21 stepping [1] 97/24 steps [4] 6/23 43/24 103/18 115/24 stewardship [1] 110/10 still [13] 15/21 18/12 18/15 24/19 54/5 74/21 75/1 110/12 111/7 120/24 147/1 147/2 158/21 stockpiles [4] 22/2 23/13 23/14 23/15 stoicism [1] 16/5 stop [7] 43/2 107/3 112/2 117/22 147/16 173/17 177/25 store [1] 176/15 stories [2] 98/14 139/24 Strachan [4] 51/21 51/23 73/21 180/2 straightforward [2] 27/10 33/16 strain [1] 54/5 strategic [5] 5/12 5/18 38/18 62/16 153/19 strategies [3] 25/15 27/14 130/7	strategy [16] 5/16 25/10 27/15 40/10 80/12 80/21 144/20 152/16 152/25 153/5 153/10 154/4 154/15 154/20 157/9 160/16 strength [1] 17/14 strengthen [3] 3/16 71/16 72/14 strengthened [1] 5/16 strengthening [3] 44/15 72/9 159/25 strengths [4] 13/18 22/8 30/6 66/22 stress [1] 176/13 striking [1] 50/2 strong [4] 2/25 12/25 22/12 58/2 stronger [5] 73/6 148/11 148/14 164/16 164/20 strongly [1] 168/16 struck [7] 32/24 90/1 105/7 105/10 105/16 106/2 106/7 structure [10] 38/2 38/4 39/21 39/21 58/25 59/10 127/10 142/16 142/20 160/14 structures [12] 9/3 14/6 27/11 28/20 31/6 36/2 42/15 53/6 56/10 141/9 143/6 143/9 stuttering [1] 100/16 style [1] 135/22 sub [3] 8/12 12/11 14/20 sub-groups [3] 8/12 12/11 14/20 subcommittee [1] 73/9 subject [5] 59/4 61/24 68/25 128/8 139/4 subjected [1] 9/22 submissions [17] 1/4 1/7 6/12 15/5 26/15 31/25 34/18 45/18 51/22 74/6 179/3 179/6 179/10 179/14 179/17 179/21 179/25 submit [1] 44/19 submitted [1] 69/15 subsequent [1] 145/10 substance [3] 29/17 30/4 81/2 substantial [3] 34/12 85/11 146/22 substantially [1] 32/20 substantive [1] 144/1 substitute [1] 50/12
----------	--	--	--	---

S	suppose [2] 150/2 172/18	symptoms [3] 54/10 94/21 106/22	144/4 160/16	127/16 128/9 130/20 131/14 158/6 159/4 162/16 162/17 162/21 163/2
subsumed [2] 144/6 145/3	supposed [1] 102/22	Syndrome [4] 41/15 89/4 90/18 91/2	talking [10] 83/13 115/19 115/20 115/21 119/3 129/20 149/12 154/22 161/16 167/23	tests [9] 24/6 149/16 149/17 162/5 162/24 163/1 163/3 171/6 172/21
such [36] 3/6 9/6 12/16 19/9 27/14 29/21 31/5 31/10 41/21 49/22 50/22 51/7 53/11 55/5 55/7 57/14 58/5 59/3 60/22 62/17 63/6 68/7 69/17 94/9 96/4 98/7 105/3 135/9 142/9 147/10 148/3 170/21 171/19 172/21 173/21 177/18	sure [13] 26/9 28/2 45/24 46/10 107/18 115/25 138/8 159/3 159/7 159/8 163/15 163/24 169/21	syndromic [1] 118/3	Tam [1] 24/20	text [2] 175/14 175/19
suffered [7] 6/17 15/13 35/9 35/11 35/18 49/22 52/16	surge [3] 23/10 23/25 150/7	synthesise [1] 161/21	target [2] 129/10 131/4	Thailand [2] 167/14 168/21
suffering [2] 35/20 52/23	surgeries [1] 117/16	synthesised [1] 137/19	task [2] 20/1 130/12	than [30] 12/8 21/19 26/20 31/6 33/8 35/18 58/21 62/7 65/4 81/15 89/19 92/15 93/24 116/17 122/4 124/18 133/3 133/4 141/14 142/24 146/22 150/6 150/8 152/14 152/17 165/24 168/5 170/12 173/20 175/18
sufficient [6] 129/7 131/19 140/11 146/8 149/9 150/13	surgery [1] 97/2	system [49] 9/16 13/13 22/1 22/12 22/13 22/15 25/2 31/5 32/23 36/5 36/15 42/24 45/3 57/9 59/11 63/22 116/4 116/15 117/9 118/13 118/17 118/17 118/20 118/21 120/1 126/19 126/24 130/12 134/7 140/7 140/9 142/23 142/23 143/14 143/19 144/1 148/16 149/10 149/11 150/12 150/17 151/17 153/5 164/18 164/21 165/16 166/5 172/13 177/8	taskforce [2] 65/3 65/5	thank [52] 1/9 6/9 6/10 15/2 16/7 16/20 26/12 26/13 34/10 34/15 45/11 45/12 46/13 46/15 50/12 51/20 73/20 73/21 74/1 74/17 76/5 78/22 79/21 80/25 86/2 94/2 98/23 98/23 100/2 101/23 108/12 133/10 133/11 143/24 149/5 154/3 155/19 156/9 158/2 163/20 166/1 166/3 167/16 168/7 171/3 175/4 177/15 178/2 178/4 178/6 178/7 178/9
sufficiently [4] 31/9 63/17 105/25 130/16	surprise [4] 120/25 136/19 138/24 176/20	systemic [1] 50/19	taxpayers [1] 58/2	that [747]
suggest [5] 80/7 121/12 148/22 152/13 158/11	surprising [1] 177/12	systems [17] 60/7 116/12 117/8 118/3 118/6 118/18 118/19 119/1 129/8 130/10 141/5 142/10 142/13 161/8 164/8 164/10 165/4	team [17] 1/20 2/2 2/4 27/4 34/11 45/9 45/10 50/3 50/13 64/24 70/1 79/15 86/10 114/11 114/12 115/22 145/24	that's [37] 15/1 78/6 81/24 98/22 105/15 106/8 108/7 108/12 110/25 125/19 126/1 126/18 129/1 129/21 129/22 132/13 133/18 135/8 135/9 139/13 140/1 146/2 146/20 150/10 151/22 158/2 159/17 160/3 164/24 165/12 165/14 166/1 167/23 169/10 173/13 177/13 177/15
