Witness Name: Jeremy Farrar

Statement No. :01

Exhibits: JF/1 – JF/41

Dated: 28 April 2023

UK COVID-19 INQUIRY

WITNESS STATEMENT OF JEREMY FARRAR

I, **JEREMY FARRAR,** will say as follows:

1. Professional background

1.1. I was Director of the Wellcome Trust from October 2013 until February 2023.

1.2. Full details of the Wellcome Trust including structure, governance, membership, strategies and research themes can be found at the Wellcome web site.

2. Role played by the Wellcome Trust during the Covid-19 pandemic

2.1. Between January 2020 and April 2023, I served on a number of groups in an individual capacity. I also served on a number of other parts of the UK and international response, including but not limited to;

- Member of SAGE
- Vaccine Taskforce
- ONS Infection Survey (Co-Chaired the meeting that established the study - Therapeutics Taskforce
- Member of the "DATA DEBRIEF GROUP" Thursday evening calls 2020-2023 - Member of the Covid Infection Digital Survey Advisory board
- Member of the National Core Studies Group
- Advisor to Professor James Calder's Advisory Group on Sporting Events in the UK during COVID
- Member of the ACT-A Principles Group - **[JF/1 - INQ000183306]**

- Member of the GPMB and Co-Chair 2022-2023 **[JF/2 - INQ000183317]**
- Wrote a proposal to develop an equitable global pathogen surveillance network in 2021 that could prevent and respond to emerging and endemic infectious diseases at speed and at scale. "This report has been written by Sir Jeremy Farrar, Director of Wellcome, at the request of the UK Presidency of the G7. It draws on contributions from a large number of practitioners and global health experts." **[JF/3 - INQ000183321]**

3. SAGE and its sub-groups

3.1. The PHE Serology Group was critically important in establishing the extent of community transmission of SARS-CoV2 in Q1 2020. Its data was available in real time to Sub-Groups of SAGE (SPI-M and NERVTAG in particular) and to SAGE itself. At the start of the pandemic reliable and robust serological tests were not available and needed to be developed and then validated. The capacity in the system during January – May 2020 to analyse serological samples was very limited.

3.2. I believe the PHE Serology Group worked effectively with Sub-Groups of SAGE and SAGE itself. The challenge was the limited capacity in the diagnostic testing system to analyse the samples.

3.3. I believe the work of the Sub-Groups was consistently incorporated into SAGE advice.

4. Role as Co-Chair of the PHE Serology Working Group

4.1. I was asked to Co-Chair the PHE Serology Working Group by Professor Sharon Peacock in consultation with Dr Patrick Vallance (CSO UK).

4.2. With the support of many people (in particular Abby Taylor, then of Wellcome, the Blood Transfusion Service and Tim Brooks at PHE Porton Down)) this Working Group worked with PHE to set up the first serological assays for SARS-CoV2 and then worked with the Blood Transfusion Service (BTS) to gain the first 'community based serological results" on 2nd April 2020.

4.3. This data was generated from samples taken from volunteers as part of the blood

donation service. We knew this was an imperfect approach, but it was the fastest way to get (imperfect) data on community transmission (volunteers to the BTS are not representative of the general population – only 18-65-year-old, more females, generally well in the weeks prior to donation, and others).

4.4. In parallel to setting up this the Sub-Group partnered with the Office of National Statistics, University of Oxford, University of Manchester and Wellcome to set up what became the ONS Infection Survey. I co-chaired the first meeting with Ian Diamond (Chief Statistician UK) in April 2020 that led to the ONS Infection Survey.

4.5. This world leading study was set up to get reliable nationwide, unbiased data on community transmission, epidemiological and genetic surveillance of SARS-CoV2. Everyone involved, the volunteers, those who organised the survey and those who analysed the data deserves the very highest praise. This work was crucial to understanding the pandemic in the UK and was truly world leading.

5. Evolution of JBC through 2020 to working more effectively and making a "positive impact" [JF/4 - INQ000056616]

5.1. I believe that the JBC became important in bringing a cross-sector and cross-government perspective to the pandemic. People who were recruited to the JBC were outstanding individuals, well led, drawn from a diverse range of backgrounds and disciplines and served as a central "clearing house" of information from multiple sectors. With the setting up of the JBC it felt as though there was a better review of the complex, diverse and dynamic data and enhanced coordination.

6. **The strengths and weaknesses of SAGE provided advice to the government on the basis of consensus among its attendees, and that the CSA/CMO being the interlocutors with policy-makers**

6.1. The Co-Chairs of SAGE (CSA and CMO), encouraged robust debate and challenge, in the Sub-Groups as well as in SAGE. There were inevitably differences of opinion and the Co-Chairs deserve great credit for encouraging an open and frank debate. There was no attempt to force consensus and if there were disagreements that could not be brought together, either the disagreement was communicated to policy-makers, or if there was time existing or new data was reanalysed.

6.2. The conduit for SAGE was through CSA and CMO, individual SAGE members had very little interaction with senior politicians that I was aware of.

