Witness Name: Professor Lucy Yardley
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COVID-19 INQUIRY – MODULE 2

Witness Statement of Professor Lucy Yardley

I, **PROFESSOR LUCY YARDLEY**, of the School of Psychological Science at the University of Bristol, 12A Priory Road, Bristol BS8 1TU and School of Psychology at the University of Southampton, Southampton, SO17 1BJ, will say as follows:

1: Introduction

1.1. I make this statement pursuant to the Covid-19 Inquiry's Rule 9 request of 30 March 2023 (**'The Rule 9'**).

1.2. I previously submitted a response to the Inquiry's Rule 9 Questionnaire of 2 September 2022 on 29 September 2022 (**'The Rule 9 Questionnaire Response'**).

1.3. The matters I set out within this statement are within my own knowledge save for where I state otherwise. Where I refer to facts not within my own knowledge, I will provide the source for those facts. The contents of this statement are true to the best of my knowledge and belief.

1.4. I did not make personal notes, nor do I hold any records of, any of the SAGE, SPI-B or other informal meetings and discussions that I participated in. I expect that GO-Science, as the Secretariat, will hold records of the SAGE and SPI-B meetings.

2: Professional background

2.1. I completed a BSc in Psychology at the University of Southampton in 1984 and a PhD in Psychology at the University of Southampton in 1992.

2.2. I am currently a Professor of Health Psychology at both the University of Bristol and the University of Southampton. I am also a Senior Investigator at the National Institute for Health Research (**'NIHR'**) and the Behavioural Science Theme Lead of the NIHR Health Protection Research Unit at the University of Bristol and the NIHR Applied Research Collaboration-West. Throughout the pandemic, I was also the Behavioural Science Theme Lead for the University of Southampton Biomedical Research Centre.

2.3. I have previously held positions as a Lecturer & Senior Lecturer at University College London from 1992-1998, Senior Lecturer/Reader/Professor at the University of Southampton from 1998-2017, and Professor of Health Psychology (0.5 FTE) at the Nuffield Department of Primary Care Health Sciences at the University of Oxford from 2017-2018.

2.4. When appointed to the role of Co-Chair of SPI-B, I had over 600 publications, resulting in 43704 citations and an h-index of 90. (These figures were taken from my Google Scholar profile when I updated my CV on 22/09/2020). I had been the Principal Investigator on grants totaling over £10 million from UK Research and Innovation **('UKRI')**, NIHR, the Economic and Social Research Council ('**ESRC'**), the Engineering and Physical Sciences Research Council ('**EPSRC**), the Wellcome Trust and other sources. I had also been Co-Investigator on grants totaling well over £60 million (funding bodies included the Medical Research Council (**'MRC'**), ESRC, European Union (**'EU'**), NIHR, the Wellcome Trust and other medical charities).

2.5. My particular expertise relevant to my SPI-B role is in supporting the infection control behavior of individuals and groups, such as families and healthcare practitioners, and providing positive support for healthy behaviors.

2.6. I have an international reputation for developing and evaluating health-behaviour change and self-care interventions, with a focus on web-based interventions. I developed the 'Person-based approach' to intervention development with my research group, which draws together qualitative research and user-centred design methodology to develop a deep understanding of the views and experiences of the potential users and the contexts in which they live. I pioneered the 'LifeGuide' software, which was designed for developing web-based interventions.

2.7. I was elected as a fellow of the Academy of Social Sciences and the British Psychological Society, and I was appointed an Officer of the Order of the British Empire ('**OBE'**) in the 2020 Queen's Birthday Honours for services to the Covid-19 response.

3: My role as Co-Chair on SPI-B

3.1. I participated in both SAGE and SPI-B during the Covid-19 pandemic, the latter of which was from its inception in February 2020 until it was stood down. I became a SAGE participant shortly after the first lockdown commenced, as a consequence of being asked by Professor James Rubin to become Co-Chair of SPI-B in order to share SPI-B responsibilities, including representing SPI-B at SAGE meetings. The first SAGE meeting I attended was on 26 March 2020 (meeting 19) and the last meeting I attended was on 27 May 2021 (meeting 90). In total I participated in 41 SAGE meetings. The first SPI-B meeting was on 24 February 2020, and we met approximately once a fortnight throughout the pandemic. I accepted an invitation from Professor James Rubin to become a Co-Chair of SPI-B on 12 April 2020 [**LY/01- INQ000188922**] and elected to step down from this role in June 2021.

3.2. I was originally a participant in the Scientific Pandemic Influenza (**'SPI'**) committee and its sub-group on behaviour and communications (**'SPI-B & C'**) for the H1N1 (**'swine flu'**) pandemic. I was asked to join SPI because in the year prior to the swine flu pandemic I commenced an MRC funded project to develop an online interactive website called 'Germ Defence', to support people to engage in infection control in the home to reduce the spread of respiratory infections. This 'Germ Defence' website intervention remains the only digital intervention proven effective for this purpose worldwide and was updated with funding from UKRI for the Covid-19 pandemic.

3.3. I was contacted by Professor James Rubin, who had also been a participant in the H1N1 SPI, from the Health Protection Research Unit (**'HPRU'**) in Emergency Preparedness and Response via email on 26 January 2020, to ask if I agreed that it would be appropriate to approach the Department of Health and Social Care (**'DHSC'**) to reconvene SPI-B, which I agreed with [**LY/02 – INQ000188923**]. Prior to that, I had been asked in January 2020 to provide occasional advice to DHSC on behavioural aspects of the Covid-19 response through my role as academic lead of the Intervention Development Theme of the Health Protection Research Unit in Behavioural Science and Evaluation at the University of Bristol, which involved working closely with Public Health England (**'PHE'**).

3.4. Immediately when the first lockdown commenced, I suggested to Professor James Rubin that SPI-B needed to start work on how to support people to ease social distancing restrictions [**LY/03- INQ000188924**], as my focus throughout the pandemic was on facilitating normal activity as far as possible. He put this suggestion to SAGE,

and it was approved as a topic [**LY/04- INQ000188925**]. I led the development of a paper on this with SPI-B participants [**LY/05- INQ000074899**] under the guidance of Professor James Rubin and presented it at SAGE. This subsequently led to a second joint paper with SPI-M-O [**LY/06- INQ000188927**]. Professor James Rubin then asked me to become a Co-Chair of SPI-B to share the extremely demanding SPI-B responsibilities, including representing SPI-B at SAGE meetings [**LY/01- INQ000188922**]. This seemed an appropriate request as very few behavioural scientists had expertise specifically relevant to infection control and pandemic management, and I also had very extensive expertise in positive support for health-related behaviour change. As an efficient structure, Professor James Rubin proposed six SPI-B workstreams, each led by a different SPI-B participant with relevant expertise, with the three Co-Chairs acting as liaison with SAGE on behalf of two of these (in my case, the workstreams on easing restrictions, which I led, and on communication and implementation, which was led by Professor Chris Bonell) [**LY/01- INQ000188922**].