suffering [2] 35/20 52/23	surrounding [1] 16/1	technical [4] 11/17 24/2 28/22 44/2	teams [5] 43/10 57/18 130/1 145/25 150/22	technology [3] 19/23 70/19 85/7
sufficient [6] 129/7 131/19 140/11 146/8 149/9 150/13	surveillance [57] 21/24 25/8 80/3 80/8 114/18 115/5 115/7 116/4 118/1 118/2 118/4 118/5 118/7 118/13 118/17 118/18 118/19 118/20 118/21 119/1 119/2 119/2 119/3 124/5 124/23 129/8 129/22 130/10 130/12 131/1 137/2 138/2 138/6 142/5 142/5 142/13 142/14 143/9 146/5 146/17 148/16 160/24 160/25 161/1 161/9 162/2 164/8 164/10 164/16 164/17 164/19 164/21 164/23 165/5 165/8 165/13 165/16	tell [6] 55/8 73/25 76/2 139/11 141/16 148/1	TEO [8] 46/19 46/20 47/8 48/1 49/3 49/21 50/17 50/24	term [3] 54/7 70/8 154/5
sufficiently [4] 31/9 63/17 105/25 130/16	survey [2] 73/1 165/10	tackle [2] 37/22 54/11	TEO's [2] 49/15 50/3	thank you [29] 1/9 6/9 15/2 26/12 34/10 45/11 46/15 50/12 73/21 76/5 79/21 80/25 86/2 94/2 98/23 101/23 108/12 143/24 149/5 156/9 158/2 163/20 166/1 167/16 168/7 171/3 175/4 177/15 178/6
suggest [5] 80/7 121/12 148/22 152/13 158/11	surveys [1] 63/6	tackling [2] 58/24 64/10	term [3] 54/7 70/8 154/5	Thanks [1] 54/3
suggested [2] 80/17 149/1	survive [3] 99/24 101/11 147/25	Taiwan [1] 167/12	termed [1] 3/11	that [747]
suggesting [1] 136/15	suspected [2] 41/14 93/18	take [27] 24/13 36/14 76/5 86/15 97/24 97/25 98/10 103/18 107/2 115/24 116/14 119/7 120/16 123/8 123/10 124/2 130/22 143/13 146/8 147/5 154/19 167/5 170/11 171/24 175/9 177/10 177/21	terms [37] 4/2 31/9 36/15 36/17 44/7 49/4 49/15 49/17 54/24 65/8 67/7 76/3 76/6 88/12 88/17 89/18 91/2 91/3 95/12 102/9 106/1 111/16 111/25 112/1 112/3 112/11 116/12 130/8 131/24 145/13 147/13 148/24 149/23 150/5 151/17 151/19 171/22	that's [37] 15/1 78/6 81/24 98/22 105/15 106/8 108/7 108/12 110/25 125/19 126/1 126/18 129/1 129/21 129/22 132/13 133/18 135/8 135/9 139/13 140/1 146/2 146/20 150/10 151/22 158/2 159/17 160/3 164/24 165/12 165/14 166/1 167/23 169/10 173/13 177/13 177/15
suggestion [3] 157/17 160/23 165/3	sustainability [1] 49/17	taken [14] 21/22 26/6 36/6 43/24 52/17 59/14 66/8 113/5 135/13 138/24 156/22 157/1 157/8 170/6	terrible [3] 53/8 92/10 100/20	that's [37] 15/1 78/6 81/24 98/22 105/15 106/8 108/7 108/12 110/25 125/19 126/1 126/18 129/1 129/21 129/22 132/13 133/18 135/8 135/9 139/13 140/1 146/2 146/20 150/10 151/22 158/2 159/17 160/3 164/24 165/12 165/14 166/1 167/23 169/10 173/13 177/13 177/15
suggestions [2] 55/24 149/6	sustainable [1] 22/22	takes [5] 92/23 92/25 136/19 155/4 174/3	terrorism [2] 37/3 76/12	that's [37] 15/1 78/6 81/24 98/22 105/15 106/8 108/7 108/12 110/25 125/19 126/1 126/18 129/1 129/21 129/22 132/13 133/18 135/8 135/9 139/13 140/1 146/2 146/20 150/10 151/22 158/2 159/17 160/3 164/24 165/12 165/14 166/1 167/23 169/10 173/13 177/13 177/15
suitable [2] 83/4 138/22	sustained [1] 125/19	taking [4] 54/13 56/18 118/24 144/24	test [6] 24/3 73/5 162/9 162/11 162/18 172/3	that's [37] 15/1 78/6 81/24 98/22 105/15 106/8 108/7 108/12 110/25 125/19 126/1 126/18 129/1 129/21 129/22 132/13 133/18 135/8 135/9 139/13 140/1 146/2 146/20 150/10 151/22 158/2 159/17 160/3 164/24 165/12 165/14 166/1 167/23 169/10 173/13 177/13 177/15
summarise [1] 135/12	Swan [1] 41/12	talk [7] 85/21 85/21 112/5 112/22 117/7	testament [1] 44/22	testing [14] 10/6 21/25 22/4 24/8
summary [3] 43/16 56/16 153/12	swift [1] 17/5		testimony [1] 1/24	
superseded [1] 155/9	swiftly [2] 22/7 27/3		testing [14] 10/6 21/25 22/4 24/8	
supplementary [1] 167/4	swine [5] 89/24 90/1 90/10 101/3 107/6			
supplements [1] 40/23	swine flu [4] 89/24 90/1 90/10 101/3			
supplies [2] 23/2 148/18	sworn [2] 74/12 180/4			
supply [1] 162/24	sympathies [1] 15/11			
support [17] 5/20 7/23 8/1 16/18 19/3 19/25 25/7 25/18 39/6 50/21 57/3 57/25 64/3 66/19 70/12 72/25 150/20	sympathy [1] 52/3			
supported [2] 6/25 55/21	symptomatic [6] 91/3 106/12 106/13 106/19 106/25 107/12			
supporting [6] 28/6 38/14 54/8 55/13 57/7 57/9				