6.3. Public health and clinical input into SAGE and its sub-groups;

6.3.1. You can always have more people involved, but the total number of people contributing directly and indirectly to SAGE and its Sub-Groups and to affiliated groups (i.e. through UKRI, NIHR, NHS, PHE, FCDO, multiple ministries etc) ran into the hundreds. Regularly additional expertise was brought into SAGE, its Sub-Groups and others. I believe there was enough public health and clinical input into SAGE, its Sub-Groups and to the affiliated groups.

6.3.2. SAGE did not have an implementation mandate, the advice of SAGE was through the CSO and CMO to the implementing agencies (NHS, PHE, across government) and into the political decision making. This separation of scientific advice from implementation was clear, but did cause issues when the advice could not be, or was not, implemented. It is in the implementation that lies huge challenges, especially in a system with little spare capacity or resilience. It did feel that there was a disconnect between advice and the ability to implement within constrained systems. There also felt to be a disconnect between the parts of the health system leadership and the realities on the "ground", i.e. within the NHS.

6.4. Whether you believe that the work of SAGE and its sub-groups was subjected to sufficient challenge. If not, do you consider that a broader range of expertise may have helped to challenge the thinking of these groups?

6.4.1. Through the work of the Sub-Groups and at SAGE itself I believe there was a robust challenge, encouraged by the Chairs.

6.4.2. It was regrettable that the interaction with the "Independent SAGE" group was not more constructive. In future I would like to see a group like that one-step removed from the day-2-day functioning of SAGE but as part of a constructive partnership as an outside challenge. I had experience of interacting with such a group in the USA during the pandemic.

7. Views about the desirability/appropriateness of SAGE scientists expressing

publicly (e.g. on news programmes) their personal views on scientific issues relating to Covid-19 that were inconsistent with consensus advice agreed by SAGE or one of its sub-committees.

7.1. I, like many others, were independent scientists serving in a voluntary capacity on SAGE, a role I believe covered by the 2011 "Code of Practice for Scientific Advisory Committees" until revisions in 2021.

7.2. The 2011 Code of Practice for SACs is clear that independent scientists are free to publicly communicate their advice to the Government, including when it appears inconsistent with Government policy.

7.3. When independent scientists genuinely felt uncomfortable about decisions which do not match the scientific advice, they need to be able to voice concerns publicly if necessary.

7.4. I would argue that it is crucial to the credibility of SAGE that there were, and will be in the future independent scientists, who retain their independence and serve on SAGE.

7.5. If there are incorrect claims that policy decisions are fully endorsed by SAGE, there needs to be a pathway for independent challenge, which government employees may not have been able to do. This comes down to mutual trust and respect between the Government and the SAC.

8. Do you believe that SAGE and its sub-groups took sufficient account of international perspectives in the early months of the pandemic and if not, why not?

8.1. The international links could have been stronger in the early months of the pandemic, they certainly became more systematic and stronger later in 2020 and 2021 thanks to the work of DFID, FCO and academic colleagues. But in the early months it depended on personal networks and ad hoc links. I believe there could have been stronger systematic links to WHO, WHO Euro, European CDC and particularly to Asia learning lessons from China, Korea, Japan, Viet Nam, Singapore and others in Q1 and Q2 2020.

9. **Please explain whether you agree with the opinion of the Institute for**

Government that "in the initial months, ministers put too much weight on SAGE - relying on it to fill the gap in government strategy and decision-making that it was not its role to me." [JF/5 - INQ000215635]

9.1. Only in part. SAGE's role was not to define strategy, or make decisions, both are the preserve of politicians. There was a gap in central government on defining the strategy, coordinating and implementing consistent decision making at a national and local level. See later comments.

10. Issues which impacted on the work of SAGE and its sub-groups during the pandemic

10.1. In a fast moving, uncertain and prolonged crisis like the pandemic, it is early access to resources that makes a disproportionate impact on the response. This was true nationally and internationally with resources not made available early or fast enough. This funding is needed immediately, at risk and although some of it may prove unnecessary or not work, it is essential to get work started. Important lessons from the work of Dame Kate Bingham and colleagues on the Vaccine Taskforce and their willingness to take risk early and back many approaches not knowing which would work.

10.2. Pay tribute to the CSA and CMO for ensuing funds were subsequently made available for groups through the National Core Studies including the Vaccine Taskforce but many of the independent scientists contributing to SAGE had to work reprioritise existing budgets, with existing staff and work 24/7. This led quickly to burn out and over-stretch.

11. The Early Stages of the Pandemic

12. **Work undertaken by SAGE and its sub-groups, particularly the PHE Serology Working Group, during the period January - March 2020**

12.1. The growth rate, incubation period and mortality rate come from the composite of a wide range of data that was analysed and when required modelled through the SPI-M Sub Group of SAGE, through the ISARIC Databases, NHS data and from data available and shared internationally. The systematic serological data in the UK from the ONS Infection Survey was only available at the start of April. All this when

available is recorded in the SAGE summaries of January – March 2020.