3.5. As my Co-Chairs, Professors James Rubin and Brooke Rogers, were experienced in policy work, and as I had little policy experience, I saw my initial role as principally to build resilience within SPI-B, by sharing the workload with them, in order to help them manage their professional and personal commitments alongside their contribution to pandemic efforts. With their guidance, and further guidance from Professor Theresa Marteau, I quickly learned the format required to communicate theory and evidence based behavioural recommendations in a form that would be clear and succinct for policymakers to draw on and took the lead in doing this on topics I felt were in my area of expertise (being infection control and providing positive support for healthy behaviours).

3.6. As a Co-Chair of SPI-B, I contributed to most papers by inputting some text and/or comments on drafts, except those relating purely to topics that I had no relevant expertise on and those on which other SPI-B members had much greater expertise (e.g. policing and school closures). My main contribution to papers was to input text on positive ways to sustain adherence and overcome barriers to adherence to the infection control measures advised by the government, and to support people to continue as much activity as safely as possible. The Co-Chairs also played a coordinating role where necessary, to try to ensure that papers led by SPI-B participants with less experience of leading SPI-B papers were formulated in the way

needed to inform policy and represented the broad views of all those with relevant expertise. SPI-B participants who led papers presented them to SAGE themselves.

3.7. Below are the papers on which I played a key role initiating, drafting and revising the SPI-B contributions to text:

(1) Easing restrictions on activity and social distancing: comments and suggestions from SPI-B, 1 April 2020 [**LY/05-INQ000074899**].

(2) SPI-M/SPI-B: Principles for the design of behavioural and social interventions, 21 April 2020 [**LY/06- INQ000188927**].

(3) SPI-B: Managing infection risk in high contact occupations, 15 June 2020 [**LY/07- INQ000188928**].

(4) SPI-B/EMG: MHCLG Housing Impacts Paper, 10 September 2020 [**LY/08-INQ000188929**].

(5) SPI-B: Positive strategies for sustaining adherence to infection control behaviours, 22 October 2020 [**LY/09- INQ000197210**].

(6) EMG/SPI-B: Mitigating risks of SARS-CoV-2 transmission associated with household social interactions, 26 November 2020 [**LY/10- INQ000188931**].

(7) EMG & SPI-B: Application of CO2 monitoring as an approach to managing ventilation to mitigate SARS-CoV-2 transmission, 27 May 2021 [**LY/11-INQ000188932**].

3.8. Additional responsibilities of the SPI-B Co-Chairs were chairing and moderating SPI-B discussions, responding to or co-ordinating SPI-B responses to specific requests from particular government departments (e.g., advice on sustaining adherence from Cabinet Office ('**CO**') and advice on carrying out qualitative research for the Office of National Statistics). I also represented SPI-B on other relevant committees such as the Joint Committee on Vaccination and Immunisation ('**JCVI**') to advise on behavioural aspects of the vaccine rollout, and the Testing Initiatives Evaluation Board, to advise on evaluation of initiatives to optimise the Test, Trace and Isolate system.

3.9. It is important to note that SPI-B advised on the potential psychosocial consequences of infection control measures, barriers to their implementation and ways of overcoming those barriers. Recommendations for which infection control measures were likely to be required and were effective were made by other SAGE subgroups (e.g. EMG, SPI-

M-O, NERVTAG) and consequently some SPI-B papers were produced jointly with these other subgroups.

4: Impact of time and resource constraints on the operation and composition of SPI-B

4.1. SPI-B was hastily, and at first informally, convened on the initiative of Professor James Rubin and members of his HPRU unit in the initial stages of the pandemic [**LY/02-INQ000188923**] with very limited administrative support from its inception. Professor James Rubin had to ask for permission to convene the group [**LY/02- INQ000188923**], though I am not sure who ultimately approved it. As mentioned previously, the first official meeting of SPI-B organised by GO-Science was on 24 February 2020. Until the late stages of the pandemic, no resource was given to support the work of SPI-B Co-Chairs or participants, who had to attempt to undertake the work on a part-time voluntary basis alongside their very full-time existing commitments. GO-Science provided invaluable, very high-quality support in terms of coordinating SPI-B membership and meetings, liaising with SAGE and the government, and coordinating SPI-B input to papers. However, no resource was provided for SPI-B to search, critically evaluate and summarise the huge emerging relevant national and international datasets (e.g. from polling), policy and strategy documents and rapid research studies which were the key sources of data available to inform SPI-B advice. Moreover, the rapid research programmes initiated by UKRI and NIHR to try to provide data to fill the evidence gaps in the pandemic were helpful and as rapid as possible, but nevertheless inevitably involved an extended process (peer review of funding proposals, contracting, appointing researchers) typically taking several months to even initiate, and hence were not able to provide useful data in the early months of the pandemic. I cannot recall exactly what resource was provided by GO-Science in the later stages of the pandemic and when it was provided. GO-Science will be able to provide further information about what resource was eventually provided and when.

4.2. Due to this lack of resource, in the first stages of the pandemic all the capacity of the SPI-B Co-Chairs, participants and Secretariat had to be devoted to trying to keep abreast of the very rapidly evolving international evidence regarding the nature and progress of the virus, the behavioural responses to it and the possible mitigation strategies and policies that might be employed to best manage the pandemic, so that we could provide well-informed and timely input to SAGE. We had to attempt to keep abreast of the emerging data and evidence and provide advice by informally doing and sharing within SPI-B our own scoping literature searches and reviews late at night or

early each morning, so that we were able to provide advice in person or through drafting papers during the day. This was hugely exhausting and was also very anxiety-provoking as it was extremely difficult for us to keep abreast of all relevant scientific and policy developments in a timely manner.