T	11/25 22/1 22/4 25/8 148/18 162/6	157/22 158/11 158/17 159/5 159/8 159/13 160/16 166/7 166/9 166/10 166/11 171/23 172/10	thorough [1] 66/10 thoroughly [1] 20/14 those [109] 3/3 3/8 6/7 6/17 6/18 6/19 6/20 6/24 6/24 6/25 7/6 8/12 8/14 9/17 10/10 12/13 12/24 12/25 16/21 17/7 18/11 18/16 18/20 18/24 19/23 20/20 26/20 28/15 28/23 29/2 29/12 30/9 30/12 30/24 32/2 45/6 45/25 46/16 49/21 50/11 50/17 51/8 51/11 51/18 52/3 52/7 52/10 52/11 52/13 53/25 54/8 54/8 60/4 61/18 65/1 69/14 76/6 78/7 78/10 84/4 85/25 92/2 93/1 93/5 96/22 96/23 97/7 104/5 108/8 114/22 117/1 117/10 122/7 124/3 124/7 126/2 126/12 127/24 129/17 130/1 130/4 131/1 133/19 134/20 135/1 136/17 137/11 137/18 143/5 148/21 154/6 155/4 155/24 159/7 160/17 161/9 161/9 161/22 166/2 168/4 168/8 168/9 168/9 168/16 169/9 172/4 172/23 177/10 178/2	116/24 120/18 166/25 167/2 174/7 174/15 three days [1] 174/7 three months [1] 120/18 three-year [1] 5/17 threshold [1] 131/11 thrive [1] 19/23 through [20] 43/24 53/13 57/8 59/6 60/20 63/25 86/15 91/19 113/9 122/14 130/6 135/5 140/2 153/22 156/5 158/1 162/8 171/22 172/8 177/9 throughout [5] 65/21 65/23 66/25 89/11 95/18 Thursday [1] 178/18 thus [2] 9/21 40/8 Tier [1] 96/2 time [40] 4/15 5/2 5/8 15/20 18/5 19/13 20/18 24/22 36/14 57/15 58/20 60/20 63/25 64/11 64/18 64/19 66/25 70/22 82/24 86/18 98/17 107/16 114/10 115/3 118/11 120/9 126/3 126/4 136/17 146/8 147/3 147/5 155/10 168/2 169/24 171/5 171/6 171/19 174/7 178/11 timeframe [2] 65/14 148/3 timely [2] 14/8 27/1 times [3] 10/14 13/11 17/7 timescales [1] 68/6 timetable [1] 27/7 tin [1] 138/9 today [11] 1/3 2/24 3/7 15/22 18/3 26/18 51/25 76/11 147/4 175/19 178/12 together [33] 7/21 8/9 15/7 21/2 35/16 37/22 38/11 39/10 41/18 44/2 57/4 58/10 60/9 61/16 70/23 85/25 116/20 139/25 141/3 143/1 144/16 144/19 145/21 145/24 145/25 155/8 160/10 160/14 160/18 160/25 161/8 161/20 161/22 told [2] 123/9 144/23 tolerated [1] 44/8 tomorrow [3] 91/10 178/13 178/15 too [7] 32/5 106/3 106/4 126/2 132/9
that's our [1] 15/1 their [67] 1/24 2/11 6/19 6/23 7/1 8/15 8/15 8/22 9/2 9/3 12/19 14/24 15/12 15/14 15/19 16/13 16/14 16/21 17/1 17/1 17/1 17/2 17/4 27/16 28/13 34/7 35/11 41/23 47/16 47/19 47/19 51/1 55/22 55/23 58/18 61/21 62/4 62/20 63/3 63/11 63/12 63/15 63/24 72/17 81/11 96/19 108/9 122/13 137/13 137/21 137/21 137/22 140/3 144/11 144/24 147/14 147/15 149/18 152/2 152/13 167/19 167/20 168/17 168/22 172/11 174/23 176/6	there [187] there's [16] 82/19 91/12 94/19 123/24 139/18 140/3 141/24 143/3 146/22 147/22 149/16 150/11 161/15 163/6 173/16 177/16 thereafter [1] 43/8 thereby [1] 40/16 therefore [26] 33/15 35/24 43/16 55/12 87/14 94/4 94/8 96/4 99/23 99/24 100/13 100/18 102/18 103/17 104/2 105/12 107/1 109/10 113/11 114/1 116/6 116/8 122/23 123/14 123/16 134/16 these [63] 2/3 3/19 7/10 7/17 11/8 14/7 14/14 16/16 21/15 34/20 37/20 38/1 38/22 39/10 41/16 43/14 46/7 56/1 56/3 62/1 62/3 62/7 67/22 68/17 68/24 69/21 76/8 76/11 82/2 82/3 84/24 85/25 94/21 94/23 96/20 111/3 112/2 112/9 116/20 117/8 130/2 130/6 132/6 132/6 134/2 134/2 134/12 137/22 139/19 141/1 146/9 153/16 158/15 161/2 161/19 165/3 167/18 170/11 172/16 173/2 176/5 176/10 176/16 they [88] 7/13 9/10 10/6 14/5 14/15 14/21 14/22 16/17 20/18 21/20 21/21 25/18 27/13 30/6 31/7 32/3 35/15 36/11 38/22 45/7 46/25 47/14 51/10 55/23 57/16 62/15 64/3 81/6 81/10 81/10 82/4 85/16 94/11 94/20 98/9 98/9 99/12 99/12 105/13 106/22 106/23 106/23 106/24 107/8 113/10 114/6 114/7 115/2 115/3 116/13 116/14 117/8 117/9 118/11 118/12 122/14 123/10 124/7 124/9 124/17 124/18 129/24 130/6 131/14 132/7 137/14 139/23 139/25 144/20 146/18 147/23 149/3 153/17 153/18 157/17	they'd [1] 168/10 they're [11] 62/15 75/20 88/9 106/23 114/4 116/13 139/23 148/23 157/24 159/12 161/4 thing [5] 42/19 48/10 134/21 146/19 176/23 things [24] 3/16 40/2 55/3 60/17 69/24 76/9 76/11 83/24 84/1 96/21 96/24 102/23 112/5 116/1 129/24 130/4 130/22 131/1 131/13 131/13 131/14 144/2 149/8 154/10 think [93] 6/11 11/4 15/4 34/16 46/2 63/5 76/25 78/20 84/5 86/24 89/11 93/10 94/19 98/13 98/19 100/3 104/3 104/19 104/19 104/21 105/2 105/11 105/15 105/16 106/8 107/23 110/6 112/15 117/3 117/4 118/10 121/24 122/4 123/24 124/8 124/10 125/21 131/21 132/4 132/6 133/4 134/12 136/5 137/12 137/14 137/15 137/17 138/16 140/25 142/17 145/4 145/20 146/19 147/24 150/10 151/1 151/19 151/22 151/23 152/4 152/4 152/21 152/23 153/9 153/21 155/3 155/17 155/21 155/25 156/12 157/4 157/9 158/20 159/21 160/12 160/19 164/4 168/22 169/14 169/16 169/22 170/22 173/25 173/25 174/15 174/18 174/20 175/19 176/18 176/18 176/18 177/16 177/20 think's [1] 176/23 thinking [4] 42/22 134/25 161/11 169/18 thinks [1] 106/21 third [12] 4/11 10/4 12/24 23/9 39/3 69/12 71/13 94/4 94/8 97/4 109/17 110/17 third party [1] 69/12 thirdly [3] 40/5 68/18 71/25 this [194]	thorough [1] 66/10 thoroughly [1] 20/14 those [109] 3/3 3/8 6/7 6/17 6/18 6/19 6/20 6/24 6/24 6/25 7/6 8/12 8/14 9/17 10/10 12/13 12/24 12/25 16/21 17/7 18/11 18/16 18/20 18/24 19/23 20/20 26/20 28/15 28/23 29/2 29/12 30/9 30/12 30/24 32/2 45/6 45/25 46/16 49/21 50/11 50/17 51/8 51/11 51/18 52/3 52/7 52/10 52/11 52/13 53/25 54/8 54/8 60/4 61/18 65/1 69/14 76/6 78/7 78/10 84/4 85/25 92/2 93/1 93/5 96/22 96/23 97/7 104/5 108/8 114/22 117/1 117/10 122/7 124/3 124/7 126/2 126/12 127/24 129/17 130/1 130/4 131/1 133/19 134/20 135/1 136/17 137/11 137/18 143/5 148/21 154/6 155/4 155/24 159/7 160/17 161/9 161/9 161/22 166/2 168/4 168/8 168/9 168/9 168/16 169/9 172/4 172/23 177/10 178/2 though [6] 12/4 18/12 54/4 80/18 137/17 157/11 thought [9] 7/10 29/1 43/19 45/24 96/25 134/7 137/6 148/25 149/24 thousands [6] 16/12 35/11 94/14 94/15 94/24 104/4 threat [3] 66/17 96/9 110/17 threaten [2] 35/23 54/21 threatening [1] 120/21 threats [19] 2/10 13/15 21/19 23/6 64/21 80/1 81/22 86/18 96/1 112/10 116/25 136/24 137/25 141/22 142/6 150/23 156/24 157/7 157/19 three [22] 5/11 5/17 14/8 38/5 40/2 67/17 92/7 94/21 95/4 96/8 96/10 97/7 100/8 102/2 112/10 116/21	

T	174/14 174/22	104/19 106/9 108/5	underlying [3] 13/8	118/20 118/22 122/11
too... [2] 174/9	transmit [1] 99/20	108/8 108/19 116/24	22/11 23/4	127/24 128/16 130/13
176/15	transmits [1] 99/22	119/7 150/11 155/8	underpin [1] 25/1	133/20 133/25 134/6
took [6] 6/23 20/13	transmitted [8] 24/18	155/16 167/2 174/19	underpinned [3] 6/4	135/14 135/20 136/23
45/4 92/3 117/14	81/23 81/25 82/17	176/19	37/16 61/1	137/7 141/8 142/13
120/24	84/8 91/7 91/11 92/1	two years [1] 10/19	underpins [2] 61/25	143/5 143/13 143/25
tool [2] 61/10 177/18	transparency [4]	two-fold [1] 104/19	127/12	144/5 144/7 144/13
toolkit [1] 21/17	9/23 116/7 151/16	type [5] 106/5 138/20	underreact [1]	145/3 145/6 148/24
tools [1] 78/12	151/20	139/9 155/18 174/17	124/19	153/15 161/3 161/5
top [5] 65/21 86/21	trap [1] 102/24	typical [2] 64/1	understand [18] 5/1	161/6 161/24 162/11
95/15 142/23 158/20	travel [2] 82/20 85/4		7/5 51/5 54/9 54/19	162/13 163/7 163/10
topic [2] 10/24 42/12	treat [2] 96/25 124/22	U	72/16 74/23 75/13	United Kingdom [65]
topics [2] 7/11 7/17	treatable [1] 96/25	UK [55] 3/24 4/1 4/16	75/23 86/16 87/10	9/6 17/22 20/8 21/8
total [1] 94/1	treated [5] 49/20	11/18 12/24 13/9 22/8	91/16 117/20 152/19	22/6 25/11 26/24 28/3
touch [1] 24/15	161/3 161/4 161/5	24/17 25/5 27/19	154/7 155/11 156/10	52/19 53/2 53/9 57/5
touched [6] 15/15	161/15	27/22 32/17 34/5 35/9	165/18	60/7 61/3 61/11 61/15
26/19 36/5 46/16 50/6	treating [1] 100/12	36/11 37/19 40/3	understandable [1]	65/11 66/5 71/15 72/2
167/3	treatment [3] 18/20	40/10 40/19 40/23	126/10	72/3 73/14 77/6 80/8
touches [1] 142/17	19/22 54/10	41/9 46/17 47/2 49/8	understanding [10]	80/16 89/16 90/1 90/5
touching [1] 11/13	treatments [1] 18/13	52/25 54/14 70/21	2/18 39/11 60/24	90/14 92/6 92/15
towards [10] 58/24	treaty [7] 146/12	71/18 72/6 87/8 90/21	103/5 103/10 131/16	95/23 96/3 100/7
83/9 86/21 87/6 89/15	146/12 146/21 147/4	90/21 111/7 122/5	150/20 151/21 153/20	103/15 105/5 118/9
97/19 97/20 97/20	147/10 147/18 148/3	122/7 124/16 128/2	158/14	118/20 118/22 122/11
174/6 176/9	tremendous [1] 17/6	128/25 131/11 131/16	understands [1] 6/5	127/24 128/16 130/13
traced [1] 159/8	trends [1] 76/14	134/21 135/3 143/2	understood [2] 35/12	133/20 134/6 135/14
tracing [4] 130/9	trials [7] 6/24 13/4	153/10 153/23 153/24	39/21	135/20 136/23 137/7
158/7 159/6 167/24	23/21 162/5 162/16	166/14 168/20 168/21	undertake [3] 16/1	141/8 142/13 143/5
track [2] 73/6 170/25	163/8 163/10	170/6 170/16 173/5	68/1 78/13	143/13 143/25 144/7
tract [1] 91/8	tribute [1] 52/9	173/7 173/14 175/6	undertaken [9] 11/6	144/13 145/3 145/6
trade [2] 12/22 82/20	tricky [1] 124/13	UK Government [3]	12/6 18/15 20/23 21/6	148/24 161/3 161/6
trade-offs [1] 12/22	trivial [1] 130/12	36/11 52/25 54/14	34/11 53/3 65/15	161/24 162/11 162/13
traditional [1] 119/3	Tropical [2] 76/24	34/5 72/6	175/23	163/10
tragedy [2] 46/17	77/10	UK Government's [2]	undertakes [1] 5/25	United Kingdom's [6]
100/20	trouble [2] 99/21	34/5 72/6	undertook [1] 77/24	32/12 66/23 67/6
tragically [1] 90/6	155/7	UK's [7] 11/23 12/12	undoubtedly [2]	73/12 96/5 144/5