13. In your book, Spike: The Virus vs. The People, you expressed the view that "it felt as if there might only be a small window to act, but nobody had bothered to open it." Please explain what you meant by this statement. [JF/6 - INQ000214802] Please also build upon the following observations that you made: "The 'mitigation' plans looked dangerously inadequate. Operationally, the UK was desperately behind the curve." [JF/6 - INQ000214802] As the pandemic progressed...I started to become more concerned that Government decisions were not following a path that would see the quickest end to the pandemic." [JF/4 - INQ000056616]

13.1. An epidemic of a pathogen with the following characteristics – Respiratory spread, asymptomatic transmission, clinical spectrum from asymptomatic-2-severe-2-death, little or no human immunity, r0 above 1, novel virus, no known treatment or vaccine etc – is extraordinary difficult to control. The best chance is with existing resilient systems with spare capacity, early action, consistency and experience of dealing with epidemics in your midst. Other countries (Singapore, Korea, Japan, Viet Nam, Germany, Norway, and others) took more decisive early action and put in place preparation for the impending crisis. Many of these countries also had more resilience and capacity in their health systems.

13.2. From 24 January 2020 all of this was known. There was a short window in January, February and possibly into March 2020 to prepare for the impending global impact. There was another opportunity to prepare during Q2/3 2020 for subsequent waves and again in Q4 2020 when it was clear that safe, effective, and available vaccines would soon be ready.

13.3. My view is there was not enough urgency in Q1 2020, the summer of 2020 was not used well enough, and the lessons of January-April 2020 were not learnt and acted upon later in 2020 to prepare for the waves of Q4 2020 and Q1 2021 when safe and effective vaccines and treatments were very soon going to be available.

13.4. Once you get behind the curve of such an epidemic it is very difficult.

14. A book by Professor Mark Woolhouse referred to "a troubling lack of urgency" in the UK during the initial months of the pandemic. [JF/7 - INQ000215537]. Do you agree with this statement? If so, what do you believe to have been the reasons for

this lack of urgency, and how did it compare with the initial response of other countries? What role, if any, do you consider the World Health Organisation to have played in the timing of the UK's response? What role, if any, do you consider was played by "optimism bias" in the early stages of the pandemic? [JF/7 - INQ000215537]

14.1 I agree with this statement from Professor Mark Woolhouse. I do not know why there was a lack of urgency, possibly; limited experience of dealing with epidemics actually happening in the UK, the 'boy who cried wolf", legacy from criticism of 'over-reacting' to the 2009 influenza pandemic, 'it could not happen here', optimism and confirmation bias, overly optimistic about resilience and capacity within the health system, under-estimate of the degree of health inequality in UK, underestimating the global disruption to supply chains, the impact on every sector beyond health and more.

14.2 I think the stark warnings in January and February from the WHO were very clear "act now and prepare". Unfortunately, the message from the WHO was too often considered only relevant for low- and middle-income countries. There was a sense of "UK exceptionalism'.

15. Your book refers to an email from Professor Neil Ferguson to you, Sir Patrick Vallance and Professor Chris Whitty on 24th January 2020, in which he stated that "NHS preparedness should be kicked up a gear." Please provide a copy of this email exchange to the Inquiry. How did Sir Patrick Vallance and Professor Chris Whitty respond to these concerns? Did their responses differ and, if so, how? Please set out your views on Professor Whitty's suggestion that the outbreak was "a marathon, not a sprint" and elaborate upon your reference to the "friction between waiting and wading in" that "led to a palpable tension between Patrick and Chris in the early weeks of 2020." What was the impact of the "go-slow outlook that pervaded much of the thinking in January and February 2020"? [JF/6 - INQ000214802]

15.1. Email from Professor Neil Ferguson 24 January 2020 **[JF/8 - INQ000183319]**

15.2. Responses of Sir Patrick Vallance and Professor Chris Whitty

15.2.1. Clearly very concerned and need for action and planning. No differences in

response.

15.2.2. SAGE convened.

15.2.3. Science call on the 27 January 2020 as below. [**JF/9 - INQ000183320**])

15.2.4. Long lasting epidemics and pandemics are a marathon not a sprint, but what you do at the start has a disproportionate impact as the event unfolds – acting early, even if that means 'over-reacting' is better than acting late and getting behind the epidemic curve.

15.2.5. It is invariably underestimated how much must happen between an action being discussed and then decided upon and when and to what extent it is or can be implemented – the lag phase.

15.3. Your book refers to a *"very important conference call"* that took place on 27th January 2020 [JF/6 - INQ000214802]. Please provide details of the discussions that took place during this meeting, by whom it was attended and the outcome of the discussions. Please provide the Inquiry with any notes that you made during this conference call. Were minutes taken? If so, please provide the Inquiry with a copy of those minutes.