4.3. The lack of resource inevitably impacted on our ability to engage with international research findings as quickly and in as much depth as would have been ideal. It also impacted on the diversity of SPI-B, as it meant there was no time or resource available in the early stages of the pandemic to undertake a systematic search for a wide, representative group or to engage in formal processes for selecting and inviting members. It also meant that only people with the capacity to free up substantial time for SPI-B from their day-jobs and home commitments could make a significant input to SPI-B. In practice, this was mainly possible for people with relevant existing roles (such as in the NIHR-funded Health Research Protection Units or policy units).

4.4. The rushed, informal and under-resourced process of recruitment initially resulted in good broad representation of the relevant psychology disciplines that we were aware of. Thereafter, recruitment progressed to inclusion (albeit with more limited representation) of a wide range of other relevant disciplines (e.g. sociology, anthropology, geography, epidemiology, ethics, behavioural economics, law, criminology and mental health). It might have been difficult to have managed a larger group in the early stages of the pandemic, before formal structures had time to be set up. Moreover, few people had directly relevant experience, which made it difficult for a wide pool of people to input confidently at first simply because they lacked relevant expertise. Greater inclusion of a broader range of disciplines from the start could have been helpful, but whether the absence of particular disciplines on SPI-B had a significant negative impact is impossible to establish in retrospect. From July to September 2020, GO-Science worked with the SPI-B chairs to create a larger, more inclusive SPI-B membership, with a 'long-list' of people with potentially relevant expertise who could contribute to relevant topics and papers, and a coordinating committee of around 10 people to maintain continuity and organise the work of the wider membership. Both the long list and the coordinating committee were inclusive in terms of discipline, background and personal characteristics of members. I do not have a full record of the precise details of the SPI-B membership at each timepoint in the pandemic (I have numerous incomplete drafts that I commented on) but GO-Science will be able to supply correct, final details of how the SPI-B structures and membership

(with their disciplines, gender, ethnicity, background etc) evolved over the course of the pandemic. In the future, a pre-existing register of those with behavioural expertise and availability to provide pandemic-related advice would facilitate rapid recruitment of a wider range of experts.

4.5. Despite the initial predominance of psychologists in SPI-B, most of us had a good appreciation of wider social, contextual and inequalities considerations owing to a background in multidisciplinary public health research (as should be evident from the content and conclusions of SPI-B papers). The contributions to papers reflected the considerable diversity in perspective and expertise among SPI-B participants. Papers were led by different SPI-B participants, who either volunteered to lead papers or proposed papers by kicking off drafting content and were then jointly written with all interested participants invited to input. Rather than creating 'groupthink' this process resulted in bringing together multiple valuable complementary insights. It also permitted rapid critical peer evaluation of suggested text by a large number of SPI-B participants to ensure that it was appropriate, accurate and reflected expert consensus, grounded in relevant theory and evidence. In addition, SAGE participants and all the other sub-groups we worked closely with (SPI-M-O, NERVTAG, MEAG, EMG, Children's Task and Finish Working Group, Ethnicity sub-group) did include representation of many other disciplines, including sociology, geography, modelling, philosophy, and behavioural economics. Their perspectives were often incorporated into joint papers (see, for example [**LY/06-INQ000188927**], [**LY/07- INQ000188928**] and [**LY/08- INQ000188929**]). All SPI-B papers were also discussed at SAGE to allow comments to be made from the broader range of disciplinary perspectives represented on SAGE. Any important issues raised were then addressed in the final revisions of SPI-B papers before approval by SAGE.

4.6. Initially there was less diversity on SPI-B in terms of representation of vulnerable, minoritized or marginalised groups than we would have wished. This was due to the same reason as the lack of interdisciplinary diversity (i.e., that there was not sufficient time or resource available to specifically attend to this issue during the initial stages of the pandemic). When we did have time to address the diversity of the SPI-B membership, from July to September 2020, we prioritised recruiting more SPI-B members from a wider range of ethnic backgrounds (GO-Science will be able to supply correct details of precisely how the SPI-B membership, gender, ethnicity, background etc. evolved over the course of the pandemic). Whether the absence of particular

perspectives on SPI-B had a significant negative impact is impossible to establish in retrospect, although it is always best practice to be as inclusive as possible. However, all SPI-B members were well aware of structural, socioeconomic and cultural diversity and inequalities and their likely impact due to their background in public health, and SPI-B papers repeatedly, and from the earliest point, called for the inclusion of all communities and perspectives in co-producing and communicating all aspects of pandemic guidance (for example [**LY/05- INQ000074899**], [**LY/06- INQ000188927**], [**LY/07- INQ000188928**], [**LY/08- INQ000188929**] **and** [**LY/09-** **INQ000197210**]).

4.7. If a pre-existing register of behavioural expertise and availability to provide pandemic-related advice is created, then it should of course include diversity in terms of these characteristics. Issues of equality, diversity and inclusion are a key focus for health research funders such as the NIHR and for the future this should increase the pool of diverse pandemic experts available, which was somewhat limited in the early stages of the pandemic. As with the issue of disciplinary diversity, it is likely that greater initial diversity on SPI-B would have been helpful but could not in itself entirely address the issue of representation as it is not feasible to recruit a group of experts representing all sectors of society. For that reason, many SPI-B papers drew attention to potentially vulnerable groups and emphasised that diverse members of the community should be consulted about how they could best be supported to manage the pandemic (for example [**LY/05-INQ000074899**], [**LY/07- INQ000188928**], [**LY/08- INQ000188929**] and [**LY/09-** **INQ000197210**]). This problem could also be addressed in the future by creating community panels to input to SPI-B and SAGE advice. See my suggestions for the future in part 7 of this statement, 'Lessons Learned'.

5: Operation of SAGE and COBR

5.1. I have extremely limited previous policy experience and no knowledge of how government operates or should operate. I joined SAGE after the first lockdown commenced and I had no direct or indirect knowledge of the extent, nature or content of discussions with ministers and policymakers (apart from what was sometimes fed back by Sir Patrick Vallance and Sir Chris Whitty to SAGE). Consequently, I do not feel well qualified to comment on the views of government ministers, communications with them, or their decision-making processes and cannot take a view on whether the government relied too heavily on SAGE during the initial stages of the pandemic. Similarly, I do not have any insight into whether ministers wished to delay lockdown for political reasons and whether this may have influenced some scientists. I do not recall

that issue ever being discussed in SPI-B or in SPI-B papers. As far as I am aware (although I was not a Co-Chair or on SAGE at the time) the SPI-B input requested by SAGE was to provide advice on how to help people implement lockdown and to predict and mitigate barriers and negative effects rather than advise on the timing of when it should be introduced.