train [1] 67/4	true [4] 104/3 108/7	21/4 27/14 32/19	29/12 30/3	University [1] 79/3
trained [2] 131/3	111/21 126/18	54/14 64/24	unexpected [5]	unknown [4] 140/15
150/14	trust [2] 151/20	UK-wide [1] 4/16	24/24 102/23 103/10	156/24 157/19 173/22
training [2] 29/22	151/23	Ukraine [1] 65/7	107/19 136/18	unless [2] 15/1
71/20	trusts [1] 19/15	ultimate [1] 66/12	unfairness [1] 46/3	156/12
transcript [1] 152/18	truthful [1] 51/9	ultimately [3] 58/3	unfortunately [1]	unlikely [2] 33/12
transdisciplinary [1]	try [6] 45/24 93/13	106/2 118/21	24/19	127/6
116/19	103/17 136/1 155/7	unable [4] 15/19	union [10] 32/13	unpalatable [1] 17/20
transfer [1] 33/13	171/4	15/24 16/1 34/4	64/25 141/5 141/9	unprecedented [2]
transferred [1] 4/25	trying [9] 78/4 103/6	unanswered [1]	141/23 141/23 142/1	10/18 20/15
transmissibility [7]	104/1 104/2 110/10	163/22	142/4 142/22 144/3	unreasonable [2]
105/1 106/11 106/17	112/2 114/13 117/20	uncertain [1] 109/24	Union's [1] 143/14	102/13 117/4
108/20 108/24 108/25	134/9	uncomfortable [1]	unique [3] 42/20 49/8	unsparing [1] 28/2
109/2	turn [13] 1/5 32/25	28/1	57/14	until [6] 123/7 124/7
transmissible [3]	66/8 80/6 81/1 96/8	unconfirmed [1]	uniquely [1] 4/7	125/11 132/23 168/2
99/16 101/15 122/23	103/19 104/13 105/14	100/24	unit [3] 58/8 58/9	178/17
transmission [36]	108/13 124/3 129/2	under [16] 11/22	70/6	untouched [1] 52/22
17/11 24/14 76/15	160/24	42/20 47/19 47/23	United [76] 9/6 17/22	untreatable [1] 97/1
82/18 82/21 82/23	Turning [5] 7/17	53/1 54/1 54/4 60/5	20/8 21/8 22/6 25/11	unusual [2] 120/19
84/14 87/9 91/6 91/14	40/20 59/1 65/13	112/7 120/18 127/17	26/24 28/3 32/12	139/17
91/18 91/21 91/23	101/24	128/9 144/16 144/19	52/19 53/2 53/9 57/5	unwell [1] 15/25
96/14 99/10 100/16	turns [2] 27/11	146/11 175/22	60/7 61/3 61/11 61/15	up [27] 13/7 20/25
100/17 100/18 100/21	104/18	under way [1] 146/11	65/11 66/5 66/23 67/6	23/10 23/24 24/7 25/3
111/19 122/22 123/6	twelfth [1] 73/3	underestimated [1]	71/15 72/2 72/3 73/12	43/25 46/21 62/24
123/11 123/14 123/21	two [28] 7/11 10/19	32/17	73/14 77/6 80/8 80/11	66/10 70/3 74/20
123/22 125/19 126/11	11/15 36/23 42/12	underfoot [1] 146/18	80/16 89/16 90/1 90/5	88/13 99/5 110/13
136/13 136/14 165/19	56/14 70/6 77/15	undergone [1] 128/2	90/14 92/6 92/15	129/4 130/11 134/13
173/17 173/24 174/12	82/14 84/4 84/12 89/7	underinformed [1]	95/23 96/3 96/5 100/7	135/5 146/11 158/6
	91/12 99/8 104/5	13/25	103/15 105/5 118/9	158/7 159/6 165/7

<p>U</p> <p>up... [3] 173/9 175/3 176/4</p> <p>updated [1] 43/8</p> <p>updating [1] 72/23</p> <p>upgraded [1] 70/18</p> <p>upon [16] 3/18 14/25 18/9 21/21 34/4 43/3 50/2 51/8 56/9 75/22 85/7 93/2 109/10 124/15 129/25 159/20</p> <p>upper [2] 92/12 97/20</p> <p>urbanisation [1] 85/9</p> <p>urgent [1] 171/10</p> <p>us [41] 15/22 16/5 17/3 17/15 54/19 55/8 55/10 75/2 76/19 97/2 98/13 102/11 102/22 104/14 104/20 104/23 105/10 106/2 106/17 115/10 116/23 122/7 122/8 129/14 131/4 136/19 136/23 139/11 141/16 147/5 147/22 148/2 153/1 157/8 160/22 161/16 165/23 168/19 177/10 177/25 178/9</p> <p>usage [1] 14/1</p> <p>use [14] 21/9 43/12 56/8 84/2 96/21 107/25 110/12 111/1 111/14 111/18 112/11 112/23 132/22 162/25</p> <p>used [4] 74/3 144/20 144/21 155/19</p> <p>useful [5] 30/9 39/24 135/2 137/12 137/16</p> <p>usually [2] 84/16 93/14</p> <p>utmost [1] 49/20</p>	<p>variance [1] 98/6</p> <p>variants [1] 18/14</p> <p>varies [1] 63/25</p> <p>variety [1] 10/16</p> <p>various [10] 20/4 20/19 29/20 115/6 132/6 132/7 134/2 135/19 137/8 144/16</p> <p>vary [2] 53/22 114/10</p> <p>vast [2] 59/2 77/5</p> <p>vector [5] 24/15 84/7 84/7 84/12 85/1</p> <p>vectors [1] 84/5</p> <p>verge [1] 1/22</p> <p>verify [1] 116/2</p> <p>version [3] 71/5 131/4 156/18</p> <p>versions [1] 107/12</p> <p>versus [2] 106/12 142/2</p> <p>very [132] 1/12 2/20 2/23 2/24 3/4 5/9 6/10 15/2 16/15 16/16 17/25 18/7 18/13 23/21 24/7 24/18 24/21 26/13 28/8 34/5 34/12 34/15 45/12 46/13 49/7 51/18 51/20 73/20 74/2 74/17 76/3 76/6 78/22 86/16 88/2 89/18 90/7 90/22 90/22 91/15 91/20 91/24 92/2 93/20 95/7 95/8 95/13 98/19 98/23 99/20 99/21 100/2 100/6 100/7 100/11 100/19 100/19 100/24 101/4 101/6 101/10 101/10 101/10 101/10 102/18 103/3 104/9 104/21 105/17 107/6 108/5 108/12 110/7 111/24 112/4 113/8 116/1 117/7 117/17 120/6 121/15 122/5 123/25 124/12 126/17 126/18 126/18 127/6 