15.4. Teleconference held on 27 January 2020 and attended by Patrick Vallance (CSA), Chris Whitty (DHSC), Mark Walport (UKRI), Fiona Watt (MRC), Jeremy Farrar (Wellcome) **[JF/6 - INQ000214802]**

15.5. This was a hugely important meeting. It set in train the scientific approach that the UK then took to Basic Science, Virology, Immunology, Epidemiology, Diagnostic testing (Individual and Community, Acute and Seroconversion), Treatment, Vaccines, Social Science, Logistics in the UK and in partnership with others globally (WHO, EU, China, Africa). I believe it was this meeting that led to the UK having available data on the epidemiology (testing, serology, individual and community leading to the ONS Infection Survey), genetic and phenotypic assessment of the virus and its evolution, trials, social science, treatments, vaccines, and more.

15.6. These were my notes from the meeting. I assume GO-Science has a minute of the meeting. I also copy below the initial advice from Rino Rappuoli Vaccine Institute

Sienna Italy

16. **Text messages between myself, Sir Patrick Vallance and Professor Chris Whitty in January 2020, relating to concerns *"that human-to-human transmission was possible, as well as asymptomatic transmission, and that there had already been geographical spread.* [JF/6 - INQ000214802]**

16.1. Relevant e-messages following the submission of an article (family cluster, H:2:H transmission, asymptomatic transmission and geographic spread) to the Lancet reviewed by Professor T. Kuiken who contacted me for advice.

16.2. The note below "Update I send internally at Wellcome – this is the 6th Update. "refers to an "N-CoV2019 Update" I started on 4 January 2020 for relevant Wellcome colleagues. I provided these on a regular basis through 2020 and 2021, the last one being #Update46 on the 12 March 2022. I can share these if helpful to the Enquiry.

16.3. Text messages between myself, Chris Whitty and Patrick Vallance **[JF/10 – INQ000303279]**

17. **At the fourth SAGE meeting on 4th February 2020, it was noted that a "lack of data-sharing is seriously hampering understanding of WN-CoV." [JF/11 - INQ000051925]. Please set out your understanding of the types of data to which this statement referred, and its impact on the understanding of and response to the coronavirus outbreak**

17.1. At the start of every epidemic there is great uncertainty (and fear, chaos, etc) about key variables, mode of transmission, r, extent of community transmission, infectious and incubation periods, when maximally infectious, case fatality and infection fatality rate, risk factors, population at risk, and many others. During January and February these data started to become available through formal and informal contacts with teams in China, in the countries initially affected and from data from settings such as cruise ships and travellers.

17.2. But the red flags inherent in an epidemic which should really worry everyone were all known and present by mid to late January 2020 (including publication of an article from Wuhan summarising the clinical and epidemiological features in the Lancet 24 January 2020); a novel virus, spread predominantly by respiratory route,

asymptomatic transmission including early in the clinical course, incubation and infectious periods, a clinical syndrome from very mild to very severe and death, all ages infected, little or no human immunity, and no immediately available rapid tests, serology, treatment or vaccine.

18. At the SAGE meeting on 13th March 2020, you had sight of the data "signposting that catastrophic scenario: that the NHS was about to collapse." Please set out the problems that you identified within the minutes for this meeting. Why do you consider that the minutes were "hazy"? Please include reference to, and build upon:

- *Your statement that the minutes "undersold the magnitude of what was coming our way."*
- *Your views on the suggestion that "any closures or restrictions would be hard to sustain" and that there would be "minor gains" from early imposition.* **[JF/6 - INQ000214802]**

18.1. The projections for capacity and pressure on NHS-E was shared at the meeting by Professor Stephen Powis National Medical Director of NHS England. They made clear the extreme pressure that NHS-E was under already and the very limited available additional potential capacity if the UK followed what was happening in Italy, France and elsewhere in Europe as well as China since January 2020.

18.2. As stated in *Spike: The Virus vs. The People* I did feel that the minutes of meetings in Q1 2020 were understated and did not capture the tone of the discussions in particular the palpable sense in the 13 March 2020 meeting that the situation was a lot further advanced than had been appreciated until that time and that the capacity in the UK system was not enough to cope with the impending crisis.

18.3. The UK, as with most countries, had no experience of prolonged closures or restrictions in response to a public health crisis. The behavioural scientists in SAGE and its sub-groups were very professional at making the case for trusted communications, explanations, consistency, trust, support for people, removing disincentives, and the importance of everyone following the guidelines, 'collective action" but there was little or no precedent or knowledge on whether such interventions would retain the public's support over time.

18.4. There is knowledge and evidence of the benefits of early compared to late interventions in public health emergencies. Evidence comes from a number of studies including the timing and lifting of interventions in cities in the USA during the 1918 Influenza pandemic, SARS-1, Ebola, SARS-CoV2 in China in 2020 and others. The timing of interventions clearly matters.

19. Please explain your reasons for considering that "the middle On 16th March 2020, you were "shocked" when the Prime Minister "did exactly what SAGE had cautioned against at the 25 February meeting." Please elaborate upon this statement. Why do you believe that social distancing measures should have been "mandatory, not optional" and what do you consider to have been the consequences of this "voluntary semi-lockdown"? [JF/6 - INQ000214802]

19.1. I copy below the relevant section from the SAGE Minutes of 25 February. The advice on behavioural considerations was very clear and highlighted below. Not just the initial voluntary action, but the need for consistency, clarity, equity, with trusted communication and when there was a sense of "collectivism", in other words, the same for everyone.