5.2. I am able to describe my subjective experience of commissioning and communication channels between SAGE and the government. From when I first became a SPI-B participant I was made aware that the role of SPI-B was to answer questions posed by SAGE, which in turn responded to questions posed by the government, (or sometimes questions came directly to SPI-B from government, with GO-Science being the conduit for these requests). This arms-length, top-down process was written into the SPI-B Terms of Reference (referred to in paragraph 6.13 at [**LY/20- INQ000188941**]) and did introduce delay because sometimes it could take a week or even several weeks for questions for SPI-B to address to be confirmed. It was possible for SPI-B to suggest questions, but these had to be approved by SAGE or government. Sometimes GO-Science played a key role in communicating between SPI-B and SAGE or government to agree SPI-B commissions, but sometimes approval was sought directly by SPI-B chairs (for example, during the regular meetings between the sub-group Co-Chairs and Sir Patrick Vallance or by Chairs raising issues directly during discussions at SAGE).

5.3. For example, as I mentioned at paragraph 3.5, immediately after lockdown I suggested to Professor James Rubin (the sole SPI-B Chair at the time) that it would be useful to contribute a SPI-B paper on how to resume activity safely and this suggestion was proposed by Professor James Rubin and discussed and endorsed at the next SAGE meeting, leading to a SPI-B paper published on 1 April 2020 [**LY/05- INQ000074899**]. Sometimes delay was incurred if questions from government needed to be clarified or modified because we felt they were not formulated in the most helpful way. When this occurred, it usually seemed to reflect an unsophisticated understanding of human behaviour, and policymakers were open to our revisions. For example, in the autumn of 2020 there was concern among policy-makers about how to counteract 'pandemic fatigue', which was a popularised term that did not have any basis in psychological theory (albeit being employed by the World Health Organisation). In response to their request (communicated by GO-Science) to discuss this topic [**LY/12- INQ000188933**], I suggested that this should be reformulated as the more precise question of how to

sustain adherence to infection control behaviours. This change was accepted, and the topic addressed in a SPI-B paper on 22nd October 2020 [**LY/09- INQ000197210**]. As [**LY/12 – INQ000188933]** illustrates, sometimes questions came directly to SPI-B from government, with GO-Science being the conduit for these requests. I cannot recall other examples of where questions came directly to SPI-B from government, but I believe that GO-Science may be able to provide further examples, since they were the conduit for these requests.

5.4. With regard to communicating the conclusions of SAGE to Ministers, I had the impression that they were verbally conveyed by Sir Patrick Vallance and Sir Chris Whitty very rapidly at personal and COBR meetings following SAGE meetings. I sometimes had the impression (especially when infection rates were very high) that ministers had acted immediately based on the advice of SAGE, with government announcements within a few hours reflecting SAGE advice to some degree. However, apart from what was fed back informally by Sir Patrick Vallance and Sir Chris Whitty at SAGE, it was almost entirely a matter of guesswork as to what decisions had been affected by SAGE advice, in what ways and why, or why not. My understanding was that it was simply our role to provide scientific evidence and scientifically informed recommendations and then leave ministers to decide whether and how to apply this information and advice. There were certainly many examples of policymakers not implementing SPI-B recommendations. For example, SPI-B repeatedly advised throughout the pandemic that more informational, practical, social and financial support was needed to help people adhere to home quarantine when infected (as was done elsewhere, e.g., New York) but this was not implemented by central government. Due to the lack of any direct communication between SPI-B and policymakers, I do not have more insight than members of the public into whether the government decision-making process was chaotic, although the lack of clear and timely communication with SPI-B about policy strategy options suggests that it may have been.

5.5. There was certainly a lack of transparency about SAGE's membership and advice. I assumed that this lack of transparency emanated from government as it seemed to be a pervasive government policy, since the policy was not only to not publish SAGE membership and advice, but also not to allow SPI-B publications to refer to unpublished government data it was based on (e.g., surveys, focus groups). This sometimes made it difficult to show how the advice was evidence-based or led to considerable delays in publication while seeking approval. The lack of transparency on

SAGE was so great that SPI-B members had to give advice without having sight of SAGE papers until they were published, which meant that SPI-B lacked this important avenue of timely and detailed insights into the rapidly evolving UK pandemic context. This also meant that only the SPI-B Co-Chairs who attended SAGE fully understood the context of SAGE requests to SPI-B for advice, and how this advice was likely to contribute to wider SAGE discussions.

5.6. The lack of transparency regarding SAGE was initially presented as an attempt to protect scientists from potential hostility from the public, and this was a reasonable concern. Confidentiality concerning the details of who contributed what viewpoint in SAGE discussions was probably helpful in terms of allowing SAGE members to express their views freely. However, after SAGE members made it clear they would prefer transparency with respect to SAGE meeting participants and papers, there still seemed to be reluctance to make papers public quickly which sometimes resulted in a delay in the publication of SAGE papers. Given the very rapidly changing situation at many points during the pandemic, even a relatively short delay in their publication is likely to have contributed to a lack of timely public awareness and uninformed media speculation about what the SAGE scientific appraisal of the current situation was. This contributed to SAGE members (including myself) feeling obliged to directly appraise the public of the scientific evidence regarding the current situation through the media when we felt that there were serious risks and ways of mitigating them that the public needed to know about, and a lack of government messaging about these risks and how best to manage them. For example, I attempted to make the public aware through the national media of how to reduce risks of infecting vulnerable household members during the first Covid wave and during the following Christmas period [**LY/13-INQ000188934**] and [**LY/14- INQ000188935**].

5.7. I have been asked to comment on the statement that an 'apparent lack of data-sharing was seriously hampering the understanding of WN-CoV' at the fourth SAGE meeting on 4 February 2020. I cannot comment on this matter as I was not a member of SAGE at the time, and I believe that this probably refers to data that was needed by SPI-M rather than SPI-B.