127/7 131/7 131/10 133/10 133/11 137/1 137/21 140/19 140/21 142/11 146/24 146/24 146/24 147/3 147/12 148/23 149/10 151/22 152/15 154/3 154/16 155/17 158/2 158/12 158/17 159/12 162/7 162/12 162/18 163/9 163/9 166/4 169/1 169/19 170/6 173/13 176/23 177/10 177/15 178/2 178/4 178/4 178/8 178/9 178/13</p> <p>Veterinary [1] 79/4</p>	<p>victims [1] 50/10</p> <p>video [1] 15/23</p> <p>Vietnam [1] 167/12</p> <p>view [15] 17/18 31/13 50/7 63/15 78/11 117/14 121/11 123/9 123/23 124/18 131/22 133/8 137/20 154/21 156/6</p> <p>viewed [1] 4/5</p> <p>viewpoint [2] 105/8 124/3</p> <p>views [2] 29/2 55/23</p> <p>vigilant [1] 18/23</p> <p>viral [1] 106/19</p> <p>virtue [1] 111/14</p> <p>virus [18] 17/10 24/3 52/16 53/20 82/17 83/1 85/22 85/23 88/10 88/13 88/14 100/3 100/4 104/12 106/22 107/19 136/24 137/25</p> <p>viruses [7] 21/20 96/19 98/7 98/9 98/10 137/24 161/1</p> <p>visibility [1] 116/6</p> <p>vision [2] 45/21 153/14</p> <p>visit [1] 15/24</p> <p>vital [6] 16/2 25/25 28/2 55/13 56/12 67/5</p> <p>VIVALDI [1] 163/14</p> <p>voices [1] 74/20</p> <p>voluntarily [1] 14/21</p> <p>voluntary [9] 16/11 19/13 39/9 60/9 70/24 72/15 72/24 128/17 175/23</p> <p>volunteered [1] 6/24</p> <p>vulnerabilities [2] 10/22 18/16</p> <p>vulnerability [2] 13/6 72/19</p> <p>vulnerable [6] 6/25 19/8 30/21 72/21 72/25 85/16</p>	<p>war [1] 20/6</p> <p>warfare [2] 76/12 111/15</p> <p>warned [1] 120/24</p> <p>warning [2] 143/14 143/18</p> <p>warnings [1] 121/6</p> <p>was [226]</p> <p>was 2018 [1] 78/21</p> <p>wasn't [9] 100/17 106/6 108/10 122/2 125/11 152/20 168/19 170/20 175/1</p> <p>waste [1] 124/4</p> <p>watching [2] 2/24 45/6</p> <p>wave [3] 29/6 122/6 168/6</p> <p>way [38] 2/4 2/7 6/2 8/10 10/7 10/23 17/22 24/2 25/19 26/8 34/14 36/10 39/15 62/14 69/23 76/10 84/9 93/7 100/9 102/22 103/1 109/6 110/25 113/19 122/15 123/23 134/9 145/12 146/11 154/10 157/2 159/2 162/8 163/21 166/17 171/24 172/18 176/16</p> <p>ways [5] 11/12 51/8 92/13 115/6 118/6</p> <p>we [245]</p> <p>we haven't [1] 95/15</p> <p>we'd [4] 136/7 164/5 174/18 174/20</p> <p>we'll [13] 45/13 83/20 87/23 89/13 97/6 120/9 132/14 134/17 135/17 135/18 138/16 146/2 151/14</p> <p>we're [25] 1/12 2/23 75/1 78/10 83/13 83/17 86/24 94/25 115/19 115/20 115/21 116/15 119/3 124/1 127/9 129/20 141/7 155/4 157/14 157/14 157/15 159/21 161/11 167/23 177/25</p> <p>we've [15] 102/1 104/8 107/5 115/20 116/25 123/25 136/9 149/6 150/1 151/1 156/2 174/15 174/16 177/23 177/24</p> <p>weakness [6] 13/5 13/23 14/1 22/9 24/1 24/10</p> <p>weaknesses [3] 13/17 30/6 66/22</p> <p>weather [1] 31/10</p> <p>Weatherby [7] 166/13 166/19 166/22</p>	<p>166/23 167/1 178/4 180/10</p> <p>Wednesday [1] 1/1</p> <p>week [5] 51/4 80/10 80/19 139/20 147/4</p> <p>weeks [2] 2/3 45/10</p> <p>weigh [2] 9/11 12/21</p> <p>weighting [1] 172/6</p> <p>welcome [3] 74/1 160/19 165/10</p> <p>welcomes [3] 26/3 53/23 54/16</p> <p>well [68] 1/18 2/24 13/1 16/12 21/12 21/12 21/15 22/8 25/12 27/5 28/23 28/25 29/1 30/25 31/21 43/14 47/7 50/11 50/15 50/23 54/18 54/20 62/5 69/21 73/14 74/9 84/4 87/9 91/10 98/9 98/13 99/20 106/24 108/8 108/12 109/11 110/1 112/15 114/7 116/13 121/10 122/10 125/17 127/7 128/7 128/13 128/14 128/16 128/20 128/25 131/24 132/13 140/25 142/21 143/4 148/6 151/7 151/13 152/3 155/25 160/20 164/5 172/9 173/2 173/7 175/14 177/20 178/13</p> <p>well established [1] 31/21</p> <p>well-being [3] 21/15 47/7 50/23</p> <p>wellbeing [3] 3/14 5/15 5/22</p> <p>Welsh [23] 26/15 26/18 27/23 28/5 28/8 28/18 29/4 29/8 29/14 29/18 29/20 29/21 30/4 30/10 31/12 31/15 31/22 31/23 31/24 33/18 34/4 34/13 179/14</p> <p>Welsh Government [12] 26/18 27/23 28/5 28/8 29/4 29/8 29/14 30/4 31/22 33/18 34/4 34/13</p> <p>Welsh Government's [5] 28/18 29/18 29/20 30/10 31/12</p> <p>Welsh NHS [1] 31/15</p> <p>went [6] 21/12 48/25 52/15 54/20 145/12 163/17</p> <p>were [100] 4/25 6/19 6/20 9/21 9/21 10/19 11/8 12/25 13/23</p>
<p>V</p> <p>vaccine [9] 20/24 21/3 24/20 52/13 133/20 133/21 134/21 172/2 173/7</p> <p>vaccines [16] 11/25 13/3 18/12 21/25 22/2 23/20 25/8 54/3 130/20 134/16 134/18 134/20 134/22 148/17 162/5 168/2</p> <p>Vallance [1] 8/4</p> <p>valuable [5] 20/10 140/19 140/21 151/22 157/25</p> <p>value [2] 58/2 151/16</p> <p>valued [1] 39/1</p> <p>values [1] 5/23</p> <p>Van [1] 24/20</p> <p>variable [1] 113/15</p>				

W				