19.2. SAGE Minutes of 25 February [JF/12 - INQ000087503]

Behavioural considerations

16. Public messaging is likely to be most effective if recommendations to act are definitive, rather than presented as optional or voluntary measures.

17. Publicly perceived efficacy of any measure is key. Public uptake is significantly impacted by whether government is seen to be acting competently and whether people believe that the intervention would work.

18. The UK government will need to clearly communicate its rationale for its decisions. This is particularly important where the UK response differs to other countries.

19. Advice to businesses to begin preparing for measures such as homeworking and social distancing would give owners time to plan and demonstrate that the UK has a

strategy and is adhering to it.

ACTION: SPI-B to advise on what measures to limit spread the public will perceive as effective Risk of public disorder

20. SPI-B advised that large scale public disorder during an epidemic is very unlikely. Altruism and pro-social behaviour are more likely public responses.

21. Flash points tend to happen where there is a perceived lack of equity, substantial police absenteeism, pre-existing social tensions or where the government response is perceived to be inadequate. People actively attempting to sow discord can also be a trigger, especially online.

22. Disorder is possible if there is a perception that the police are unable to retain control. Further assessment to understand the role of the police would be of value.

23. There is commonly a difference between the evidence for and public perception of what constitute effective measures to manage spread. The aim of any measures introduced should be communicated early, clearly and consistently to improve public understanding and expectations.

24. Public compliance is likely to be enhanced when a sense of collectivism or community spirit is promoted.

25. Government messaging may benefit from alignment with WHO messaging on a potential pandemic: this could offer an opportunity to lay out what a pandemic would look like in the UK, and what businesses and individuals might need to plan for.

20. 20 of March 2020 was a critical time period in the failure of the UK response." **[JF/6 - INQ000214802]**

21. **Please state whether or not you agree with the suggestion made in a Reuters article that "for more than two months, the scientists whose advice guided Downing Street did not clearly signal their worsening fears to the public or the government." [JF/13 - INQ000220374]**

21.1. I do not agree. Whilst the minutes of SAGE meetings may have been anodyne, there were enough scientists within SAGE and beyond making it clear from late January 2020 to mid-March 2020 that there was an impending disaster going to hit the UK and that urgent action and preparation was needed.

21.2. See #Updates to Wellcome colleagues attached to this document.

22. ***The idea of pursuing a herd immunity strategy as one that "beggared belief." [JF/6 - INQ000214802]***

22.1. Herd or population immunity is when a high enough proportion of a population has immunity to a specific infection so the spread of that infection from person to person is no longer sustained.

22.2. In the early months of 2020, we knew little about SARS-CoV2. Among the many unknowns at that stage;

22.2.1. We did not know if there would be immunity after infection or how long that immunity would last, whether all individuals would generate immunity, or whether immunity would protect against infection, onwards transmission or severity of clinical illness.

22.2.2. We did not know what the consequences of infection would be across a whole population, who would be most affected, the acute severity of illness, or its long-term consequences. Long-COVID was an unknown concept in early 2020.

22.2.3. We did not know how many people would get ill or die following infection.

22.2.4. We did not know if the virus would continue to evolve or whether new variants would escape immunity to infection, transmission or illness.

22.2.5. With such uncertainty it *"beggared belief"* that a national policy would be implemented that would deliberately infect very large numbers of people and hope for the best.

23. The Timing of the First National Lockdown

23.1. Yes, sadly a national lockdown became necessary.

23.2. I believe there was an opportunity to have acted earlier with less draconian measures and prevented or delayed the need for the extreme measure of a national lockdown. A mistake made in Q1 2020 in part because of a lack of good enough data on where on the epidemic curve the UK was in February and the first few days of March 2020.

23.3. Tragically despite the availability of incredible epidemiological, genetic, public health and clinical data by Q3 and Q4 2020 the mistake was repeated in late 2020 leading to far too many lives being lost in December 2020 – March 2021 when we knew a safe and effective vaccine was going to be available imminently.

23.4. The inability to use available evidence, to learn lessons to inform policy in Q4 2020 led to an avoidable tragedy and the loss of many lives.

24. SAGE should have been "blunter" in "calling for stronger action." [JF/6 - INQ000214802]

24.1. In Q1 2020 I think the minutes of SAGE meetings were a little anodyne, nuanced and did not always reflect the tone, urgency, or growing fears reviewing the data and discussion. I never doubted that the Co-Chairs of SAGE took the tone and content of the discussions and faithfully represented them to government.

24.2. I don't think 'behavioural fatigue' was a major factor in the advice from the behavioural scientists on SAGE. If key principles were adhered to, some of which were articulated in the SAGE meeting of 25 February 2020 and along with others were oft repeated by the SPI-B Team on SAGE; Trust, Equity, Explanations and communications, Clarity, Common Purpose, Incentives and reducing disincentives etc.