6: Commissioning and operation of SPI-B

6.1. Government departments made limited use of SPI-B. Occasionally DHSC or CO sought general advice on communication strategies. For example, I can see from an

entry in my work outlook diary on Thursday 5 November 2020 that there was a meeting at 16:15 scheduled between Simon Ridley and other CO colleagues, myself, Professor James Rubin, Sir Chris Whitty and other SPI-B/SAGE members titled 'interventions and adherence'. As I mentioned at paragraph 1.4, I did not keep personal notes of the meetings I attended, and therefore I cannot recall exactly what we discussed at this meeting, but from the title and date of the meeting it appears that we likely discussed how to sustain adherence, which would presumably include communication strategies. However, GO-Science may well have also arranged meetings regarding advice on communication from other SPI-B members, which I do not have a record of. There was representation of PHE on SPI-B (PHE was an executive agency of DHSC) and occasional attendance by members of other government departments, and I believe that some individuals within SPI-B worked with departments on some specific campaigns or issues (for example, messaging to young people).

6.2. The relationship between SPI-B and SAGE and between SAGE and government in terms of commissioning is described in section 5 of this statement. It would have been preferable to have better two-way channels of communication, allowing SPI-B to propose topics in a more direct manner, which might have improved the advisory process. This would have been especially helpful with respect to SPI-B's role as an emergency advisory system as it would have allowed us to respond more quickly to rapidly changing events, rather than waiting for commissions to be proposed or agreed. However, I felt that we worked well with other sub-groups and the interdisciplinary perspective this gave to advice was particularly valuable. I also felt that our work was incorporated into SAGE advice. I have insufficient experience and expertise in advisory processes in policymaking to comment confidently on what alternative processes might have been usefully employed, but have made suggestions for possible future improvements throughout this statement, based on my personal experiences on SPI-B.

6.3. There were no structured feedback loops to communicate if and how SPI-B advice was used by government and there was no direct communication with ministers regarding the options they were considering and the reasons for policy decisions. We occasionally had informal feedback that our advice had been found useful by government departments, and Sir Patrick Vallance sometimes also discussed briefly and informally how SAGE advice appeared to be received by ministers. I can recall that he attended SPI-B twice to specifically communicate that he was aware that the

advice from SPI-B was appreciated within government. I do not recall the dates that he attended SPI-B. GO-Science will have a record of these. He also sometimes mentioned government attitudes informally at meetings with the Co-Chairs of SAGE sub-committees. In addition to this, at the start of SAGE meetings he often fed back his views on how SAGE and SPI-B advice had been received by government, and this varied from acceptance to rejection of our recommendations. I do not recall the details of all of these discussions, but I recall one example where he mentioned that the SPI-B recommendation to provide financial support for quarantine was not considered appropriate by the government. The lack of feedback about how SPI-B might contribute constructively to informing policy decisions was demotivating for SPI-B members, made it difficult for them to know what was useful to policymakers and contributed to them feeling that they needed to use other channels to promote advice they considered important.

6.4. Regarding the ethical framework which SPI-B operated within, SPI-B members were experienced in providing expert consultancy input within the ethical frameworks of the professional bodies of which they were accredited members. This varied by discipline. For example, in my case the relevant bodies were the Health and Care Professions Council and the British Psychological Society, both of which set out clear standards of good conduct that are required of members.

6.5. Professor Michael Parker was an active member of SPI-B as well as the Moral and Ethical Advisory Group (‘**MEAG**’) and so provided a link between them. MEAG provided commentary on SPI-B papers when they were discussed at SAGE.

SPI-B’s advice related to use of risk and fear messaging

6.6. SPI-B papers were directed at the whole population because SAGE modelling clearly showed that the networks of contacts in the population were so interlinked that the only way to protect those most at risk was to reduce population levels of infection. Because of this, focusing too much on risk to vulnerable populations could have fostered a false impression that contact among those who were not vulnerable would not result in transmission to vulnerable groups (which was in fact a common misconception). However, wherever relevant, our papers did draw attention to groups with specific vulnerabilities – for example, those vulnerable people who did not have space to socially distance from an infected family member in the home, those in high contact occupations, or vulnerable people planning to have family contact at Christmas. We

also drew attention to existing inequalities that contributed to these vulnerabilities, such as precarious employment and poor housing.

'Nudge Theory'

6.7. 'Nudge theory' is the term used for an approach to behaviour change drawn from behavioural economics. The theory advocates making small changes in the environment (including messaging) that are easy and inexpensive to implement to 'nudge' the individual towards choosing the desired behaviour change. For example, messages offering people a personal vaccination slot were effective in increasing the rate of Covid vaccination uptake in the US [**LY/15- INQ000188936**]. Generally speaking, there is evidence that nudging can be effective although effects are usually small, and nudging has been proposed as a preferable alternative to either placing all the responsibility on the individual to initiate behaviour change or using coercion (e.g., mandating the behaviour).

6.8. Because the nudges are typically small and their effects generally weak, it is implausible to view them as unacceptably coercive since the environment one is in inevitably offers options in ways that shape our choices and hence it is impossible to escape being 'nudged' at all times by a variety of influences. However, nudge theory only addresses some of the barriers and facilitators for behaviour (often at the level of the individual, which is too limited in scope) and was therefore not much used to inform SPI-B advice. SPI-B consistently promoted a culture of positivity throughout the pandemic; numerous SPI-B papers emphasised that messaging and interventions should focus on encouraging and supporting people to work together to protect everyone. The government Behavioural Insights Team explicitly uses nudge theory as their key method of promoting behaviour change [**LY/16- INQ000188937**], and presumably applied it to their suggestions for Covid-19 messaging [**LY/17- INQ000188938**]. There was limited contact between the Behavioural Insights Team and SPI-B, and so I cannot comment further on how they used it. They did participate in some SPI-B meetings and discussions, although I cannot recall how many SPI-B meetings and discussions they attended nor the detail of them. I expect that GO-Science, as the Secretariat, would have a record of this.

6.9. At the eighteenth meeting of SAGE on 23 March 2020, the paper 'Options for increasing adherence to social distancing measures' was discussed. In the paper, SPI-B stated that 'a substantial number of people still do not feel sufficiently personally threatened; it could be that they are reassured by the low death rate in their

demographic group….the perceived level of personal threat needs to be increased among those who are complacent, using hard-hitting emotional messaging'. I have been asked to comment on this statement. If the statement had been made on its own it would be problematic, but the following sentence on page 2 of the paper goes on to say: ' **To be effective this must also empower people by making clear the actions they can take to reduce the threat'** [**LY/18-INQ000188939**]**.** The paper also contains a table on page 6 that specifically alerts the reader to possible negative spillover effects of using this kind of messaging.