were... [91] 13/23 15/19 15/22 15/24 15/25 15/25 16/18 16/21 17/12 17/16 17/19 17/21 17/23 19/14 20/17 20/18 26/23 27/15 28/12 28/23 30/11 32/2 32/18 39/22 40/6 40/7 41/22 41/25 43/14 43/14 45/24 46/7 48/11 48/22 49/10 50/6 51/11 52/5 58/10 63/7 63/9 63/13 65/1 65/22 76/25 77/4 77/9 77/11 77/21 79/13 79/22 89/16 90/3 90/5 91/5 100/1 100/7 100/19 105/18 106/13 107/7 107/8 107/9 108/8 118/10 120/10 122/1 122/5 122/8 124/17 130/15 131/24 132/3 132/5 132/7 133/6 135/23 146/22 151/2 152/21 163/8 163/12 163/13 165/15 167/6 168/2 168/13 169/13 170/1 173/9 178/8	134/14 135/1 135/23 136/15 137/17 139/22 140/3 140/12 141/17 141/25 142/17 144/15 146/16 146/20 146/21 147/5 147/20 147/22 148/25 149/2 153/17 153/21 155/8 155/12 155/22 156/7 156/25 157/2 157/5 157/7 157/21 157/24 158/15 160/5 160/20 161/19 163/1 164/19 164/20 165/2 167/23 168/11 170/8 172/19 176/5 176/20 177/13 178/8 what's [11] 3/11 64/4 114/19 116/8 117/15 117/16 117/21 122/20 125/7 127/20 128/9 whatever [13] 2/4 6/2 21/18 26/8 84/10 104/13 104/13 134/18 155/8 157/16 158/25 161/14 172/3 when [33] 4/24 8/7 17/10 30/10 32/24 41/25 43/12 50/22 51/6 51/16 53/4 58/8 66/14 78/18 83/13 85/21 105/16 112/22 113/1 113/5 113/12 113/19 114/2 114/4 115/19 116/10 120/18 122/21 123/12 125/14 154/20 174/6 174/18 Whenever [1] 37/21 where [33] 17/12 20/22 21/11 22/8 22/9 23/18 31/16 44/5 44/8 55/6 59/4 63/17 66/21 83/1 83/6 84/13 87/7 98/1 107/6 107/23 111/22 111/24 112/15 116/9 129/3 137/13 142/1 144/14 144/23 149/16 156/5 156/7 173/23 whereas [6] 92/24 93/4 101/3 112/8 117/8 169/1 whereby [3] 36/19 136/1 166/9 wherever [1] 83/3 wherewithal [1] 159/14 whether [34] 13/14 27/18 27/22 30/14 31/8 33/21 35/19 37/2 88/18 91/2 91/3 91/4 91/4 91/6 93/6 97/18 100/23 101/8 104/11 111/13 111/17 113/20 113/22 113/23 113/23	114/6 114/7 119/23 130/15 131/22 132/20 159/5 162/8 172/10 which [184] while [9] 12/15 41/24 64/15 105/18 108/2 122/25 123/5 162/18 165/11 whilst [8] 23/15 58/19 65/11 67/8 127/9 134/6 150/24 160/7 White [1] 34/23 Whitty [1] 8/5 Whitworth [14] 74/10 74/12 74/16 75/8 75/19 76/23 86/8 103/21 132/19 133/5 166/3 169/13 178/7 180/4 who [80] 2/19 2/22 2/23 3/3 3/6 6/19 6/20 6/23 6/24 6/24 6/25 7/20 8/12 8/14 9/11 14/19 15/12 15/13 15/25 16/13 16/20 16/21 16/25 18/24 26/20 29/17 42/19 45/25 46/16 49/21 50/2 50/6 50/24 51/25 52/3 52/7 52/10 52/13 52/14 75/22 85/15 85/16 87/13 87/13 91/16 92/24 93/5 100/12 106/21 107/7 118/13 122/7 123/5 125/10 125/24 126/9 127/18 128/12 129/22 129/24 129/25 134/14 139/18 140/2 143/2 143/3 143/8 148/12 150/13 151/21 153/17 157/22 159/7 161/3 161/4 161/6 170/23 172/5 172/12 175/9 WHO's [1] 127/12 whole [12] 14/3 25/21 31/5 32/23 37/2 57/19 66/17 83/17 86/25 97/22 116/14 177/23 wholly [1] 17/20 whom [2] 7/4 171/14 whose [3] 18/20 51/11 52/16 why [18] 32/18 51/6 81/14 81/16 81/19 84/23 90/10 107/20 115/5 115/9 116/22 151/16 161/8 162/13 168/19 168/20 174/5 176/8 wide [13] 4/1 4/16 7/25 10/15 11/14	36/20 39/2 41/9 41/11 60/23 63/18 64/21 113/21 wide-ranging [2] 63/18 64/21 widely [3] 69/16 113/16 164/25 wider [12] 1/21 2/23 6/22 12/9 35/9 47/11 49/17 63/22 82/13 82/21 117/18 177/3 widespread [2] 100/17 100/21 widest [1] 62/9 will [110] 1/3 2/22 4/1 4/17 5/25 6/2 6/7 12/1 12/3 14/4 14/7 16/6 17/25 18/4 20/4 22/16 24/23 24/24 25/12 25/25 27/10 27/18 27/24 29/2 29/13 30/3 30/14 30/17 31/18 32/5 32/9 32/11 33/8 33/16 33/17 34/9 34/13 43/2 46/18 48/4 48/11 49/20 49/23 51/12 51/15 52/18 53/12 53/17 53/18 53/22 54/22 55/2 56/3 56/6 59/22 60/3 60/16 61/12 64/2 66/19 73/16 74/25 75/2 75/14 75/22 76/5 86/21 91/9 97/19 98/13 98/24 99/15 102/13 113/11 113/21 114/10 114/11 114/22 114/24 115/4 115/13 115/18 122/22 123/13 123/21 123/21 124/12 125/2 125/17 130/7 130/8 133/3 136/25 140/2 140/6 140/9 142/20 142/22 146/7 147/1 147/2 147/5 147/6 147/10 147/12 147/20 147/25 150/25 152/8 157/13 willingness [1] 44/23 wish [10] 1/12 7/5 9/9 15/10 21/10 33/20 51/12 166/7 166/10 166/11 wished [1] 143/15 wishes [2] 16/7 166/20 withdrew [1] 178/10 within [33] 3/18 13/9 16/8 22/6 24/17 36/22 38/7 39/18 39/21 42/4 47/8 48/1 48/14 57/16 57/20 58/7 59/3 75/10 91/20 95/3 97/22 98/6 103/12 137/19 144/3	147/14 149/10 164/5 165/1 167/20 167/25 173/16 177/1 without [4] 3/4 14/17 17/3 67/8 witness [5] 11/9 44/20 55/22 65/16 120/3 witnesses [8] 1/23 29/14 30/4 55/21 56/3 146/3 