25. Please state whether you agree with the Institute for Government that the desire of ministers to avoid a lockdown framed the advice commissioned from SAGE, and

contributed to the delay in considering and implementing these measures. [JF/14 - INQ000062549]. Please include reference to the views expressed by some SAGE members that the delay in recommending the first lockdown was influenced by a belief amongst scientists that this would be "politically unpalatable." [JF/6 - INQ000215635]

25.1. I think the Institute for Government was right up until the point that countries in Europe as well as in Asia imposed lockdowns. Important to remember that 'lockdowns' as a public health measure were unknown in living memory in the UK prior to COVID-19.

25.2. I do not recall a discussion at SAGE on whether a 'lockdown' would be politically palatable or not.

25.3 I agree with Professor Mark Woolhouse's statement that the UK government "could and should have done far more to protect the most vulnerable during the second wave". **[JF/15 - INQ000215632]**

26. The Institute for Government stated that there was a "lack of joined-up thinking" in government decision making as the UK exited the first national lockdown. To what extent do you agree with this finding, and the Treasury's view that "we would be able to stay ahead of the virus" after lifting restrictions? Please set out any views you may have on Professor Mark Woolhouse's comment that the sequencing of relaxations in summer 2020 "often felt arbitrary, given that the policy objective was still to keep the R number low. There were no reliable estimates of how much transmission was occurring in places like gyms, hairdressers or churches." [JF/7 – INQ000215537].

26.1 I agree with the Institute for Government that there was a *"lack of joined-up thinking"* in government decision making as the UK exited the first national lockdown. There was also a lack of planning for and implementation of measures to prepare for future scenarios through the summer of 2020.

26.2. The summer of 2020 was a wasted few months.

26.3. At the time, the Treasury's view was too optimistic that *"we would be able to stay*

ahead of the virus" after lifting restrictions. It was impossible to know that in the summer of 2020 and the likelihood was that we would face further waves later in 2020 and into 2021.

26.4. I agree with Professor Mark Woolhouse's comment that the sequencing of relaxations in summer 2020 *"often felt arbitrary, given that the policy objective was still to keep the R number low. There were no reliable estimates of how much transmission was occurring in places like gyms, hairdressers or churches.*

26.5. I would draw attention to this recent report from the Blavatnik School of Government Oxford University with a number of thoughtful and informed conclusions;

26.6. https://www.bsg.ox.ac.uk/news/lessons-crisis-preparation-covid-19 **[JF/16 - INQ000183324]**

26.7. https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long emergencies.pdf **[JF/17 - INQ000183325]**

27. **Professor Neil Ferguson commented that "the biggest shortcoming of the UK response during 2020 was the lack of clearly articulated and evidence-based strategy and policies for managing the pandemic." [JF/18 - INQ000056580] Do you agree with his assessment? If so, please explain why and if not, why not.**

27.2. I agree with this statement from Professor Neil Ferguson. I am at a loss to explain. In Q1 and Q2 2020 the data was uncertain, the situation chaotic, frightening and the event unprecedented in modern times. Mistakes would and were inevitably made.

27.3. But after the events of Q1 and Q2 2020 the tragedy was that despite the lull in the epidemic over the summer of 2020, the availability of incredible robust real time data in the UK by Q3 2020 lessons were not learnt, preparations were not made or implemented, and the government watched the wave of Q3 and Q4 2020 unfold with tragic, and I believe avoidable consequences between December 2020 – March 2021 [**JF/6 - INQ000214802].**

28. **Eat Out To Help Out' scheme**

28.2. I do not recall SAGE being consulted on the "Eat Out To Help Out' scheme.

28.3. I believe SAGE should have been consulted and asked to advise on what the consequences might be of such an intervention. "Eat Out To Help Out' was introduced in July 2020. At this time the data in the UK on community transmission and its impact on subsequent illness and death was superb.

28.4. The scheme contributed to the increase in community transmission as seen in the data from the ONS Infection Survey. It was clear by the July of 2020 that an increase in community transmission inevitably lead a few weeks later to increases in illness, hospitalisations and deaths. **[JF/19 - INQ000183326]**

29. **At the fifty-eighth meeting of SAGE on 21st September 2020, it was recommended that a national 'circuit-breaker' lockdown should be considered for immediate introduction. [JF/20 - INQ000061566]. Please provide your views on the government's response to this recommendation. For what reasons do you understand the government to have refused to accept the recommendation?**

29.2. The data from the ONS Infection Survey was clear from mid-July 2020 that transmission was increasing and from August that illness, hospitalisations and deaths were increasing.

29.3. It is deeply regrettable that the advice from SAGE on 21st September 2020 was not implemented. A decision to not act, is a decision and with consequences.

29.4. I do not know why the recommendation was not accepted.

30. Views on the introduction of the three-tier system of local restrictions during Autumn 2020

30.2. As above on the approach from July 2020 – December 2020 and summarised in my updates to Wellcome colleagues.

30.3. I think it was reasonable to try the three-tier system, given the geographic heterogeneity in community transmission at the start of the Q3 and Q4 waves.

However, with the transmission dynamics of SARS-CoV2 and the degree of mobility, the tier system was not able to prevent the spread of transmission across all regions, as Tier One became Tier Two, and then Tier Three.