6.10. 'Personal threat' is the technical term taken from the very strong theory and evidence base that indicates that perceived personal risk of real harm (either to oneself or to people one cares about) is highly effective in motivating people to undertake health protection, if it is accompanied by a belief that there are effective measures that can be taken to manage the threat. Methods to increase perceived personal threat are sometimes used in public health and considered ethical when they have the potential to save lives ; for example, the use of very unpleasant pictures of smoking-related disease on cigarette packets. It would have been unethical to not mention this option since it is known to be effective and therefore had the potential to save lives through changing health protection behaviour, and it was particularly ethically important to alert people who were underestimating the risk to themselves or people they were close to of the risks they and those around them faced. It would have been problematic if this was the only, or the main, strategy suggested by SPI-B for changing behaviour, but actually SPI-B repeatedly emphasised in this and many other papers that the general tone of messaging should be positive and supportive. For example, this paper offered 24 other options including 'Use media to promote positive messaging around action.' The table I mention at paragraph 6.9 (which noted that increasing personal threat could have negative spill-over effects) also listed six alternative options for positive messaging and support that had evidence of effectiveness and noted that these had positive spill-over effects. In line with their role as a scientific advisory body, SPI-B listed all of the evidence-based options, the evidence for their effectiveness and their consequences, leaving it to the government to make the decision as to what to do.

Fear as a driver of compliance during the pandemic

6.11. The very well-proven 'Protection Motivation Theory' predicted that perceived significant risk to self or friends and family was likely to be an important influence on behaviour. There is evidence from surveys [**LY/19-INQ000188940**] that this was true

for Covid-19, and public support for mitigations seemed to be strongest when the threat to everyone was evident due to hospitals exceeding their capacity. However, as SPI-B consistently emphasised, there are many other equally important influences on behaviour, particularly environmental and socioeconomic support.

6.12. Fear was understandably highest at the start of the pandemic when it was not yet clear what the mortality rate would be among various age groups, whether we would be able to bring the virus under control and whether healthcare and other essential services would break down. By the time of the autumn wave, fear levels were reduced because many of these uncertainties had been resolved and many people knew of mild cases of Covid in their own social circles (experiences of people one is socially connected to are typically a more powerful influence on perceptions than media communications).

Use and non-use of SPI-B advice in government strategies and messaging

6.13. I do not recall SPI-B being directed in what was and was not acceptable in terms of messages, languages and reference to policy. However, the scope and role of SPI-B was circumscribed by its subsidiary relationship to SAGE. When SPI-B was approved and given its remit [**LY/20- INQ000188941**] it was made clear that our principal role was to respond to requests for advice from SAGE, rather than suggesting topics ourselves. Sometimes these requests were from government and sometimes they emerged through SAGE discussions (including input from the SPI-B representatives attending) and the priorities identified by Sir Patrick Vallance and Sir Chris Whitty. When questions were posed to SPI-B by policy-makers it was often clear that they had been framed by people with limited or no understanding of behavioural theory and research, as the questions used lay terminology that did not have a basis in psychological theory or were concerned with scenarios or strategies that behavioural theory and research indicated were improbable or inappropriate (for example, asking about how to combat pandemic fatigue rather than sustain adherence). In practice, it was possible for SPI-B members to ask the SPI-B chairs to initiate and shape requests in discussions with Sir Patrick Vallance, who gave us explicit confirmation that we should not waste the time of SPI-B on any questions that we considered inappropriate to respond to [**LY/21- INQ000188942**]. Sometimes participants or chairs initiated rapid papers in response to specific emerging issues that they considered needed to be addressed very quickly. Nevertheless, this approach to commissioning SPI-B advice meant that (particularly in the early stages of the pandemic) the limited capacity of SPI-B was sometimes directed at responding in the first instance to government and SAGE

priorities for advice rather than setting our own priorities for what topics were most urgent and important. This did indeed restrict the independence of SPI-B and blur the line between science and advice in the sense that the topics that we were applying behavioural science to were those that the government had selected, even though our application of science to these topics was independent and evidence-based. Nevertheless, it was reassuring in this respect to note that the advice provided by SPI-B appeared to be highly consistent with the recommendations of independent behavioural scientists, which suggests that the extent to which the focus of SPI-B was directed by government did not distort the advice given.

6.14. A second limitation of the way in which the role and scope of SPI-B was defined was that we were asked to provide general expertise in behavioural science but were not generally given much opportunity to contribute expertise to inform the specific communication and implementation strategies for pandemic management. This was because government preferred to keep communication and implementation in-house – but communication and implementation are vital elements of behavioural science and the specific way in which behavioural advice is communicated and implemented has a crucial behavioural impact. The ways in which behavioural strategies were communicated and implemented by government were often very problematic, as the instances in the next section illustrate. Although I have very limited knowledge of how government messaging was developed and managed (and have no knowledge of the role of in-house behavioural experts in this) there appeared to be several potential reasons for poor communication and implementation. Often key messages were delivered by ministers (including of course the Prime Minister) who lacked the behavioural science understanding and skills to deliver them in the way that would have the best behavioural impact. Often government decisions on measures to take seemed to be made at the last minute, which made it impossible to develop effective communication and implementation strategies in time. Sometimes political considerations appeared to influence what was implemented and communicated in ways that could be detrimental to supporting population pandemic management (see specific examples below).

6.15. Some government messaging and policies did appear to be in line with SPI-B suggestions, although due to lack of feedback we did not know to what extent this was due to SPI-B or other influences. However, there was certainly selective use of advice, which was typically followed only partially and much later than advised. In this respect

it was inaccurate and misleading to describe government strategy as following scientific advice. For example, in [**LY05- INQ000074899**] and [**LY/06- INQ000188927**] issued in April 2020 (and many other papers) SPI-B specifically advised that in order to motivate and enable people to follow advice on how to control infection levels when activity was resumed, it would be necessary to substitute the current style of simple, top-down messaging ('Stay Home') with education and support to individuals and communities to assess, avoid and manage the risks they would encounter in different contexts. We also explicitly warned that 'It may be difficult to justify easing restrictions solely for economic activities without any easing of restrictions for low-risk activities with significant social and psychological benefit.' and that 'If strict restrictions are retained for months and then abruptly eased and people are told it is safe to resume social contact, they will expect this to mean that the risk of infection has ceased or significantly reduced. If there is then an increase in infection rates that necessitates a reintroduction of restrictions this is likely to be seen as a serious failure of policy and trust in public health advice will be lost' [**LY/05- INQ000074899**]. However, the government did not provide detailed, evidence-based explanations and justifications for the constant changes in guidance on what was and was not allowed during the rest of 2020 and permitted activities for economic reasons (such as 'Eat Out to Help Out' and workplace gatherings) without explaining and justifying why similar levels of contact were not allowed for psychologically important reasons (such as meeting family and friends). These departures from SPI-B communication and implementation advice were likely to undermine confidence in the guidance, and in the scientific advice the government claimed it was based on, since this pandemic management strategy was correctly perceived by the public as not fully consistent or effective. I had no direct experience of the approach of the Devolved Administrations to messaging and behavioural science, and so cannot comment on that.