166/16 178/10 wolf [3] 115/3 115/16 121/17 Women [1] 58/14 won't [2] 73/25 166/17 wonder [1] 162/8 word [5] 20/15 84/7 84/12 85/19 124/20 words [1] 36/19 work [51] 1/13 1/17 1/19 2/19 3/3 5/20 6/2 7/14 7/16 8/22 9/1 10/15 10/25 11/10 12/3 12/6 14/11 14/24 18/14 20/22 24/5 26/3 26/7 28/7 28/15 29/6 29/16 29/16 29/25 30/23 32/19 32/23 33/2 33/18 34/11 34/12 37/22 55/14 58/23 60/9 63/2 63/5 65/14 73/13 75/10 77/16 78/13 134/17 140/3 140/7 150/22 worked [6] 28/25 29/1 29/6 52/13 79/17 164/4 worker [3] 91/22 100/12 100/14 workers [1] 123/8 workforce [1] 23/2 working [16] 2/12 11/12 16/8 17/7 31/21 32/2 44/14 55/19 72/25 77/5 116/20 118/16 132/9 143/1 145/24 153/6 workload [1] 14/20 works [5] 36/25 57/4 63/15 65/8 109/6 workstreams [1] 63/9 world [41] 20/20 24/7 40/3 71/19 77/11 77/16 78/1 79/14 81/5 82/6 83/1 86/18 89/12 103/15 103/22 105/12 114/5 114/20 116/7 116/9 118/10 118/22 120/25 121/5 121/14 122/25 123/2 125/6 125/14 125/25 127/5 127/7 127/9 133/14

W
world... [7] 134/15
 139/18 140/13 150/23
 157/25 176/13 177/21
world-leading [1]
 20/20
worldwide [5] 53/3
 81/10 89/16 100/6
 115/7
worried [3] 78/10
 124/7 124/10
worry [1] 119/17
worse [1] 117/23
worst [3] 24/25
 123/13 123/15
would [85] 9/8 12/18
 13/17 14/17 17/4 18/2
 18/7 28/6 35/8 44/19
 46/4 49/2 52/2 74/1
 78/19 83/15 84/18
 84/19 96/6 98/20
 101/10 104/3 104/24
 105/3 105/19 106/14
 106/14 107/11 108/1
 110/14 110/14 112/7
 121/12 121/22 121/22
 124/4 125/12 125/22
 126/25 130/2 135/7
 135/10 136/12 136/13
 152/5 152/17 155/23
 160/5 160/21 160/23
 161/8 161/18 161/19
 161/21 165/18 165/21
 165/23 166/10 166/11
 168/14 168/16 170/22
 171/15 171/16 171/20
 171/24 172/1 172/3
 172/5 172/7 172/9
 172/11 172/12 172/18
 172/23 172/25 173/3
 173/10 173/18 174/1
 174/23 175/1 176/16
 176/18 176/20
wouldn't [3] 84/18
 117/17 135/25
wound [1] 65/5
write [1] 59/7
written [2] 50/1 139/5
wrong [2] 17/16
 163/18
Wuhan [1] 120/20

Y
Yeah [1] 152/21
year [6] 5/11 5/17
 61/12 65/3 79/23
 109/21
years [16] 5/5 10/19
 13/14 19/21 31/15
 31/23 32/10 36/7
 43/18 44/11 58/19
 81/17 110/3 115/21
 139/16 168/11

Yellowhammer [1]
 49/6
yes [123] 46/5 46/11
 74/5 76/5 76/18 77/3
 77/14 77/23 78/3 78/9
 78/17 79/16 80/18
 80/20 80/23 87/4
 87/20 88/17 89/6 89/9
 89/10 89/21 89/22
 90/9 90/15 90/16
 90/24 91/9 91/25
 92/21 93/8 97/15
 99/18 100/15 101/1
 101/2 101/16 101/20
 103/20 104/3 106/8
 107/14 110/2 113/25
 115/1 117/13 117/24
 118/8 119/18 119/25
 122/12 122/16 124/9
 125/1 125/22 126/16
 126/24 127/14 127/22
 128/11 128/24 130/24
 132/3 132/11 132/25
 136/5 136/20 138/4
 138/11 138/23 140/1
 141/12 141/14 141/18
 143/7 149/5 151/4
 152/17 154/18 154/24
 154/25 156/17 159/16
 162/23 163/4 163/4
 163/4 163/15 164/4
 165/23 167/12 167/14
 167/15 168/2 168/3
 168/6 168/7 168/14
 168/15 168/18 168/25
 169/3 169/6 169/7
 169/10 169/25 170/4
 170/10 170/15 170/22
 171/8 171/12 171/18
 172/12 173/12 174/20
 174/23 174/25 175/17
 176/22 177/2 177/9
 178/14
yesterday [6] 1/6
 15/23 21/6 31/2 31/25
 36/5
yesterday's [1] 26/21
yet [8] 35/17 44/5
 44/19 63/6 125/10
 146/20 146/25 147/22
you [350]
you'd [2] 88/11
 117/17
you'll [3] 99/24
 154/22 166/5
you're [11] 15/2
 73/23 79/4 79/5
 119/22 126/3 136/15
 155/19 163/1 163/2
 174/7
you've [28] 46/10
 75/7 78/23 79/17
 80/21 81/13 83/10
 85/4 85/10 104/23

105/23 106/17 107/1
 113/9 119/14 119/16
 121/8 124/22 135/9
 137/4 150/18 152/12
 154/22 155/2 159/14
 173/20 174/6 174/10
young [1] 4/13
your [76] 1/20 2/4
 12/2 14/7 28/15 29/14
 33/18 34/11 45/22
 50/13 51/4 56/6 73/22
 73/24 74/17 74/20
 75/10 75/10 75/12
 75/13 75/16 75/22
 75/23 76/1 76/1 76/21
 76/22 77/16 77/17
 78/24 79/10 80/6
 80/17 80/20 81/14
 83/9 95/20 98/19
 101/24 101/25 103/23
 104/23 108/13 108/14
 108/16 113/6 115/12
 119/15 123/23 124/14
 124/21 125/5 129/2
 133/12 134/1 138/13
 139/5 145/11 145/24
 145/25 148/6 149/2
 150/5 155/1 155/9
 156/1 156/5 157/17
 158/15 158/22 159/15
 167/5 167/5 168/18
 170/15 174/8
Your Ladyship [1]
 14/7
your Ladyship's [1]
 12/2
yourself [2] 107/3
 114/19
yourselves [1] 75/21

Z
zero [1] 110/21
Zika [1] 121/10
ZOE [1] 163/14
zoom [3] 86/24 95/21
 154/2
zoonotic [19] 76/15
 81/24 95/25 96/11
 96/13 96/15 97/9
 97/10 97/11 97/18
 98/7 98/12 98/16
 104/12 111/17 116/25
 117/4 137/8 138/3
zoonotically [1]
 82/24