31. In December 2020, Professor John Edmunds stated that "this is the worst moment of the whole epidemic" and in January 2021 that "really major additional measures" were needed. [JF/21 - INQ000273824 . Do you agree with his assessment? If so, please explain why and if not, why not

31.2. There were many bad moments during 2020 and 2021. I agree with Professor Edmunds, this was one of them.

31.3. But the events of December 2020 – February 2021, were the result of not taking actions through July – September 2020 and the decisions taken from mid-September 2020 onwards. A decision to not act was a decision in itself as stated above.

31.4. Email to colleagues at Wellcome Trust dated 13 October 2020 **[JF/22 – INQ000303280]**

31.5. Email sent to Advisors in No. 10 dated 10 October 2020 **[JF/23 – INQ000303281]**

32. Transparency and communication of scientific advice

32.2. I am not sure who this quote is from, or in what context. I think the decision to make the SAGE minutes or summaries and as much data as possible available in as close to real time as humanly possible was inspired leadership from the Co-Chairs of SAGE (PV and CW).

32.3. And also ensuring that there was a commitment to sharing the evidence and data through SAGE and all the National Core Studies (Basic Science, Public Health, Clinical, ONS Infection Survey, SIREN, RECOVERY, VIVALDI, Vaccines etc) as well as the work of the MHRA and others was made publicly available was so important.

32.4. It would have been helpful if the data from other, non-direct public health and clinical aspects across government (ie issues such as the impact on trade, jobs, and economic impact, were shared with the same degree of transparency.

33. **The Institute for Government observed that there was a "lack of transparency about SAGE's membership and advice in the first four months." [JF/5 - INQ000215635] Please provide your views as to the reasons for this lack of transparency, and any impact that it may have had on public understanding of and confidence in the government's plans.**

33.2. I agree with the Institute for Government. I did then and I would now argue for future SAGE membership, and minutes to be made available in real time.

33.3. It would need to be accompanied by support for the members of SAGE, many of whom (including myself) were the subject of remarkable levels of abuse, physical threats to them and their families including death threats.

34. The Institute for Government observed that "decision-making at the centre of government was too often chaotic and ministers failed to clearly communicate their priorities to science advisers." [JF/5 - INQ000215635] Do you agree? If so, please state why and if not, why not. Please also comment on whether you consider that ministers' lack of clarity about strategy "delayed decisions and made it harder for scientific advisers to provide useful advice. [JF/5 - INQ000215635]

34.2. I agree with the Institute for Government.

35. Please explain whether you consider that the boundaries between scientific advice and decision-making were adequately communicated to the public, including the presentation of data and statistics. To what extent, if any, do you agree with the Institute for Government that "ministers' insistence that they were 'following the science' was inaccurate and damaging"? [JF/24 - INQ000215634] In particular, please comment on whether you consider that the phrase 'following the science' blurred the line between scientific advice and policy decisions, and made it difficult for scientific advisers to set out their expert views without appearing to be accountable for policy decisions.

35.2. I agree with the Institute for Government that *"ministers' insistence that they were 'following the science' was inaccurate and damaging".*

35.3. Scientists can advise, but the Government has to determine the strategy and make

the policy decisions. In regret that other elements of that decision making across all of government were not shared in the same transparent way as SAGE minutes were. That could have put the advice through SAGE in a broader cross government context which might have been helpful to the public.

36. **Observations of the Institute for Government that the government's communication of risk was *"confusing...ministers have switched back and forth between alarm and reassurance, while failing to drive home key messages, such as the risk of gathering in indoor and poorly ventilated settings."* [JF/5 - INQ000215635]**

36.2. I agree, with the observation of the Institute for Government see email of 10 October 2020 to No10.

37. **Lessons learned by me and my colleagues in response to the Covid-19 pandemic**

37.2. There are many, from before the pandemic started through 2020, 2021 and into 2022. Many are summarised in the #Updates I shared with colleagues at Wellcome, in articles I authored in that period and statements issued by myself and other colleagues at Wellcome and shared here.

37.3. I would again draw attention to the review from the Institute of Government University of Oxford which I think is a very good summary of many of the issues.

- https://www.bsg.ox.ac.uk/news/lessons-crisis-preparation-covid-19 **[JF/16 - INQ000183324]**
- https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long emergencies.pdf **[JF/17 - INQ000183325]**
- https://wellcome.org/press-release/wellcome-statements-novel-coronavirus-covid-19 **[JF/25 - INQ000183290]**
- https://www.ft.com/content/031b42a7-e2b3-43ae-9139-d31a4cb37498 **[JF/26 - INQ000183305]**
- https://www.washingtonpost.com/opinions/2022/01/31/what-if-were-middle-no

t-end pandemic/ [**JF/27 - INQ000187463**]

- https://podcasts.apple.com/fi/podcast/rapid-response-lessons-of-omicron-w-sir jeremy/id1227971746?i=1000548459871 [**JF/28 - INQ000183307**]