Specific problems with government messaging

6.16. SPI-B evidence-based advice repeatedly emphasised that communications should be based on the assumption that people wanted to work collectively to manage the pandemic, but needed to be given clear, convincing, consistent, detailed and feasible guidance for doing so, together with appropriate support for implementation and feedback on how effective it was. However, government messaging was often restricted to simplistic slogans and top-down commands, the rationale for guidance was not well explained and the feasibility of implementing it was typically not sufficiently

considered or supported. This approach meant that the public did not develop a good enough understanding of the principles of pandemic management to implement it optimally. For example, the slogan 'Stay Home, Protect the NHS, Save Lives' helped motivate adherence to lockdown. However, this message did not convey the high risks of transmission within the home that needed to be explained to reduce transmission among family members and friends, which was a primary transmission route during much of the pandemic. The message also risked contributing to the underuse of the NHS during the pandemic that cost many lives. The slogan 'Stay Alert, Control the Virus, Save Lives' was completely nonspecific and therefore not designed to promote any particular infection control behaviour. SPI-B was not consulted about either slogan. The 'Freedom Day' slogan (which SPI-B was also not consulted about) may have reduced adherence to social distancing a little earlier and more completely than would have been ideal but was less likely to have had a substantial negative impact as it was introduced at a point in time when most people had been fully vaccinated.

6.17. The naming of the 'Test and Trace' system was itself unfortunate as it omitted the key step of isolation, which was the crucial final element of the system. The implementation was also sub-optimal and did not follow SPI-B repeated advice (see for example [**LY/22- INQ000188943**]) that better informational, practical, social, emotional and targeted financial support needed to be provided in order to enable people to fully adhere to quarantine (particularly those with low or precarious incomes or who needed to provide support to other family members). SPI-B provided examples of better support for implementation of self-isolation in a range of international contexts [**LY/22-INQ000188943**].

6.18. There is extensive evidence from surveys and qualitative research [**LY/23-INQ000188944**], [**LY/24- INQ000188945**] and [**LY/25- INQ000188946**] that a substantial proportion of the population found government guidance confusing, inconsistent, and difficult to implement. This was particularly true for some groups, including younger people and people from minority ethnic and other marginalised communities (who often had a higher risk of infection due to their occupations or accommodation). There is extensive evidence [**LY/26- INQ000188947**], [**LY/27-INQ000188948**] and [**LY/28- INQ000188949**] that it is vital to coproduce messaging with target groups and to use trusted people to deliver them (e.g. community leaders or members). Although local public health messaging was often developed and delivered in this way, because of lack of advance notice and planning, this could

usually only be done after government guidance had been issued centrally by politicians, government officials and journalists who were not trusted by large sectors of the population.

6.19. The summer of 2020 was a period in which the gap between government messaging and SPI-B communication advice (and other expert commissioned advice I contributed to such as the Academy of Medical Sciences report 'Preparing for a challenging winter', approved by SAGE [**LY/29- INQ000188950**]) was particularly noticeable and potentially problematic. This period of lower infections and less pressure for rapid adjustments offered an opportunity for a public health education campaign to be co-produced with all sectors of the population (as specifically advised in the executive summary of [**LY/29- INQ000188950**]) to help people understand key ways in which more effective implementation of infection control could be undertaken and could benefit everyone. Key gaps in communication were the failure to explain that if infection levels were kept low then more social and economic activity could be undertaken safely (e.g. school closures could be avoided) and that if infection levels were low the NHS would be more able to continue to provide healthcare for everyone (hence keeping infection levels low was not only for the benefit of those at risk from infection). People needed more help to understand that there was certain to be a resurgence of infection and that the exponential growth of infection meant that if measures to curb it were only introduced by the time it had fed through to hospitalisations, then this would be too late to avoid further substantial increases in deaths and would necessitate a longer and harder lockdown to bring it back under control. People also needed to understand how interlocking social networks made it impossible to protect vulnerable old and ill people from infection if infection levels were high among those likely to have Covid mildly (since infection would inevitably eventually be transmitted from them to vulnerable people). These facts about infection control were not clearly and systematically communicated at the time and have still not been communicated by government, resulting in continued confusion and misinformation about how the pandemic could and should have been managed that could have serious consequences for public support for management of the next pandemic. This period could also have been used to coproduce feasible and effective ways of implementing and supporting infection control with all communities and sectors of the population. This kind of work was undertaken within many organisations, supported by the Health and Safety Executive (as recommended by SPI-B), but was not extended sufficiently beyond workplaces.

For example, in some other countries, packages of practical and social support were provided to improve adherence to self-isolation and quarantine.

6.20. Instead of in-depth coproduction of messaging and feasible implementation strategies, the government used this period to introduce the 'Eat Out to Help Out scheme and its accompanying slogan. SPI-B was not consulted about this campaign and would have advised against it since it carried the implicit message that it was now safe and indeed socially important to resume social contact, even though this was not the case since infection levels were already rising and the vaccination programme was a long way off. I recall seeing some evidence that the 'Eat out to Help Out' scheme may have been associated with a spike in infection levels, but as I am not an Epidemiologist, I cannot provide any meaningful comment about how good this evidence was and the impact the scheme had on the transmission of the virus. Media accounts of ministers and other people in an official capacity (e.g., the police) failing to adhere to government guidance is likely to also have created the impression that it was not important to follow government guidance and contributed to social norms for not following it. Media and public reactions to these breaches illustrate how it was unhelpful to be simply focusing on following or not following simple rules, as in some cases the breaches were highly unlikely to have resulted in significant infection transmission, whereas in other cases it was likely that substantial infection transmission could have occurred, but no distinction was made between these. There was evidence from qualitative research [**LY/24- INQ000188945**] **and** [**LY/25- INQ000188946**] that members of the public were attempting assessment of infection risk associated with departures from government guidance that they felt were necessary, but these attempts were not sufficiently informed as they were not encouraged and supported by government guidance, which simply stated what was and was not allowed at a particular point in time. The lack of open and detailed discussion of the reasons why measures were or were not introduced is likely to have contributed to public confusion and scepticism about government guidance. For example, people could not understand why social contact was allowed in some situations (e.g., workplace lunches) and not others (large family gatherings). Since the rationale was presumably mainly socioeconomic rather than due to differences in infection risk (unless it was assumed that better infection control measures would be followed in workplaces) then public explanation and debate about these policies might have made them appear less arbitrary and inconsistent.

7: Lessons learned

7.1. In summary, the central government's approach to population pandemic management consisted principally of issuing a rapidly changing and increasingly complex set of instructions for what people should do. This approach contributed to confusion and lack of credibility of the guidance and failed to harness the willingness and ability of the vast majority of members of the population to try to implement pandemic management in an acceptable, feasible and effective way, to the extent that they were able. Behavioural theory and evidence strongly indicate that a more effective approach to changing and maintaining behaviours is to work with the people who will undertake these behaviours (i.e., members of the public from all sectors of society) to coproduce acceptable and feasible solutions together with support for implementing them. This ensures that the measures introduced are understood, trusted and supported, and therefore increases well-informed, self-motivated adherence to them.

7.2. Creating the structures and relationships that would support this kind of community-based coproduction cannot be done in the timescale of an emerging pandemic. I have very limited expertise in how science can and should be used to directly inform policy so do not consider myself to be an expert on how this should be done. However, my view is that the following elements could provide a better basis for pandemic management in the future:

(a) Pre-existing collaborative structures and channels of communication between policymakers, public health providers and independent scientists that can effectively support rapid coproduction and communication of science-informed pandemic management strategies and guidance at the national level, closed linked to community-based coproduction. This would mean replacing SAGE with permanent core structures that could prepare for emergencies (similar to groups such as NERVTAG and JCVI) and could then be quickly expanded as required for emergencies with a much larger membership and remit. These structures should be created as soon as possible to tackle the legacy of misinformation from the pandemic and address the gaps in understanding that make it difficult for people to make fully informed contributions to pandemic management (see paragraph g below).

(b) Diversity of people involved in all decision-making, including representation of seldom heard and underserved members of the population, particularly

those likely to be most negatively impacted by the pandemic and the measures undertaken to implement it. In addition to diversity in scientific experts, to achieve broad representation it will be necessary to fully involve people who are not scientific experts or policymakers, and so best practice coproduction methods are required to ensure they are able to contribute to decision-making.

(c) Pre-existing structures that can support rapid co-ordination and evaluation of available scientific behavioural evidence to support informed coproduction of guidance. The NIHR Health Protection Research Units and NIHR Policy units played an invaluable role in providing scientific expertise to SPI-B but need to be supplemented by creating a broader and more inclusive register of independent scientists (including scientists from outside the UK) able to provide additional pandemic-related expertise, with diversity in terms of discipline, expertise, geography, and protected characteristics.

(d) Pre-existing infrastructure for undertaking rapid behavioural work to optimise interventions to maximise their acceptability and feasibility and to evaluate their effectiveness. In particular, much better infrastructure is needed to support rapid qualitative research and co-production of interventions with diverse communities and to undertake objective measurement and efficient trials or natural experiments to test the effects of advice and interventions in different population sectors, using cost-effective methods such as routine data. To avoid the inevitable delay in initiating new research programmes, the infrastructure for rapid research needs to be created and funded in advance of the next pandemic and could undertake valuable underpinning research in the meantime (for example, in relation to understanding and reducing transmission of non-pandemic infections).

(e) Full and rapid transparency regarding the process of developing and implementing guidance, although with confidentiality for the details of individual contributions to discussions to ensure people feel able to engage in these freely and safely. This transparency should include very rapid publication of all scientific advice and evidence that contributed to developing the guidance, to allow for independent scientific scrutiny as well

as accountability to the general public. It is also important to have transparent real-time evaluation of the positive and negative effects of pandemic control measures to detect and address any problems with their implementation or effects and to increase their acceptability and credibility if they prove feasible and effective.

(f) Structural changes to support future acceptability and feasibility of pandemic control measures in all sectors of the population. Behavioural science, and the pandemic experience, has clearly shown that there are very powerful pre-existing socioeconomic and cultural influences on behaviour that will affect whether people can and will engage with pandemic control measures. For example, family living arrangements and needs for support may make it very difficult to prevent transmission, some forms of employment make risk of exposure to infection much greater, and some communities and individuals have a history of negative experiences of contact with government and other authorities that pose barriers to positive communication during a pandemic. It is therefore vital to recognise and address these barriers to pandemic management in non-pandemic years rather than attempting to rely on general population messaging to promote individual-focused behaviour change during a pandemic. If a future pandemic is more severe (which is entirely possible) then these structural problems will result in even more serious inequalities in health outcomes and will also pose greater risks to the whole population by sustaining infection levels.

(g) A public campaign to correct the legacy of misinformation and misconceptions from the Covid pandemic. If no attempt is made to better inform the public, so that in the future well-informed, co-produced management strategies can be deployed rather than simplistic yet inconsistent rules, this is likely to seriously undermine future pandemic management. There has never been sufficient explanation about how and why achieving better infection control would have reduced the impact of the pandemic on everyday life, the economy and the NHS's ability to provide normal care. There has been little attempt to provide the evidence we have that unfortunately some restrictions on activity were indeed necessary and did save many lives and prevent worse disruption. This Inquiry could help

to remedy this problem but needs to be complemented by coproduced methods of involving seldom heard and underserved groups and those most sceptical of the way in which the pandemic was managed. Education at school in the scientific basis for pandemic management could play an important role as younger people need to understand the rationale for pandemic control efforts in the future.

7.3. I am unable to comment on lessons that can be learned from the different international approaches to the incorporation of behavioural science into epidemiological modelling over the course of the pandemic, as I am unsure what this refers to. I am also unable to comment on whether the UK's science-policy advisory mechanisms should be re-evaluated as I am not a policy expert and feel that this is a matter for someone with more relevant expertise to comment on.

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.

Name: Professor Lucy Yardley

Signed: Personal Data

Dated: 11.08.2023