- https://www.imf.org/en/Publications/WP/Issues/2022/04/04/A-Global-Strategy-to-Manage the-Long-Term-Risks-of-COVID-19-516079 [**JF/29 - INQ000183308**]

- https://www.nejm.org/doi/full/10.1056/NEJMe2102882 [**JF/30 - INQ000183309**]

- https://issues.org/jeremy-farrar-interview-wellcome-covid/ [**JF/31 - INQ000183310**]

- https://www.instituteforgovernment.org.uk/event/online-event/conversation-sir-jeremy-farrar director-wellcome-trust **[JF/32 - INQ000249524]**

38. Suggestions as to how SAGE could be better structured and/or equipped for future crises

38.2. I believe I am right in saying the 'SAGE for COVID" was by far the longest serving SAGE. As such, it was not designed for the "semi-permanent role". I refer to the recent report on how to design a system for "Crisis preparation in the age of long emergencies" by the Blavatnik School of Government University of Oxford. We are likely to face more frequent and more complex, all of society crisis in the years ahead, we need to prepare for those with functional, tested systems that are independent of which individuals happen to be in political or public service at the time.

38.3. https://www.bsg.ox.ac.uk/news/lessons-crisis-preparation-covid-19 [**JF/16 - INQ000183324]**

38.4. https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age long-emergencies.pdf **[JF/17 - INQ000183325]**

38.5. https://weekly.chinacdc.cn/en/article/doi/10.46234/ccdcw2021.032 [**JF/33 - INQ000183311**]

38.6. https://www.spiegel.de/international/world/epidemiologist-jeremy-farrar-on-the-next viral-threat-i-fear-we-are-at-the-beginning-of-an-era-of-pandemics-a-564b1dae-1c3d 4eb3-b76f-f3c5da6e8289 **[JF/34 - INQ000183312]**

39. In your view, what more, if anything, could be done to communicate information effectively to the public? Please describe any practical limitations that prevented this from happening, and provide any suggestions you may have as to how transparency and public scrutiny of modelling could be improved.

39.2. By not waiting for a crisis to engage, involve, communicate. Trust, like all other aspects cannot be built in a crisis, it needs constant effort and commitment all the time, explained, again and again, in as many public fora, schools, work places, in the media all the time.

39.3. And it can be monitored and measured allowing individuals and agencies to adjust. Two examples

39.3.1. **Wellcome Global Monitor**
https://wellcome.org/reports/wellcome-global-monitor/2018 [**JF/35 - INQ000183313]**

39.3.2. https://wellcome.org/reports/wellcome-global-monitor-covid-19/2020 [**JF/36 - INQ000249525]**

39.3.3. **The Annual Edelman Trust Barometer**
https://www.edelman.com/trust/2023/trust-barometer [**JF/37 - INQ000249523]**

40. Views on greater collaboration between different academic disciplines to ensure sufficient integration of epidemiological and economic modelling

40.2. Many thoughts on this. Including to consider;

40.3. A shift to a broader education until age 18 across the humanities, arts and sciences such as in the Baccalaureate system

40.4. More opportunities at undergraduate university and technical college level to study in the UK towards a 'Liberal Arts" or "Liberal Sciences" degree or other qualification which encourages study across the humanities, arts and sciences.

40.5. Examples in UK

40.5.1. Undergraduate course at the University of Cambridge [**JF/38 - INQ000183314**]

40.5.2. ,Undergraduate course at the University of Exeter [**JF/39 - INQ000183315**]

40.6. Example in USA

40.6.1. Bachelor of Arts course at University of Princeton [**JF/40 - INQ000183316**]

40.6.2. Active work to create and sustain inter and multi-disciplinary teams as part of the future of Public Health – **"A new twenty-first century science for effective epidemic response".** Juliet Bedford, Jeremy Farrar, Chikwe Ihekweazu, Gagandeep Kang, Marion Koopmans & John Nkengasong https://www.nature.com/articles/s41586-019-1717-y **[JF/41 - INQ000183318]**

41. Views on the UK's science-policy advisory mechanisms

41.2. I believe the UK's science-policy advisory mechanisms are right and should not be tinkered with.

41.3. An active "scientist" (broadly defined to include those from diverse backgrounds - social sciences, behavioural, economics, humanities, physical sciences, as well as 'natural sciences"), non-political, an integral part of every ministry, appointed by and networked through the Chief Scientist reporting to the Cabinet Office. The network effect brings many advantages and complementarity, they are a team.

41.4. I think these individuals should be drawn from a broad range of backgrounds, should remain active with joint appointments in universities, institutions or industry, and rotate into the roles and out of them, i.e not permanent jobs.

41.5. I have spoken with many governments over many years and have made the case for them to consider this structure as they review their own advice into government.

41.6. This network is then supported via a transparent, SAGE Group with additional expertise and rotation as the situation demands.

41.7. I would very strongly advise not to change this basic structure.

42. Addressing issues of diversity and equality

42.2. Equity, Diversity and Inclusion should be an integral part of every element of government systems and structures. It is the only way an organisation, an agency or a government can deliver its mission.

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief of its truth.

Personal Data

Dated: 28 April 2023